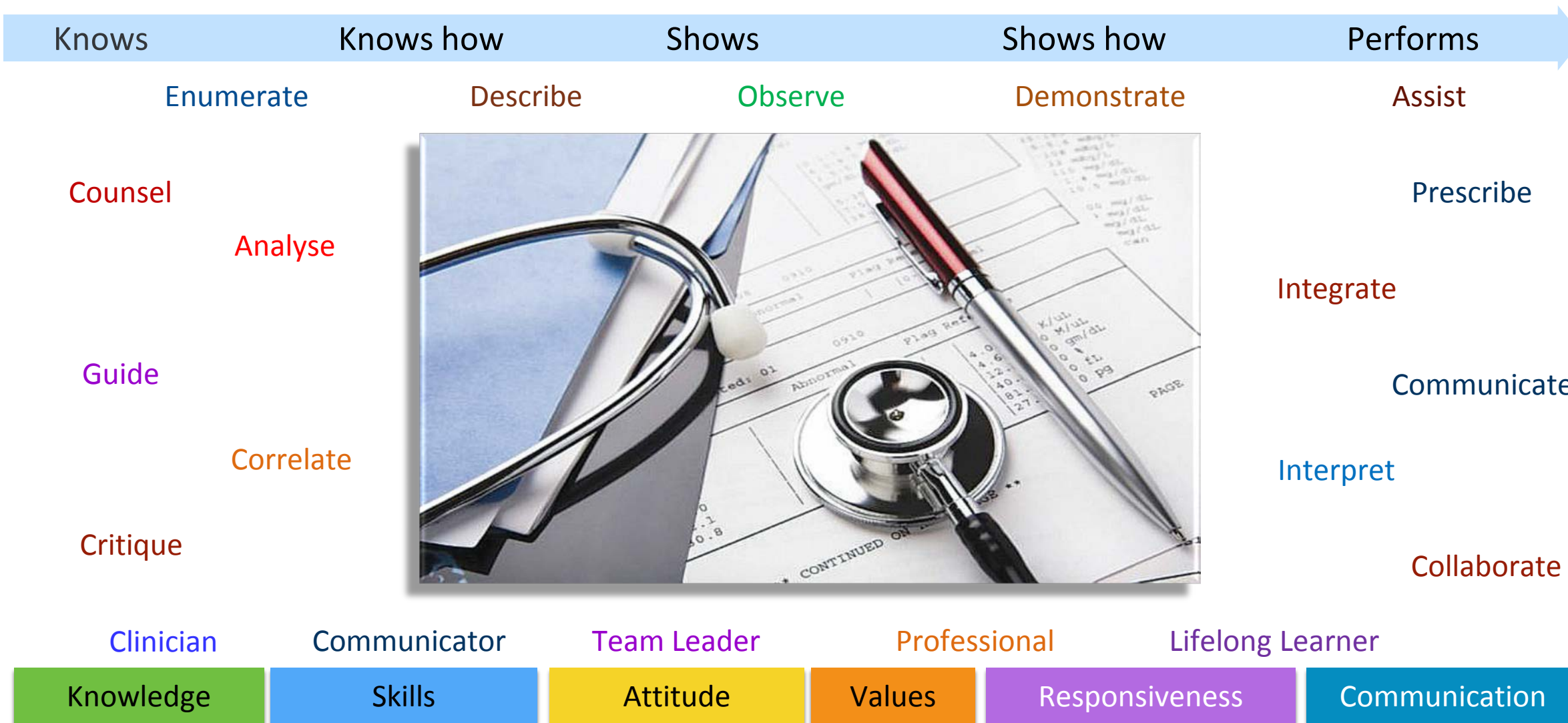


**COURSE OUTCOME STATEMENTS  
AS PER CBME PATTERN OF TEACHING  
AND LEARNING**



# MEDICAL COUNCIL OF INDIA

## COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE



VOLUME-I (2018)

**COMPETENCY BASED UNDERGRADUATE CURRICULUM  
FOR THE  
INDIAN MEDICAL GRADUATE**

**2018**



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## भारतीय आयुर्विज्ञान परिषद के अधिक्रमण में शासी बोर्ड

### BOARD OF GOVERNORS IN SUPERSESSION OF MEDICAL COUNCIL OF INDIA

#### FOREWORD

The Medical Council of India, aware of its responsibilities in creation of trained health manpower, has been engaged for the past few years in updating the medical curriculum for undergraduates and postgraduates to be in consonance with the changing health needs of the country. The task of updating and reorganization of the postgraduate curriculum in nearly 50 broad specialty disciplines to the competency pattern was accomplished by the Academic Cell of the Council with the help of subject experts and members of its Reconciliation Board and have been uploaded on the Council Website for use of the medical fraternity.

The Council visualized that the Indian Medical Graduate, at the end of the undergraduate training program, should be able to recognize "health for all" as a national goal and should be able to fulfill his/her societal obligations towards the realization of this goal. To fulfill the mandate of the undergraduate medical curriculum which is to produce a clinician, who understands and is able to provide preventive, promotive, curative, palliative and holistic care to his patients, the curriculum must enunciate clearly the competencies the student must be imparted and must have learnt, with clearly defined teaching-learning strategies and effective methods of assessment. The student should be trained to effectively communicate with patients and their relatives in a manner respectful of the patient's preferences, values, beliefs, confidentiality and privacy and to this purpose, a book on Attitude, Ethics & Communication was prepared by the Medical Council of India; the teaching faculty of medical colleges have been receiving training on this module since 2015.

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-2-

Competency based Medical Education provides an effective outcome-based strategy where various domains of teaching including teaching learning methods and assessment form the framework of competencies. Keeping this objective as the core ingredient, the Medical Council of India with the help of panel of experts drawn from across the country, laid the basic framework for the revised undergraduate medical curriculum. Over the past four years, a group of highly committed medical professionals working as Members of the MCI Reconciliation Board developed this information into a document incorporating appropriate teaching-learning strategies, tools and techniques of teaching, and modes of assessment which have culminated in the current competency based undergraduate curriculum. We understand that maximum efforts were made to encourage integrated teaching between traditional subject areas using a problem-based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both the understanding and resolution of the problem. All efforts have been made to de-emphasize compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases. We are proud of their work accomplishment and congratulate them in the onerous task accomplished.

It gives us great satisfaction to state that the '**competency based undergraduate curriculum**' that has been prepared by the Medical Council of India would definitely serve the cause of medical education and in creating a competent Indian Medical Graduate to serve the community.

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# **COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE**

## **Preamble**

The new Graduate Medical Education Regulations attempts to stand on the shoulder of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to take the learner to provide health care to the evolving needs of the nation and the world.

More than twenty years have passed since the existing Regulations on Graduate Medical Education, 1997 was notified, necessitating a relook at all aspects of the various components in the existing regulations and adapt them to the changing demography, socio-economic context, perceptions, values and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration. The strong and forward looking fundamentals enshrined in the Regulations on Graduate Medical Education, 1997 has made this job easier. A comparison between the 1997 Regulations and proposed Graduate Medical Education Regulations, 2018 will reveal that the 2018 Regulations have evolved from several key principles enshrined in the 1997 Regulations.

The thrust in the new regulations is continuation and evolution of thought in medical education making it more learner-centric, patient-centric, gender-sensitive, outcome -oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using “broad competencies”; instead, the reports have written end of phase subject (sub) competencies. These “sub-competencies” can be mapped to the global competencies in the Graduate Medical Education Regulations.

A significant attempt has been made in the outcome driven undergraduate curriculum to provide the orientation and the skills necessary for life-long learning to enable proper care of the patient. In particular, the curriculum provides for early clinical exposure, electives and longitudinal care. Skill acquisition is an indispensable component of the learning process in medicine. The curriculum reinforces this aspect by necessitating certification of certain essential skills. The experts and the writing group have factored in patient availability, access, consent, number of students in a class etc. in suggesting skill acquisition and assessment methods; use of skills labs, simulated and guided environments are encouraged. In the pre-internship years,- the highest level of skill acquisition is a show how (SH) in a simulated or guided environment; few skills require independent performance and certification - these are marked with P (for performance). Opportunity to 'perform' these skills will be available during internship.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated curriculum time in the form of a longitudinal program based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter-disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought, social and economic position and gender.

In addition to the above, an attempt has been made to allow students from diverse educational streams and backgrounds to transition appropriately through a Foundation Course. Dedicated time has been allotted for self directed learning and co-curricular activities.

Formative and internal assessments have been streamlined to achieve the objectives of the curriculum. Minor tweaks to the summative assessment have been made to reflect evolving thought and regulatory requirements. Curricular governance and support have been strengthened, increasing the involvement of Curriculum Committee and Medical Education Departments/Units.

The curriculum document in conjunction with the new Graduate Medical Education Regulations (GMR), when notified, must be seen as a "living document" that should evolve as stakeholder requirements and aspirations change. We hope that the current GMR does just that. The Medical Council of India is

grateful to all the teachers, subject experts, process experts, patients, students and trainees who have contributed through invaluable inputs, intellectual feedbacks and valuable time spent to make this possible. This document would not have been possible without the dedicated and unstinting intellectual, mental and time-consuming efforts of the members of the Reconciliation Board of the Council and the Academic Cell of MCI.

## How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created by subject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. They must be used with reference to and in the context of the Regulations.

### Section 1

#### Competencies for the Indian Medical Graduate

**Section 1** - provides the global competencies extracted from the Graduate Medical Education Regulations, 2018. The global competencies identified as defining the roles of the **Indian Medical Graduate** are the broad competencies that the learner has to aspire to achieve; teachers and curriculum planners must ensure that the learning experiences are aligned to this Manual.

#### Extract from the Graduate Medical Education Regulations, 2018

##### 2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an “Indian Medical Graduate” (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed:-



## **2.1. National Goals**

At the end of undergraduate program, the Indian Medical Graduate should be able to:

- (a) recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.
- (b) learn every aspect of National policies on health and devote herself/himself to its practical implementation.
- (c) achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- (d) develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- (e) become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

## **2.2. Institutional Goals**

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should:

- (a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.
- (b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
- (c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.
- (d) be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

- (e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
- (f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:
  - (i) Family Welfare and Maternal and Child Health (MCH);
  - (ii) Sanitation and water supply;
  - (iii) Prevention and control of communicable and non-communicable diseases;
  - (iv) Immunization;
  - (v) Health Education;
  - (vi) Indian Public Health Standards (IPHS) at various level of service delivery;
  - (vii) Bio-medical waste disposal; and
  - (viii) Organizational and or institutional arrangements.
- (g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.
- (h) be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
- (i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
- (j) be competent to work in a variety of health care settings.
- (k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed in Table 11 Certifiable procedural skills – A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate, as given in the Graduate Medical Education Regulations, 2018

### **2.3. Goals for the Learner**

In order to fulfil this goal, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

- 2.3.1. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- 2.3.2. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.
- 2.3.3. Communicator with patients, families, colleagues and community.
- 2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.
- 2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

### **3. Competency Based Training Programme of the Indian Medical Graduate**

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

#### **3.1. *Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion***

- 3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- 3.1.2. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
- 3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

- 3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- 3.1.5. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.6. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- 3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- 3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- 3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- 3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- 3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
  - i) Disease prevention,
  - ii) Health promotion and cure,
  - iii) Pain and distress alleviation, and
  - iv) Rehabilitation and palliation.

- 3.1.13 Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.
- 3.1.14 Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.
- 3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

**3.2. *Leader and member of the health care team and system***

- 3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- 3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- 3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- 3.2.4 Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- 3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- 3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

**3.3. *Communicator with patients, families, colleagues and community***

- 3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- 3.3.2 Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- 3.3.3 Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making.

**3.4. Lifelong learner committed to continuous improvement of skills and knowledge**

3.4.1. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4. Demonstrate ability to search (including through electronic means), and critically reevaluate the medical literature and apply the information in the care of the patient.

3.4.5. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

**3.5. *Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession***

3.5.1. Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2. Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3. Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4. Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5. Demonstrate a commitment to the growth of the medical profession as a whole.

## Section 2

### Subject-wise outcomes

Section 2 contains subject-wise outcomes so called “sub-competencies” that must be achieved at the end of instruction in that subject. These are organised in tables and have two parts. The core subject outcomes are in first part. The second part in the same document (titled Integration) contains outcomes/competencies in other subjects which have been identified by experts in those subjects as requiring alignment or integration with the core subject.

Outcomes (competencies) in each subject are grouped according to topics number-wise. It is important to review the individual outcomes (competencies) in the light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified. The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’ indicates independent performance without supervision and is required rarely in the pre-internship period. The outcome is a core (Y - must achieve) or a non-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under the section “definitions used in this document”. The suggested number of times a skill must be performed independently for certification in the learner’s log book is also given. Last two columns indicate subjects within the same phase and other phases with which the topic can be taught - together - aligned (temporal coordination), shared, correlated or nested.

The number of topics and competencies in each subject are given below:

## **Topics & outcomes in Pre-clinical & Para-clinical subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                           | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|---|-------------------------|---------------------------|
| 1.             | <b>Human Anatomy</b>                      | 82                      | 409                       |
| 2.             | <b>Physiology</b>                         | 11                      | 137                       |
| 3.             | <b>Biochemistry</b>                       | 11                      | 89                        |
| 4.             | <b>Pharmacology</b>                       | 05                      | 85                        |
| 5.             | <b>Pathology</b>                          | 36                      | 182                       |
| 6.             | <b>Microbiology</b>                       | 08                      | 54                        |
| 7.             | <b>Forensic Medicine &amp; Toxicology</b> | 14                      | 162                       |
|                | <b>Total</b>                              | <b>167</b>              | <b>1118</b>               |



## **Topics & outcomes in Medicine and Allied subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                               | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|---|-------------------------|---------------------------|
| <b>1.</b>      | <b>Community Medicine</b>                     | 20                      | 107                       |
| <b>2.</b>      | <b>General Medicine</b>                       | 26                      | 506                       |
| <b>3.</b>      | <b>Respiratory Medicine</b>                   | 02                      | 47                        |
| <b>4.</b>      | <b>Pediatrics</b>                             | 35                      | 406                       |
| <b>5.</b>      | <b>Psychiatry</b>                             | 19                      | 117                       |
| <b>6.</b>      | <b>Dermatology, Venereology &amp; Leprosy</b> | 18                      | 73                        |
| <b>7.</b>      | <b>Physical Medicine &amp; Rehabilitation</b> | 09                      | 43                        |
|                | <b>Total</b>                                  | <b>129</b>              | <b>1299</b>               |

## **Topics & outcomes in Surgery and Allied subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                     | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|-------------------------------------|-------------------------|---------------------------|
| <b>1.</b>      | <b>General Surgery</b>              | 30                      | 133                       |
| <b>2.</b>      | <b>Ophthalmology</b>                | 09                      | 60                        |
| <b>3.</b>      | <b>Otorhinolaryngology</b>          | 04                      | 76                        |
| <b>4.</b>      | <b>Obstetrics &amp; Gynaecology</b> | 38                      | 126                       |
| <b>5.</b>      | <b>Orthopedics</b>                  | 14                      | 39                        |
| <b>6.</b>      | <b>Anesthesiology</b>               | 10                      | 46                        |
| <b>7.</b>      | <b>Radiodiagnosis</b>               | 01                      | 13                        |
| <b>8.</b>      | <b>Radiotherapy</b>                 | 05                      | 16                        |
| <b>9.</b>      | <b>Dentistry</b>                    | 05                      | 23                        |
|                | <b>Total</b>                        | <b>116</b>              | <b>532</b>                |

## **Section 3**

### **Sample topics used for alignment & integration**

Section 3 contains a sample selection of topics that run across the phases which can be used for alignment and integration. These are suggestions and institutions can select their own set of topics which can run across phases.

It is important to design the curriculum with a view to ensure with several broad outcomes in mind: a) achievement of the broad competencies by the learner at the end of the MBBS program, b) retain the subject - wise character of learning and assessment and ensure that phase-wise subject outcomes are met and assessed, c) teaching topics that are similar together thereby reducing redundancy and allowing the learner to integrate the concept as the most important step in integration (alignment or temporal coordination) (see document on integration), and d) align learning and assessment experiences to the outcome and the level of achievement specified.

## **Understanding the competencies table**

## Understanding the competencies table

| A  | B   | C      | D         | E    | F                                  | G                           | H                           | I                    | J                      |
|--|---|--------|-----------|------|------------------------------------|-----------------------------|-----------------------------|----------------------|------------------------|
| No.                                      | Competencies  | Domain | K/KH/SH/P | Core | Suggested Teaching Learning Method | Suggested Assessment method | No. required to certify (P) | Vertical Integration | Horizontal Integration |
| <b>Physiology</b>                        |   |        |           |      |                                    |                             |                             |                      |                        |
| <b>Summary</b>                           |   |        |           |      |                                    |                             |                             |                      |                        |
| Name of Topic: <b>General Physiology</b> |   |        |           |      |                                    |                             |                             |                      |                        |
| Number of Competencies: <b>(08)</b>      |   |        |           |      |                                    |                             |                             |                      |                        |
| PY1.1                                    | Describe the structure and functions of a                                     | K      | KH        | Y    | Lectures, Small group discussion   | Written/Viva                |                             |                      | Biochemistry           |
| IM15.4                                   | Elicit <i>document</i> and present a medical history that helps delineate the | S      | SH        | Y    | Bed Side clinic, DOAP              | Skill assessment            |                             | Community Medicine   |                        |

Description of competency

Unique number of the competency. First two alphabets represent the subject (see list); number following alphabet reflects topic number, following period is a running number.

Identifies the domain or domains addressed  
 K - Knowledge  
 S - Skill  
 A - Attitude  
 C - Communication

Identifies the level of competency required based on the Miller's pyramid  
 K - Knows  
 KH - Knows How  
 S - Skill  
 SH - Show How  
 P - Perform independently

Identifies if the competency is core or desirable.  
 Y indicates Core;  
 N-non-core

Identifies the suggested learning method.  
 DOAP - Demonstrate (by Student) Observe, Assist Perform)

Identifies the suggested assessment method  
 Skill assessment - Clinics, Skills lab, Practicals etc.

no of times a skill needs to be done independently to be certified for independent performance;  
 Rarely used in UG

Subject (s) in other phases with which the competency can be vertically integrated to increase relevance or improve basic understanding

Subject (s) in the same phase with which the competency can be horizontally integrated or aligned to allow a more wholesome understanding

**\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

## **Deriving learning objectives from competencies**

## Deriving learning objectives from competencies

|    |   |  |
|----|---|--|
| K  | Knows   | A knowledge attribute – Usually enumerates or describes  |
| KH | Knows how                                     | A higher level of knowledge – is able to discuss or analyse  |
| S  | Shows   | A skill attribute: is able to identify or demonstrate the steps  |
| SH | Shows how                                     | A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour   |
| P  | Performs (under supervision or independently) | Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results |

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

|         |  |
|---------|--|
| PA42.1* | At the end of the session the <b>phase II student</b> must be able to enumerate the most common causes of meningitis correctly                                 |
| PA42.2* | At the end of the session the <b>phase II student</b> must be able to enumerate the components of CSF analysis correctly                                       |
| PA42.3* | At the end of the session the <b>phase II student</b> must be able to <b>describe</b> the CSF features for a given etiology of meningitis <b>accurately</b>    |
| PA42.4* | At the end of the session the <b>phase II student</b> must be able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> |

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

**\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

## **Deriving learning methods from competencies**



## Deriving learning methods from competencies

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|         |   |  |
|---------|---|--|
| PA42.1* | At the end of the session the <b>Phase II student</b> must be able to enumerate the most common causes of meningitis <b>correctly</b>                           | Lecture → small group discussion                             |
| PA42.2* | At the end of the session the <b>Phase II student</b> must be able to enumerate the components of a CSF analysis <b>correctly</b>                               | Related objectives can be combined into one teaching session |
| PA42.3* | At the end of the session the <b>Phase II student</b> must be able to <b>describe</b> the CSF features for a given etiologic of meningitis <b>accurately</b>    |  |
| PA42.4* | At the end of the session the <b>Phase II student</b> must the able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> | small group discussion, practical session                    |

\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

## **Deriving assessment methods from competencies**

## Deriving assessment methods from competencies-1

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|         |  |   |
|---------|--|---|
| PA42.1* | At the end of the session the <del>Phase I</del> <b>Phase II student</b> must be able to enumerate the most common causes of meningitis correctly              | Short note or part of structured essay: Enumerate 5 causes of meningitis based on their prevalence in India   |
| PA42.2* | At the end of the session the <b>Phase II student</b> must be able to enumerate the components of a CSF analysis correctly                                     | Short note or part of structured essay: Enumerate the components tested in a CSF analysis   |
| PA42.3* | At the end of the session the <b>Phase II student</b> must be able to <b>describe</b> the CSF features for a given aetiology of meningitis <b>accurately</b>   | Short note or part of structured essay:<br>Describe the CSF findings that are characteristic of tuberculous meningitis  |
| PA42.4* | At the end of the session the <b>Phase II student</b> must be able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> | Short note / part of the structured essay/ Skill station/ Viva voce<br>Review the CSF findings in the following patient and identify (write or vocalise) the most likely etiology |

\* Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document

## Deriving assessment methods from competencies-2

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|        |  |   |    |   |                                    |                       |          |           |
|--------|--|---|----|---|------------------------------------|-----------------------|----------|-----------|
| MI2.4* | List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia. | K | KH | Y | Didactic<br>Small group discussion | Written/<br>Viva voce | Medicine | Pathology |
|--------|--|---|----|---|------------------------------------|-----------------------|----------|-----------|

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|        |  |
|--------|--|
| MI2.1* | Enumerate the common microbial agents causing anaemia                                  |
| MI2.2* | Describe the morphology of agent (1,2 etc)   |
| MI2.3* | Describe the mode of infection of agent in humans                                      |
| MI2.4* | Discuss the pathogenesis of anemia caused by agent                                     |
| MI2.5* | Describe the clinical course of infection by agent                                     |
| MI2.6* | Enumerate the diagnostic tests to identify the aetiology of agent as a cause of anemia |
| MI2.7* | Discuss the methods to prevent infection by agent                                      |
| MI2.8* | Describe the treatment of infection by agent   |

Integrate concept - not necessarily teachers  
Plan session with teachers of both subjects -teachers from both subjects usually not needed. Ensure redundancy and duplication by reviewing both subjects



Horizontally aligned and integrated with pathology

Vertically integrated with General Medicine



Integrate concept - not necessarily teachers Plan session with teachers from both phases. Make a decision on how much of the information needs to be brought down to this phase to make it relevant. Consider how a competency can ascend over phases: for eg. - can be at a KH -( know how) in phase II but becomes SH in phase III. For vertical integration with clinical subjects, use of a case to link the concept (a well written paper, case is sufficient). Using teachers from both phases is rarely required

# The concept of integration

## Concept of integration used in the Manual

*Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application.* The GMR 2018 applies these principles to the extent that will retain the strengths of silo - based education and assessment while providing experiences that will allow learners to integrate concepts.

Keeping this in mind, the Regulations recommend temporal coordination as described by Harden (called alignment in this document) as the major method to be followed allowing similar topics in different subjects to be thought separately but during the same time frame (Figure 1a ).

In a small proportion - not to exceed 20% of the total curriculum an attempt can be made to Share (Figure 1b) topics or Correlate (Figure 1c) topics by using an integration session. The integration session most preferred will be a case based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed. Care must be taken to ensure that achievement phase - based objectives are given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary.

As much as possible the necessary correlates from other phases must also be introduced while discussing a topic in a given subject - Nesting (Figure 1d) (Harden). Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year.

Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the learner has internalized and integrated the concept and its application.

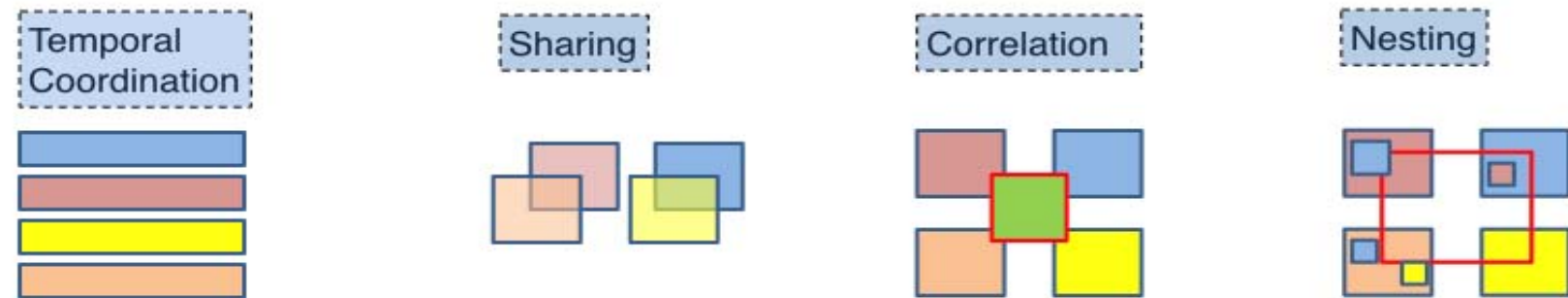


Figure 1 : Integration concepts framed in the GMR. Coloured boxes represent subjects. 1 a. Temporal coordination: The timetable is adjusted so that topics within the subjects or disciplines which are related, are scheduled at the same time. b. Sharing: Two disciplines may agree to plan and jointly implement a teaching program c. Correlation: the emphasis remains on disciplines or subjects with subject-based courses taking up most of the curriculum time. Within this framework, an integrated teaching session or course is introduced in addition to the subject-based teaching (green box with red border) d. Nesting: the teacher targets, within a subject-based course, skills relating to other subjects. Adapted from Harden R Med Edu 2000. 34; 551

## Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve.

In other words: Where do you want to go? or What do you want to become?

2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.

In other words: What should you have? or What should have changed?

3. **Objective:** Statement of what a learner should be able to do at the end of a specific learning experience.

In other words: What the Indian Medical Graduate should know, do, or behave.

### Action Verbs used in this manual

| Knowledge     | Skill                     | Attitude/communicate         |
|---------------|---------------------------|------------------------------|
| Enumerate     | Identify                  | Counsel                      |
| List          | Demonstrate               | Inform                       |
| Describe      | Perform under supervision | Demonstrate understanding of |
| Discuss       | Perform independently     |                              |
| Differentiate | Document                  |                              |
| Define        | Present                   |                              |
| Classify      | Record                    |                              |
| Choose        | Interpret                 |                              |
| Elicit        |                           |                              |
| Report        |                           |                              |

**Note:**

1. Specified essential competencies only will be required to be performed independently at the end of the final year MBBS.
2. The word 'perform' or 'do' is used ONLY if the task has to be done on patients or in laboratory practical in the pre/para- clinical phases.
3. Most tasks that require performance during undergraduate years will be performed under supervision.
4. If a certification to perform independently has been done, then the number of times the task has to be performed under supervision will be indicated in the last column.

## Explanation of terms used in this manual

|  |   |
|--|---|
| Lecture  | Any instructional large group method including traditional lecture and interactive lecture  |
| Small group discussion                                       | Any instructional method involving small groups of students in an appropriate learning context  |
| DOAP (Demonstration- Observation - Assistance - Performance) | A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently                              |
| Skill assessment   | A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands |
| Core   | A competency that is necessary in order to complete the requirements of the subject (traditional must know)   |
| Non-Core   | A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know)   |
| National Guidelines  | Health programs as relevant to the competency that are part of the National Health Program  |



### Domains of learning

|   |               |
|---|---------------|
| K | Knowledge     |
| S | Skill         |
| A | Attitude      |
| C | Communication |

### Levels of competency

|    |   |  |
|----|---|--|
| K  | Knows   | A knowledge attribute - Usually enumerates or describes  |
| KH | Knows how                                     | A higher level of knowledge - is able to discuss or analyze  |
| S  | Shows   | A skill attribute: is able to identify or demonstrate the steps  |
| SH | Shows how                                     | A skill attribute: is able to interpret/ demonstrate a complex procedure requiring thought, knowledge and behavior   |
| P  | Performs (under supervision or independently) | Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results |

**Note:**

In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able to SH - Show how - an informed consent is obtained - it is presumed that the preceding steps - the knowledge, the analytical skills, the skill of communicating have all been obtained.

It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified.

# **Volume I**

## **Competency based Undergraduate Curriculum in Pre-clinical and Para-clinical subjects**

# **HUMAN ANATOMY (CODE: AN)**

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                         | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|---|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| <b>Human Anatomy</b>                                 |   |                                    |                        |               |  |                                      |                                       |                         |                           |
| <b>Topic: Anatomical terminology</b>                 |   | <b>Number of competencies: (2)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                                      |                                       |                         |                           |
| AN1.1  | Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movement in our body | K/S                                | SH                     | Y             | Lecture, DOAP session                                | Written/ Viva voce/skills assessment |                                       |                         |                           |
| AN1.2  | Describe composition of bone and bone marrow  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| <b>Topic: General features of bones &amp; Joints</b> |   | <b>Number of competencies: (6)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                                      |                                       |                         |                           |
| AN2.1  | Describe parts, blood and nerve supply of a long bone   | K                                  | KH                     | Y             | Lecture, DOAP session                                | Written/ Viva voce                   |                                       |                         |                           |
| AN2.2  | Enumerate laws of ossification  | K                                  | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN2.3  | Enumerate special features of a sesamoid bone   | K                                  | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN2.4  | Describe various types of cartilage with its structure & distribution in body                                   | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| AN2.5  | Describe various joints with subtypes and examples  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| AN2.6  | Explain the concept of nerve supply of joints & Hilton's law  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| <b>Topic: General features of Muscle</b>             |   | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                                      |                                       |                         |                           |
| AN3.1  | Classify muscle tissue according to structure & action  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         | Physiology                |
| AN3.2  | Enumerate parts of skeletal muscle and differentiate between tendons and aponeuroses with examples              | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN3.3  | Explain Shunt and spurt muscles   | K                                  | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| <b>Topic: General features of skin and fascia</b>    |   | <b>Number of competencies: (5)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                                      |                                       |                         |                           |
| AN4.1  | Describe different types of skin & dermatomes in body   | K                                  | KH                     | N             | Lecture, DOAP session                                | Written                              |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                         | Assessment<br>Methods | Number<br>required<br>to certify<br>P | Vertical<br>Integration                  | Horizontal<br>Integration |
|---|--|------------------------------------|------------------------|---------------|--|-----------------------|---------------------------------------|--|---------------------------|
| AN4.2   | Describe structure & function of skin with its appendages  | K                                  | KH                     | Y             | Lecture, DOAP session                                | Written/ Viva voce    |                                       | Dermatology,<br>Venereology &<br>Leprosy |                           |
| AN4.3   | Describe superficial fascia along with fat distribution in body                                  | K                                  | KH                     | Y             | Lecture, DOAP session                                | Written/ Viva voce    |                                       |  |                           |
| AN4.4   | Describe modifications of deep fascia with its functions   | K                                  | KH                     | Y             | Lecture, DOAP session                                | Written/ Viva voce    |                                       | Dermatology,<br>Venereology &<br>Leprosy |                           |
| AN4.5   | Explain principles of skin incisions   | K                                  | KH                     | N             | Lecture  | Written               |                                       | Dermatology,<br>Venereology &<br>Leprosy |                           |
| <b>Topic: General features of the cardiovascular system</b> |  | <b>Number of competencies: (8)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                       |                                       |  |                           |
| AN5.1   | Differentiate between blood vascular and lymphatic system  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce    |                                       |  | Physiology                |
| AN5.2   | Differentiate between pulmonary and systemic circulation   | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce    |                                       |  | Physiology                |
| AN5.3   | List general differences between arteries & veins  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce    |                                       |  |                           |
| AN5.4   | Explain functional difference between elastic, muscular arteries and arterioles                  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce    |                                       |  |                           |
| AN5.5   | Describe portal system giving examples   | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce    |                                       |  |                           |
| AN5.6   | Describe the concept of anastomoses and collateral circulation with significance of end-arteries | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce    |                                       | General<br>Medicine                      | Physiology                |
| AN5.7   | Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses         | K                                  | KH                     | N             | Lecture  | Written               |                                       |  | Physiology                |
| AN5.8   | Define thrombosis, infarction & aneurysm   | K                                  | KH                     | N             | Lecture  | Written               |                                       | Pathology                                | Physiology                |
| <b>Topic: General Features of lymphatic system</b>          |  | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                       |                                       |  |                           |
| AN6.1   | List the components and functions of the lymphatic system  | K                                  | KH                     | N             | Lecture  | Written               |                                       |  |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                         | Assessment<br>Methods          | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN6.2   | Describe structure of lymph capillaries & mechanism of lymph circulation                                   | K                                  | KH                     | N             | Lecture  | Written                        |                                       |                         |                           |
| AN6.3   | Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system                   | K                                  | KH                     | N             | Lecture  | Written                        |                                       | General Surgery         |                           |
| <b>Topic: Introduction to the nervous system</b>        |  | <b>Number of competencies: (8)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                                |                                       |                         |                           |
| AN7.1   | Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems | K                                  | KH                     | Y             | Lecture  | Written                        |                                       |                         |                           |
| AN7.2   | List components of nervous tissue and their functions  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       |                         | Physiology                |
| AN7.3   | Describe parts of a neuron and classify them based on number of neurites, size & function                  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       |                         | Physiology                |
| AN7.4   | Describe structure of a typical spinal nerve   | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       |                         |                           |
| AN7.5   | Describe principles of sensory and motor innervation of muscles  | K                                  | KH                     | N             | Lecture  | Written                        |                                       | General Medicine        | Physiology                |
| AN7.6   | Describe concept of loss of innervation of a muscle with its applied anatomy                               | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       | General Medicine        |                           |
| AN7.7   | Describe various type of synapse   | K                                  | KH                     | N             | Lecture  | Written                        |                                       |                         | Physiology                |
| AN7.8   | Describe differences between sympathetic and spinal ganglia  | K                                  | KH                     | N             | Lecture  | Written                        |                                       |                         |                           |
| <b>Topic: Features of individual bones (Upper Limb)</b> |  | <b>Number of competencies: (6)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                                |                                       |                         |                           |
| AN8.1   | Identify the given bone, its side, important features & keep it in anatomical position                     | K/S                                | SH                     | Y             | DOAP session   | Viva voce/ Practicals/<br>OSPE |                                       |                         |                           |
| AN8.2   | Identify & describe joints formed by the given bone  | K/S                                | SH                     | Y             | Lecture, DOAP session                                | Viva voce                      |                                       |                         |                           |
| AN8.3   | Enumerate peculiarities of clavicle  | K                                  | KH                     | Y             | Lecture, DOAP session                                | Viva voce                      |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                                      | Assessment<br>Methods                   | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|---|---|---------------------------------------|-------------------------|---------------------------|
| AN8.4  | Demonstrate important muscle attachment on the given bone   | K/S                                 | SH                     | Y             | Practical DOAP session,<br>Small group teaching                   | Viva voce<br>Practicals                 |                                       | Orthopedics             |                           |
| AN8.5  | Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform             | K/S                                 | SH                     | Y             | Practical, F91 DOAP<br>session, Small group<br>teaching           | Viva voce<br>Practicals                 |                                       |                         |                           |
| AN8.6  | Describe scaphoid fracture and explain the anatomical basis of avascular necrosis   | K                                   | KH                     | N             | DOAP session  | Viva voce                               |                                       | Orthopedics             |                           |
| <b>Topic: Pectoral region</b>                      |   | <b>Number of competencies: (3)</b>  |                        |               | <b>Number of procedures for certification: (NIL)</b>              |   |                                       |                         |                           |
| AN9.1  | Describe attachment, nerve supply & action of pectoralis major and pectoralis minor   | K                                   | KH                     | Y             | Lecture, Practical  | Written                                 |                                       |                         |                           |
| AN9.2  | Breast: Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast | K                                   | KH                     | Y             | Practical, Lecture  | Written/ Viva voce                      |                                       | General Surgery         |                           |
| AN9.3  | Describe development of breast  | K                                   | KH                     | N             | Lecture   | Written                                 |                                       |                         |                           |
| <b>Topic: Axilla, Shoulder and Scapular region</b> |   | <b>Number of competencies: (13)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>              |   |                                       |                         |                           |
| AN10.1   | Identify & describe boundaries and contents of axilla   | K/S                                 | SH                     | Y             | Practical,<br>Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN10.2   | Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of vein                       | K/S                                 | SH                     | Y             | Practical,<br>Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN10.3   | Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus | K/S                                 | SH                     | Y             | Practical,<br>Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN10.4  | Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage   | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN10.5  | Explain variations in formation of brachial plexus   | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN10.6  | Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN10.7  | Explain anatomical basis of enlarged axillary lymph nodes  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN10.8  | Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN10.9  | Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation  | K                 | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN10.10 | Describe and identify the deltoid and rotator cuff muscles   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN10.11 | Describe & demonstrate attachment of serratus anterior with its action   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN10.12 | Describe and demonstrate shoulder joint for- type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Orthopedics             |                           |
| AN10.13 | Explain anatomical basis of Injury to axillary nerve during intramuscular injections   | K                 | KH                     | N             | Lecture  | Viva voce                            |                                       |                         |                           |

**Topic: Arm & Cubital fossa**

**Number of competencies: (6)**

**Number of procedures for certification: (NIL)**



| Number                           | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|----------------------------------|--|-------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN11.1                           | Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii                                  | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN11.2                           | Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm     | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN11.3                           | Describe the anatomical basis of Venepuncture of cubital veins   | K                                   | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN11.4                           | Describe the anatomical basis of Saturday night paralysis  | K                                   | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| AN11.5                           | Identify & describe boundaries and contents of cubital fossa   | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN11.6                           | Describe the anastomosis around the elbow joint  | K                                   | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| <b>Topic: Forearm &amp; hand</b> |  | <b>Number of competencies: (15)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN12.1                           | Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions                   | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN12.2                           | Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN12.3                           | Identify & describe flexor retinaculum with its attachments  | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                                      | Assessment<br>Methods                   | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---|---|---------------------------------------|-------------------------|---------------------------|
| AN12.4  | Explain anatomical basis of carpal tunnel syndrome   | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       |                         |                           |
| AN12.5  | Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved   | K/S               | SH                     | Y             | Practical,<br>Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN12.6  | Describe & demonstrate movements of thumb and muscles involved   | K/S               | SH                     | Y             | Practical,<br>Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN12.7  | Identify & describe course and branches of important blood vessels and nerves in hand  | K/S               | SH                     | Y             | Practical,<br>Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN12.8  | Describe anatomical basis of Claw hand   | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Surgery         |                           |
| AN12.9  | Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths                                       | K/S               | SH                     | Y             | Practical,<br>Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN12.10 | Explain infection of fascial spaces of palm  | K                 | KH                     | N             | Lecture   | Written                                 |                                       | General Surgery         |                           |
| AN12.11 | Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions                  | K/S               | SH                     | Y             | Practical, Lecture, Small<br>group discussion, DOAP<br>session    | Written/ Viva voce/<br>skill assessment |                                       | General Surgery         |                           |
| AN12.12 | Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm | K/S               | SH                     | Y             | Practical, Lecture, Small<br>group discussion, DOAP<br>session    | Written/ Viva voce/<br>skill assessment |                                       | General Surgery         |                           |
| AN12.13 | Describe the anatomical basis of Wrist drop  | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Surgery         |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN12.14   | Identify & describe compartments deep to extensor retinaculum  | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN12.15   | Identify & describe extensor expansion formation   | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| <b>Topic: General Features, Joints, radiographs &amp; surface marking</b> |  | <b>Number of competencies: (8)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN13.1  | Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage   | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN13.2  | Describe dermatomes of upper limb  | K                                  | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN13.3  | Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint              | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN13.4  | Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint   | K                                  | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN13.5  | Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand  | K/S                                | SH                     | Y             | Practical, Small group discussion, DOAP session          | Viva voce/ skill assessment          |                                       | Radiodiagnosis          |                           |
| AN13.6  | Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end, Inferior angle of the scapula  | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ skill assessment          |                                       |                         |                           |
| AN13.7  | Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ skill assessment          |                                       |                         |                           |



| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN15.5   | Describe and demonstrate adductor canal with its content   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| <b>Topic: Gluteal region &amp; back of thigh</b> <span style="float: right;">Number of competencies: (6)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN16.1   | Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of gluteal region   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN16.2   | Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections  | K                 | KH                     | Y             | Lecture, DOAP session                                    | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN16.3   | Explain the anatomical basis of Trendelenburg sign   | K                 | KH                     | Y             | Lecture, DOAP session                                    | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN16.4   | Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN16.5   | Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN16.6   | Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| <b>Topic: Hip Joint</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>                          |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN17.1   | Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN17.2  | Describe anatomical basis of complications of fracture neck of femur  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| AN17.3  | Describe dislocation of hip joint and surgical hip replacement  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| <b>Topic: Knee joint, Anterolateral compartment of leg &amp; dorsum of foot</b> <span style="margin-left: 150px;"><b>Number of competencies: (7) ♂</b></span> <span style="margin-left: 150px;"><b>Number of procedures for certification: (NIL)</b></span> |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN18.1  | Describe and demonstrate major muscles of anterolateral compartment of leg with their attachment, nerve supply and actions  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN18.2  | Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg                                     | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN18.3  | Explain the anatomical basis of foot drop   | K                 | KH                     | Y             | Lecture, DOAP session                                    | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN18.4  | Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the knee joint | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN18.5  | Explain the anatomical basis of locking and unlocking of the knee joint   | K                 | KH                     | Y             | Small group teaching                                     | Written/ Viva voce                   |                                       |                         |                           |
| AN18.6  | Describe knee joint injuries with its applied anatomy   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| AN18.7  | Explain anatomical basis of Osteoarthritis  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| <b>Topic: Back of Leg &amp; Sole</b> <span style="margin-left: 150px;"><b>Number of competencies: (7)</b></span> <span style="margin-left: 150px;"><b>Number of procedures for certification: (NIL)</b></span>  |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN19.1  | Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN19.2   | Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN19.3   | Explain the concept of "Peripheral heart"   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN19.4   | Explain the anatomical basis of rupture of calcaneal tendon   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| AN19.5   | Describe factors maintaining importance arches of the foot with its importance  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN19.6   | Explain the anatomical basis of Flat foot & Club foot   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| AN19.7   | Explain the anatomical basis of Metatarsalgia & Plantar fasciitis   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Orthopedics             |                           |
| <b>Topic: General Features, Joints, radiographs &amp; surface marking</b> <span style="margin-left: 150px;"><b>Number of competencies: (10)</b></span> <span style="margin-left: 150px;"><b>Number of procedures for certification: (NIL)</b></span> |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN20.1   | Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN20.2   | Describe the subtalar and transverse tarsal joints  | K                 | KH                     | N             | Lecture, DOAP session                                    | Written/ Viva voce                   |                                       |                         |                           |
| AN20.3   | Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN20.4   | Explain anatomical basis of enlarged inguinal lymph nodes   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN20.5   | Explain anatomical basis of varicose veins and deep vein thrombosis   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN20.6   | Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb   | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session            | Viva voce/ skill assessment          |                                       | Radiodiagnosis          |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods       | Number<br>required<br>to certify<br>P | Vertical<br>Integration           | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|--|-----------------------------|---------------------------------------|-----------------------------------|---------------------------|
| AN20.7  | Identify & demonstrate important bony landmarks of lower limb: -Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ skill assessment |                                       |                                   |                           |
| AN20.8  | Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ skill assessment |                                       | General Medicine                  |                           |
| AN20.9  | Identify & demonstrate Palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ skill assessment |                                       | General Medicine, General Surgery |                           |
| AN20.10 | Describe basic concept of development of lower limb  | K                 | KH                     | N             | Lecture  | Viva voce                   |                                       |                                   |                           |

**Topic: Thoracic cage**

**Number of competencies: (11)**

**Number of procedures for certification: (NIL)**

|        |  |     |    |   |  |                                      |  |  |  |
|--------|--|-----|----|---|--|--------------------------------------|--|--|--|
| AN21.1 | Identify and describe the salient features of sternum, typical rib, 1 <sup>st</sup> rib and typical thoracic vertebra  | K/S | SH | Y | Lecture, DOAP session                                    | Viva voce/ skill assessment          |  |  |  |
| AN21.2 | Identify & describe the features of 2 <sup>nd</sup> , 11 <sup>th</sup> and 12 <sup>th</sup> ribs, 1 <sup>st</sup> , 11 <sup>th</sup> and 12 <sup>th</sup> thoracic vertebrae | K/S | SH | N | Lecture, DOAP session                                    | Viva voce/ skill assessment          |  |  |  |
| AN21.3 | Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet   | K/S | SH | Y | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |  |  |  |
| AN21.4 | Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles   | K/S | SH | Y | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |  |  |  |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN21.5  | Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN21.6  | Mention origin, course and branches/ tributaries of:<br>1) anterior & posterior intercostal vessels<br>2) internal thoracic vessels        | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN21.7  | Mention the origin, course, relations and branches of<br>1) atypical intercostal nerve<br>2) superior intercostal artery, subcostal artery | K                 | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN21.8  | Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints    | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN21.9  | Describe & demonstrate mechanics and types of respiration  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         | Physiology                |
| AN21.10   | Describe costochondral and interchondral joints  | K                 | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN21.11   | Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum  | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       |                         |                           |
| <b>Topic: Heart &amp; Pericardium</b> <span style="float: right;">Number of competencies: (7)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN22.1  | Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium                                  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN22.2  | Describe & demonstrate external and internal features of each chamber of heart   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         | Physiology                |
| AN22.3  | Describe & demonstrate origin, course and branches of coronary arteries  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         | Physiology                |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN22.4  | Describe anatomical basis of ischaemic heart disease  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General<br>Medicine     | Physiology                |
| AN22.5  | Describe & demonstrate the formation, course, tributaries and termination of coronary sinus   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN22.6  | Describe the fibrous skeleton of heart  | K                 | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| AN22.7  | Mention the parts, position and arterial supply of the conducting system of heart   | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General<br>Medicine     | Physiology                |
| <b>Topic: Mediastinum</b> <span style="margin-left: 200px;"><b>Number of competencies: (7)</b></span> <span style="margin-left: 200px;"><b>Number of procedures for certification: (NIL)</b></span> |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN23.1  | Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus           | K/S               | SH                     | Y             | Practical, Lecture, DOAP session                         | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN23.2  | Describe & demonstrate the extent, relations tributaries of thoracic duct and enumerate its applied anatomy   | K/S               | SH                     | Y             | Practical, Lecture, DOAP session                         | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN23.3  | Describe & demonstrate origin, course, relations, tributaries and termination of superior venacava, azygos, hemiazygos and accessory hemiazygos veins | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN23.4  | Mention the extent, branches and relations of arch of aorta & descending thoracic aorta   | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN23.5  | Identify & Mention the location and extent of thoracic sympathetic chain  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN23.6  | Describe the splanchnic nerves  | K                 | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN23.7  | Mention the extent, relations and applied anatomy of lymphatic duct   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Surgery         |                           |

| Number                             | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N)  | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration            | Horizontal<br>Integration |
|------------------------------------|---|-------------------|------------------------|--|--|--------------------------------------|---------------------------------------|------------------------------------|---------------------------|
| <b>Topic: Lungs &amp; Trachea</b>  |   |                   |                        |  |  |                                      |                                       |                                    |                           |
| <b>Number of competencies: (6)</b> |   |                   |                        | <b>Number of procedures for certification: (NIL)</b> |  |                                      |                                       |                                    |                           |
| AN24.1                             | Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy | K                 | KH                     | Y  | Practical, Lecture                                       | Written/ Viva voce                   |                                       | General<br>Medicine                | Physiology                |
| AN24.2                             | Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate                    | K/S               | SH                     | Y  | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General<br>Medicine                | Physiology                |
| AN24.3                             | Describe a bronchopulmonary segment   | K                 | KH                     | Y  | Lecture  | Written/ Viva voce                   |                                       | General<br>Medicine                | Physiology                |
| AN24.4                             | Identify phrenic nerve & describe its formation & distribution  | K/S               | SH                     | Y  | Lecture, Practical                                       | Written/ Viva voce                   |                                       |                                    |                           |
| AN24.5                             | Mention the blood supply, lymphatic drainage and nerve supply of lungs  | K                 | KH                     | Y  | Lecture  | Written/ Viva voce                   |                                       |                                    |                           |
| AN24.6                             | Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea  | K                 | KH                     | N  | Lecture  | Written                              |                                       |                                    |                           |
| <b>Topic: Thorax</b>               |   |                   |                        |  |  |                                      |                                       |                                    |                           |
| <b>Number of competencies: (9)</b> |   |                   |                        | <b>Number of procedures for certification: (01)</b>  |  |                                      |                                       |                                    |                           |
| AN25.1                             | Identify, draw and label a slide of trachea and lung  | K/S               | SH                     | Y  | Lecture, Practical                                       | Written/ skill assessment            | 1                                     |                                    |                           |
| AN25.2                             | Describe development of pleura, lung & heart  | K                 | KH                     | Y  | Lecture  | Written                              |                                       |                                    |                           |
| AN25.3                             | Describe fetal circulation and changes occurring at birth   | K                 | KH                     | Y  | Lecture  | Written                              |                                       | General<br>Medicine                | Physiology                |
| AN25.4                             | Describe embryological basis of:<br>1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula     | K                 | KH                     | Y  | Lecture  | Written/ Viva voce                   |                                       | General<br>Medicine,<br>Pediatrics | Physiology                |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods | Assessment<br>Methods          | Number<br>required<br>to certify<br>P | Vertical<br>Integration                | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| AN25.5  | Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta            | K                 | KH                     | Y             | Lecture                      | Written/ Viva voce             |                                       | General<br>Medicine,<br>Pediatrics     | Physiology                |
| AN25.6  | Mention development of aortic arch arteries, SVC, IVC and coronary sinus   | K                 | KH                     | N             | Lecture                      | Written/ Viva voce             |                                       |  |                           |
| AN25.7  | Identify structures seen on a plain x-ray chest (PA view)  | K/S               | SH                     | Y             | Practical, DOAP session      | Written/ Viva voce             |                                       | Radiodiagnosis,<br>General<br>Medicine |                           |
| AN25.8  | Identify and describe in brief a barium swallow  | K/S               | SH                     | N             | Practical, DOAP session      | Written/ Viva voce             |                                       | Radiodiagnosis,<br>General<br>Medicine |                           |
| AN25.9  | Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart | K/S               | SH                     | Y             | Practical                    | Viva voce/ skill<br>assessment |                                       | General<br>Medicine,<br>Pediatrics     | Physiology                |
| <b>Topic: Skull osteology</b> <span style="margin-left: 200px;"><b>Number of competencies: (7)</b></span> <span style="margin-left: 200px;"><b>Number of procedures for certification: (NIL)</b></span> |  |                   |                        |               |                              |                                |                                       |  |                           |
| AN26.1  | Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull  | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill<br>assessment |                                       |  |                           |
| AN26.2  | Describe the features of norma frontalis, verticalis, occipitalis, lateralis and basalis   | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill<br>assessment |                                       |  |                           |
| AN26.3  | Describe cranial cavity, its subdivisions, foramina and structures passing through them  | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill<br>assessment |                                       |  |                           |
| AN26.4  | Describe morphological features of mandible  | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill<br>assessment |                                       |  |                           |
| AN26.5  | Describe features of typical and atypical cervical vertebrae (atlas and axis)  | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill<br>assessment |                                       |  |                           |
| AN26.6  | Explain the concept of bones that ossify in membrane   | K                 | KH                     | N             | Lecture                      | Viva voce                      |                                       |  |                           |

| Number                                  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN26.7                                  | Describe the features of the 7 <sup>th</sup> cervical vertebra  | K/S                                 | SH                     | N             | DOAP session   | Viva voce                            |                                       |                         |                           |
| <b>Topic: Scalp</b>                     |   | <b>Number of competencies: (2)</b>  |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN27.1                                  | Describe the layers of scalp, its blood supply, its nerve supply and surgical importance                            | K                                   | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN27.2                                  | Describe emissary veins with its role in spread of infection from extracranial route to intracranial venous sinuses | K                                   | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| <b>Topic: Face &amp; parotid region</b> |   | <b>Number of competencies: (10)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN28.1                                  | Describe & demonstrate muscles of facial expression and their nerve supply  | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN28.2                                  | Describe sensory innervation of face  | K                                   | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN28.3                                  | Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels                           | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN28.4                                  | Describe & demonstrate branches of facial nerve with distribution   | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN28.5                                  | Describe cervical lymph nodes and lymphatic drainage of head, face and neck   | K                                   | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN28.6                                  | Identify superficial muscles of face, their nerve supply and actions  | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN28.7                                  | Explain the anatomical basis of facial nerve palsy  | K                                   | KH                     | Y             | Lecture  | Written                              |                                       | General Medicine        |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN28.8   | Explain surgical importance of deep facial vein  | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN28.9   | Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN28.10  | Explain the anatomical basis of Frey's syndrome  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| <b>Topic: Posterior triangle of neck</b> <span style="float: right;">Number of competencies: (4)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN29.1   | Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN29.2   | Explain anatomical basis of Erb's & Klumpke's palsy  | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN29.3   | Explain anatomical basis of wry neck   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN29.4   | Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2)scalenus anterior, 3) scalenus medius & 4) levator scapulae                         | K/S               | SH                     | N             | Lecture, Practical                                       | Written/ Viva voce                   |                                       |                         |                           |
| <b>Topic: Cranial cavity</b> <span style="float: right;">Number of competencies: (5)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>             |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN30.1   | Describe the cranial fossae & identify related structures  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN30.2   | Describe & identify major foramina with structures passing through them  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN30.3   | Describe & identify dural folds & dural venous sinuses   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN30.4   | Describe clinical importance of dural venous sinuses   | K                 | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| AN30.5   | Explain effect of pituitary tumours on visual pathway  | K                 | KH                     | N             | Lecture  | Written                              |                                       | Ophthalmology           |                           |
| <b>Topic: Orbit</b> <span style="float: right;">Number of competencies: (5)      Number of procedures for certification: (NIL)</span>                              |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN31.1   | Describe & identify extra ocular muscles of eyeball  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN31.2   | Describe & demonstrate nerves and vessels in the orbit   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN31.3   | Describe anatomical basis of Horner's syndrome   | K                 | KH                     | N             | Lecture  | Written                              |                                       | Ophthalmology           |                           |
| AN31.4   | Enumerate components of lacrimal apparatus   | K                 | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| AN31.5   | Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus | K                 | KH                     | Y             | Lecture  | Written                              |                                       | Ophthalmology           |                           |
| <b>Topic: Anterior Triangle</b> <span style="float: right;">Number of competencies: (2)      Number of procedures for certification: (NIL)</span>                  |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN32.1   | Describe boundaries and subdivisions of anterior triangle  | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN32.2   | Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| <b>Topic: Temporal and Infratemporal regions</b> <span style="float: right;">Number of competencies: (5)      Number of procedures for certification: (NIL)</span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN33.1   | Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae            | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN33.2   | Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication                | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN33.3   | Describe & demonstrate articulating surface, type & movements of temporomandibular joint                                   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN33.4   | Explain the clinical significance of pterygoid venous plexus   | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN33.5   | Describe the features of dislocation of temporomandibular joint  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| <b>Topic: Submandibular region</b> <span style="float: right;">Number of competencies: (2)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>         |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN34.1   | Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN34.2   | Describe the basis of formation of submandibular stones  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| <b>Topic: Deep structures in the neck</b> <span style="float: right;">Number of competencies: (10)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN35.1   | Describe the parts, extent, attachments, modifications of deep cervical fascia   | K                 | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| AN35.2   | Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland                       | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN35.3   | Demonstrate & describe the origin, parts, course & branches subclavian artery  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN35.4   | Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |



| Number                                    | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN35.5                                    | Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes                                      | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN35.6                                    | Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain                        | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN35.7                                    | Describe the course and branches of IX, X, XI & XII nerve in the neck  | K                                  | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| AN35.8                                    | Describe the anatomically relevant clinical features of Thyroid swellings  | K                                  | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN35.9                                    | Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib    | K                                  | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN35.10                                   | Describe the fascial spaces of neck  | K                                  | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| <b>Topic: Mouth, Pharynx &amp; Palate</b> |  | <b>Number of competencies: (5)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN36.1                                    | Describe the 1) morphology, relations, blood supply and applied anatomy of palatine tonsil 2) composition of soft palate | K                                  | KH                     | Y             | Lecture  | Written                              |                                       | ENT                     |                           |
| AN36.2                                    | Describe the components and functions of Waldeyer's lymphatic ring   | K                                  | KH                     | Y             | Lecture  | Written                              |                                       | ENT                     |                           |
| AN36.3                                    | Describe the boundaries and clinical significance of pyriform fossa  | K                                  | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| AN36.4                                    | Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess                         | K                                  | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| AN36.5                                    | Describe the clinical significance of Killian's dehiscence   | K                                  | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| <b>Topic: Cavity of Nose</b>              |  | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN37.1                                    | Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply               | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                     |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN37.2  | Describe location and functional anatomy of paranasal sinuses   | K                 | KH                     | Y             | Lecture  | Written                              |                                       | ENT                     |                           |
| AN37.3  | Describe anatomical basis of sinusitis & maxillary sinus tumours  | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| <b>Topic: Larynx</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>                            |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN38.1  | Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx                                    | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                     |                           |
| AN38.2  | Describe the anatomical aspects of laryngitis   | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| AN38.3  | Describe anatomical basis of recurrent laryngeal nerve injury   | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| <b>Topic: Tongue</b> <span style="float: right;">Number of competencies: (2)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>                            |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN39.1  | Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN39.2  | Explain the anatomical basis of hypoglossal nerve palsy   | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| <b>Topic: Organs of hearing and equilibrium</b> <span style="float: right;">Number of competencies: (5)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN40.1  | Describe & identify the parts, blood supply and nerve supply of external ear  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                     |                           |
| AN40.2  | Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                     |                           |
| AN40.3  | Describe the features of internal ear   | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| AN40.4  | Explain anatomical basis of otitis externa and otitis media   | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN40.5  | Explain anatomical basis of myringotomy  | K                                  | KH                     | N             | Lecture  | Written                              |                                       | ENT                     |                           |
| <b>Topic: Eyeball</b>   |  | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN41.1  | Describe & demonstrate parts and layers of eyeball   | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Ophthalmology           |                           |
| AN41.2  | Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion   | K                                  | KH                     | N             | Lecture  | Written                              |                                       | Ophthalmology           |                           |
| AN41.3  | Describe the position, nerve supply and actions of intraocular muscles   | K                                  | KH                     | N             | Lecture  | Written                              |                                       | Ophthalmology           |                           |
| <b>Topic: Back Region</b>   |  | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN42.1  | Describe the contents of the vertebral canal   | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN42.2  | Describe & demonstrate the boundaries and contents of Suboccipital triangle  | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN42.3  | Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis                                | K                                  | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| <b>Topic: Head &amp; neck Joints, Histology, Development, Radiography &amp; Surface marking</b> |  | <b>Number of competencies: (9)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN43.1  | Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint                                 | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN43.2  | Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina | K/S                                | SH                     | Y             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN43.3  | Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland   | K/S               | SH                     | N             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                         |                           |
| AN43.4  | Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN43.5  | Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels | K/S               | SH                     | Y             | Practical  | Viva voce/ skill assessment          |                                       | General Surgery         |                           |
| AN43.6  | Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve   | K/S               | SH                     | N             | Practical  | Viva voce/ skill assessment          |                                       | General Surgery         |                           |
| AN43.7  | Identify the anatomical structures in 1) Plain x-ray skull, 2) AP view and lateral view 3) Plain x-ray cervical spine-AP and lateral view 4) Plain x-ray of paranasal sinuses  | K/S               | SH                     | Y             | Practical  | Viva voce/ skill assessment          |                                       | Radiodiagnosis          |                           |
| AN43.8  | Describe the anatomical route used for carotid angiogram and vertebral angiogram   | K/S               | SH                     | N             | Practical  | Viva voce/ skill assessment          |                                       | Radiodiagnosis          |                           |
| AN43.9  | Identify anatomical structures in carotid angiogram and vertebral angiogram  | K/S               | SH                     | N             | Practical  | Viva voce/ skill assessment          |                                       | Radiodiagnosis          |                           |
| <b>Topic: Anterior abdominal wall</b> <span style="margin-left: 200px;"><b>Number of competencies: (7)</b></span> <span style="margin-left: 200px;"><b>Number of procedures for certification: (NIL)</b></span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN44.1  | Describe & demonstrate the Planes (transpyloric, transtuberular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN44.2  | Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |

| Number                                 | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|---|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN44.3                                 | Describe the formation of rectus sheath and its contents  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN44.4                                 | Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.  | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN44.5                                 | Explain the anatomical basis of inguinal hernia.  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN44.6                                 | Describe & demonstrate attachments of muscles of anterior abdominal wall  | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN44.7                                 | Enumerate common Abdominal incisions  | K                                  | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| <b>Topic: Posterior abdominal wall</b> |   | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN45.1                                 | Describe Thoracolumbar fascia   | K                                  | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| AN45.2                                 | Describe & demonstrate Lumbar plexus for its root value, formation & branches   | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN45.3                                 | Mention the major subgroups of back muscles, nerve supply and action  | K                                  | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| <b>Topic: Male external genitalia</b>  |   | <b>Number of competencies: (5)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN46.1                                 | Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN46.2                                 | Describe parts of Epididymis  | K                                  | KH                     | Y             | Lecture, Practical                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN46.3                                 | Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage)   | K                                  | KH                     | Y             | Lecture, Practical                                       | Written/ Viva voce                   |                                       |                         |                           |
| AN46.4                                 | Explain the anatomical basis of Varicocele  | K                                  | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |

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|--------------------------------|---|-------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN46.5                         | Explain the anatomical basis of Phimosis & Circumcision   | K                                   | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| <b>Topic: Abdominal cavity</b> |   | <b>Number of competencies: (14)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN47.1                         | Describe & identify boundaries and recesses of Lesser & Greater sac   | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN47.2                         | Name & identify various peritoneal folds & pouches with its explanation   | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN47.3                         | Explain anatomical basis of Ascites & Peritonitis   | K                                   | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN47.4                         | Explain anatomical basis of Subphrenic abscess  | K                                   | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN47.5                         | Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)  | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery         |                           |
| AN47.6                         | Explain the anatomical basis of Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach | K                                   | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN47.7                         | Mention the clinical importance of Calot's triangle   | K                                   | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN47.8                         | Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein   | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN47.9                         | Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery  | K/S                                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN47.10   | Enumerate the sites of portosystemic anastomosis   | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN47.11   | Explain the anatomic basis of hematemesis& caput medusae in portal hypertension  | K                 | KH                     | Y             | Lecture,   | Written/ Viva voce                   |                                       | General Surgery         |                           |
| AN47.12   | Describe important nerve plexuses of posterior abdominal wall  | K                 | KH                     | N             | Lecture  | Written                              |                                       |                         |                           |
| AN47.13   | Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN47.14   | Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| <b>Topic: Pelvic wall and viscera</b> <span style="margin-left: 200px;"><b>Number of competencies: (8)</b></span> <span style="margin-left: 200px;"><b>Number of procedures for certification: (NIL)</b></span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| AN48.1  | Describe & identify the muscles of Pelvic diaphragm  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN48.2  | Describe & demonstrate the (position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of) important male & female pelvic viscera                                       | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN48.3  | Describe & demonstrate the origin, course, important relations and branches of internal iliac artery   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN48.4  | Describe the branches of sacral plexus   | K                 | KH                     | Y             | Lecture  | Written                              |                                       |                         |                           |
| AN48.5  | Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |
| AN48.6  | Describe the neurological basis of Automatic bladder   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery         |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration                        | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|--|---------------------------|
| AN48.7   | Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery                                |                           |
| AN48.8   | Mention the structures palpable during vaginal & rectal examination  | K                 | KH                     | N             | Lecture  | Written                              |                                       | Obstetrics &<br>Gynaecology<br>General Surgery |                           |
| <b>Topic: Perineum</b> <span style="float: right;">Number of competencies: (5)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>         |  |                   |                        |               |  |                                      |                                       |  |                           |
| AN49.1   | Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents)   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Obstetrics &<br>Gynaecology                    |                           |
| AN49.2   | Describe & identify Perineal body  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Obstetrics &<br>Gynaecology                    |                           |
| AN49.3   | Describe & demonstrate Perineal membrane in male & female  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |  |                           |
| AN49.4   | Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Surgery                                |                           |
| AN49.5   | Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure   | K                 | KH                     | N             | Lecture  | Written                              |                                       | Obstetrics &<br>Gynaecology                    |                           |
| <b>Topic: Vertebral column</b> <span style="float: right;">Number of competencies: (4)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |  |                   |                        |               |  |                                      |                                       |  |                           |
| AN50.1   | Describe the curvatures of the vertebral column  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |  |                           |
| AN50.2   | Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |  |                           |



| Number                                   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN50.3                                   | Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)  | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General<br>Medicine     |                           |
| AN50.4                                   | Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida  | K                                  | KH                     | N             | Lecture  | Written                              |                                       | Orthopedics             |                           |
| <b>Topic: Sectional Anatomy</b>          |  | <b>Number of competencies: (2)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN51.1                                   | Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)  | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Radiodiagnosis          |                           |
| AN51.2                                   | Describe & identify the midsagittal section of male and female pelvis  | K                                  | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Radiodiagnosis          |                           |
| <b>Topic: Histology &amp; Embryology</b> |  | <b>Number of competencies: (8)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                         |                           |
| AN52.1                                   | Describe & identify the microanatomical features of Gastro-intestinal system:<br>Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland  | K/S                                | SH                     | Y             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                         |                           |
| AN52.2                                   | Describe & identify the microanatomical features of:<br>Urinary system: Kidney, Ureter & Urinary bladder<br>Male Reproductive System: Testis, Epididymis, Vas deferens, Prostate & penis<br>Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord | K/S                                | SH                     | Y             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                         |                           |
| AN52.3                                   | Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum  | K/S                                | SH                     | N             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                         |                           |
| AN52.4                                   | Describe the development of anterior abdominal wall  | K                                  | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods | Assessment<br>Methods       | Number<br>required<br>to certify<br>P | Vertical<br>Integration                   | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|------------------------------|-----------------------------|---------------------------------------|---|---------------------------|
| AN52.5   | Describe the development and congenital anomalies of Diaphragm   | K                 | KH                     | Y             | Lecture                      | Written/ Viva voce          |                                       | General Surgery                           |                           |
| AN52.6   | Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut  | K                 | KH                     | Y             | Lecture                      | Written/ Viva voce          |                                       | General Surgery                           |                           |
| AN52.7   | Describe the development of Urinary system   | K                 | KH                     | Y             | Lecture                      | Written/ Viva voce          |                                       | General Surgery                           |                           |
| AN52.8   | Describe the development of male & female reproductive system  | K                 | KH                     | Y             | Lecture                      | Written/ Viva voce          |                                       | Obstetrics & Gynaecology                  |                           |
| <b>Topic: Osteology</b> <span style="margin-left: 200px;"><b>Number of competencies: (4)</b></span> <span style="margin-left: 200px;"><b>Number of procedures for certification: (NIL)</b></span>      |  |                   |                        |               |                              |                             |                                       |   |                           |
| AN53.1   | Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups   | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill assessment |                                       | General Surgery, Obstetrics & Gynaecology |                           |
| AN53.2   | Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet   | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill assessment |                                       | Obstetrics & Gynaecology                  |                           |
| AN53.3   | Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis   | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill assessment |                                       | Obstetrics & Gynaecology                  |                           |
| AN53.4   | Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)              | K/S               | SH                     | N             | Lecture, DOAP session        | Viva voce/ skill assessment |                                       |   |                           |
| <b>Topic: Radiodiagnosis</b> <span style="margin-left: 200px;"><b>Number of competencies: (3)</b></span> <span style="margin-left: 200px;"><b>Number of procedures for certification: (NIL)</b></span> |  |                   |                        |               |                              |                             |                                       |   |                           |
| AN54.1   | Describe & identify features of plain X ray abdomen  | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill assessment |                                       | Radiodiagnosis                            |                           |
| AN54.2   | Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography) | K/S               | SH                     | Y             | Lecture, DOAP session        | Viva voce/ skill assessment |                                       | Radiodiagnosis                            |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| AN54.3   | Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen  | K                 | KH                     | N             | Lecture  | Viva voce                            |                                       | Radiodiagnosis          |                           |
| <b>Topic: Surface marking</b> <span style="float: right;">Number of competencies: (2)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>    |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN55.1   | Demonstrate the surface marking of; Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & Murphy's point | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ skill assessment          |                                       | General Surgery         |                           |
| AN55.2   | Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery      | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ skill assessment          |                                       | General Surgery         |                           |
| <b>Topic: Meninges &amp; CSF</b> <span style="float: right;">Number of competencies: (2)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN56.1   | Describe & identify various layers of meninges with its extent & modifications  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Medicine        |                           |
| AN56.2   | Describe circulation of CSF with its applied anatomy  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Medicine        | Physiology                |
| <b>Topic: Spinal Cord</b> <span style="float: right;">Number of competencies: (5)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>        |   |                   |                        |               |  |                                      |                                       |                         |                           |
| AN57.1   | Identify external features of spinal cord   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                         |                           |
| AN57.2   | Describe extent of spinal cord in child & adult with its clinical implication   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN57.3   | Draw & label transverse section of spinal cord at mid-cervical & mid-thoracic level   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                         |                           |
| AN57.4   | Enumerate ascending & descending tracts at mid thoracic level of spinal cord  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Medicine        | Physiology                |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                                   | Assessment<br>Methods                   | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------|---------------------------|
| AN57.5  | Describe anatomical basis of syringomyelia   | K                 | KH                     | N             | Lecture  | Written                                 |                                       | General<br>Medicine     | Physiology                |
| <b>Topic: Medulla Oblongata</b> <span style="float: right;">Number of competencies: (4)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |  |                   |                        |               |  |   |                                       |                         |                           |
| AN58.1  | Identify external features of medulla oblongata  | K/S               | SH                     | Y             | Lecture, DOAP session  | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN58.2  | Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) ION | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         |                           |
| AN58.3  | Enumerate cranial nerve nuclei in medulla oblongata with their functional group  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         | Physiology                |
| AN58.4  | Describe anatomical basis & effects of medial & lateral medullary syndrome   | K                 | KH                     | N             | Lecture  | Written                                 |                                       | General<br>Medicine     | Physiology                |
| <b>Topic: Pons</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>              |  |                   |                        |               |  |   |                                       |                         |                           |
| AN59.1  | Identify external features of pons   | K/S               | SH                     | Y             | Lecture, DOAP session  | Written/ Viva voce/<br>skill assessment |                                       |                         | Physiology                |
| AN59.2  | Draw & label transverse section of pons at the upper and lower level   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         |                           |
| AN59.3  | Enumerate cranial nerve nuclei in pons with their functional group   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         |                           |
| <b>Topic: Cerebellum</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>        |  |                   |                        |               |  |   |                                       |                         |                           |
| AN60.1  | Describe & demonstrate external & internal features of cerebellum  | K/S               | SH                     | Y             | Practical, Lecture, Small<br>group discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN60.2  | Describe connections of cerebellar cortex and intracerebellar nuclei   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                                   | Assessment<br>Methods                   | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------|---------------------------|
| AN60.3  | Describe anatomical basis of cerebellar dysfunction   | K                 | KH                     | N             | Lecture  | Written                                 |                                       | General<br>Medicine     | Physiology                |
| <b>Topic: Midbrain</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span>  |   |                   |                        |               |  |   |                                       |                         |                           |
| AN61.1  | Identify external & internal features of midbrain   | K/S               | SH                     | Y             | Practical, Lecture, Small<br>group discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       |                         |                           |
| AN61.2  | Describe internal features of midbrain at the level of superior & inferior<br>colliculus  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         |                           |
| AN61.3  | Describe anatomical basis & effects of Benedikt's and Weber's syndrome  | K                 | KH                     | N             | Lecture  | Written                                 |                                       | General<br>Medicine     | Physiology                |
| <b>Topic: Cranial nerve nuclei &amp; Cerebral hemispheres</b> <span style="float: right;">Number of competencies: (6)</span> <span style="float: right;">Number of procedures for certification: (NIL)</span> |   |                   |                        |               |  |   |                                       |                         |                           |
| AN62.1  | Enumerate cranial nerve nuclei with its functional component  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         |                           |
| AN62.2  | Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of<br>cerebral hemisphere   | K/S               | SH                     | Y             | Practical, Lecture, Small<br>group discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       | General<br>Medicine     | Physiology                |
| AN62.3  | Describe the white matter of cerebrum   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       | General<br>Medicine     | Physiology                |
| AN62.4  | Enumerate parts & major connections of basal ganglia & limbic lobe  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       |                         | Physiology                |
| AN62.5  | Describe boundaries, parts, gross relations, major nuclei and connections<br>of dorsal thalamus, hypothalamus, epithalamus, metathalamus and<br>subthalamus | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       | General<br>Medicine     | Physiology                |
| AN62.6  | Describe & identify formation, branches & major areas of distribution of<br>circle of Willis  | K/S               | SH                     | Y             | Practical, Lecture, Small<br>group discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       | General<br>Medicine     | Physiology                |

| Number                                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                             | Assessment<br>Methods                | Number<br>required<br>to certify<br>P | Vertical<br>Integration              | Horizontal<br>Integration |
|---|---|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| <b>Topic: Ventricular System</b>          |   | <b>Number of competencies: (2)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                                      |                           |
| AN63.1                                    | Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle                                    | K/S                                | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                                      | Physiology                |
| AN63.2                                    | Describe anatomical basis of congenital hydrocephalus   | K                                  | KH                     | N             | Lecture  | Written                              |                                       | Pediatrics                           | Physiology                |
| <b>Topic: Histology &amp; Embryology</b>  |   | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                                      |                           |
| AN64.1                                    | Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum                                    | K/S                                | SH                     | Y             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                                      |                           |
| AN64.2                                    | Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum | K                                  | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       |                                      |                           |
| AN64.3                                    | Describe various types of open neural tube defects with its embryological basis   | K                                  | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| <b>Topic: Epithelium histology</b>        |   | <b>Number of competencies: (2)</b> |                        |               | <b>Number of competencies for certification: (01)</b>    |                                      |                                       |                                      |                           |
| AN65.1                                    | Identify epithelium under the microscope & describe the various types that correlate to its function                      | K/S                                | P                      | Y             | Lecture, Practical                                       | Written/ skill assessment            | 1                                     |                                      |                           |
| AN65.2                                    | Describe the ultrastructure of epithelium   | K                                  | KH                     | N             | Lecture, Practical                                       | Written                              |                                       |                                      |                           |
| <b>Topic: Connective tissue histology</b> |   | <b>Number of competencies: (2)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                                      |                           |
| AN66.1                                    | Describe & identify various types of connective tissue with functional correlation  | K/S                                | SH                     | Y             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                                      | Physiology                |
| AN66.2                                    | Describe the ultrastructure of connective tissue  | K                                  | KH                     | N             | Lecture, Practical                                       | Written                              |                                       | Pathology                            |                           |
| <b>Topic: Muscle histology</b>            |   | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b>     |                                      |                                       |                                      |                           |



| Number                                | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                         | Assessment<br>Methods     | Number<br>required<br>to certify<br>P | Vertical<br>Integration            | Horizontal<br>Integration |
|---------------------------------------|---|------------------------------------|------------------------|---------------|--|---------------------------|---------------------------------------|------------------------------------|---------------------------|
| AN71.1                                | Identify bone under the microscope; classify various types and describe the structure-function correlation of the same  | K/S                                | SH                     | Y             | Lecture, Practical                                   | Written/ skill assessment |                                       | Pathology                          |                           |
| AN71.2                                | Identify cartilage under the microscope & describe various types and structure- function correlation of the same  | K/S                                | SH                     | Y             | Lecture, Practical                                   | Written/ skill assessment |                                       | Pathology                          |                           |
| <b>Topic: Integumentary System</b>    |   | <b>Number of competencies: (1)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                           |                                       |                                    |                           |
| AN72.1                                | Identify the skin and its appendages under the microscope and correlate the structure with function   | K/S                                | SH                     | Y             | Lecture, Practical                                   | Written/ skill assessment |                                       |                                    |                           |
| <b>Topic: Chromosomes</b>             |   | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                           |                                       |                                    |                           |
| AN73.1                                | Describe the structure of chromosomes with classification   | K                                  | KH                     | Y             | Lecture  | Written                   |                                       |                                    |                           |
| AN73.2                                | Describe technique of karyotyping with its applications   | K                                  | KH                     | Y             | Lecture  | Written                   |                                       |                                    |                           |
| AN73.3                                | Describe the Lyon's hypothesis  | K                                  | KH                     | Y             | Lecture  | Written                   |                                       |                                    |                           |
| <b>Topic: Patterns of Inheritance</b> |   | <b>Number of competencies: (4)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                           |                                       |                                    |                           |
| AN74.1                                | Describe the various modes of inheritance with examples   | K                                  | KH                     | Y             | Lecture  | Written                   |                                       | General<br>Medicine,<br>Pediatrics |                           |
| AN74.2                                | Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance   | K                                  | KH                     | Y             | Lecture  | Written                   |                                       | General<br>Medicine,<br>Pediatrics |                           |
| AN74.3                                | Describe multifactorial inheritance with examples   | K                                  | KH                     | Y             | Lecture  | Written                   |                                       | General<br>Medicine                |                           |
| AN74.4                                | Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia | K                                  | KH                     | N             | Lecture  | Written                   |                                       | General<br>Medicine,<br>Pediatrics |                           |



| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods | Assessment<br>Methods | Number<br>required<br>to certify<br>P | Vertical<br>Integration                    | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|------------------------------|-----------------------|---------------------------------------|--|---------------------------|
| <b>Topic: Principle of Genetics, Chromosomal Aberrations &amp; Clinical Genetics</b> <b>Number of competencies: (5)</b> <b>Number of procedures for certification: (NIL)</b> |   |                   |                        |               |                              |                       |                                       |  |                           |
| AN75.1   | Describe the structural and numerical chromosomal aberrations   | K                 | KH                     | Y             | Lecture                      | Written               |                                       | Pediatrics                                 |                           |
| AN75.2   | Explain the terms mosaics and chimeras with example   | K                 | KH                     | N             | Lecture                      | Written               |                                       | Pediatrics                                 |                           |
| AN75.3   | Describe the genetic basis & clinical features of Prader Willi syndrome, Edward syndrome & Patau syndrome | K                 | KH                     | N             | Lecture                      | Written               |                                       | Pediatrics                                 |                           |
| AN75.4   | Describe genetic basis of variation: polymorphism and mutation  | K                 | KH                     | Y             | Lecture                      | Written               |                                       | Pediatrics                                 |                           |
| AN75.5   | Describe the principles of genetic counselling  | K                 | KH                     | Y             | Lecture                      | Written               |                                       | Pediatrics,<br>Obstetrics &<br>Gynaecology |                           |
| <b>Topic: Introduction to embryology</b> <b>Number of competencies: (2)</b> <b>Number of procedures for certification: (NIL)</b>   |   |                   |                        |               |                              |                       |                                       |  |                           |
| AN76.1   | Describe the stages of human life   | K                 | KH                     | Y             | Lecture                      | Written               |                                       |  |                           |
| AN76.2   | Explain the terms- phylogeny, ontogeny, trimester, viability  | K                 | KH                     | Y             | Lecture                      | written               |                                       |  |                           |
| <b>Topic: Gametogenesis and fertilization</b> <b>Number of competencies: (6)</b> <b>Number of procedures for certification: (NIL)</b>  |   |                   |                        |               |                              |                       |                                       |  |                           |
| AN77.1   | Describe the uterine changes occurring during the menstrual cycle   | K                 | KH                     | Y             | Lecture                      | Written               |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.2   | Describe the synchrony between the ovarian and menstrual cycles   | K                 | KH                     | Y             | Lecture                      | Written               |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.3   | Describe spermatogenesis and oogenesis along with diagrams  | K                 | KH                     | Y             | Lecture                      | Written               |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.4   | Describe the stages and consequences of fertilisation   | K                 | KH                     | Y             | Lecture                      | Written               |                                       | Obstetrics &<br>Gynaecology                |                           |

| Number                                      | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N)                      | Teaching-Learning<br>Methods | Assessment<br>Methods                                | Number<br>required<br>to certify<br>P | Vertical<br>Integration  | Horizontal<br>Integration |
|---|--|-------------------|------------------------|------------------------------------|------------------------------|--|---------------------------------------|--------------------------|---------------------------|
| AN77.5                                      | Enumerate and describe the anatomical principles underlying contraception  | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       | Obstetrics & Gynaecology |                           |
| AN77.6                                      | Describe teratogenic influences; fertility and sterility, surrogate motherhood, social significance of "sex-ratio".      | K                 | KH                     | N                                  | Lecture                      | Written  |                                       | Obstetrics & Gynaecology |                           |
| <b>Topic: Second week of development</b>    |  |                   |                        |                                    |                              |  |                                       |                          |                           |
|   |  |                   |                        | <b>Number of competencies: (5)</b> |                              | <b>Number of procedures for certification: (NIL)</b> |                                       |                          |                           |
| AN78.1                                      | Describe cleavage and formation of blastocyst  | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       |                          |                           |
| AN78.2                                      | Describe the development of trophoblast  | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       |                          |                           |
| AN78.3                                      | Describe the process of implantation & common abnormal sites of implantation   | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       | Obstetrics & Gynaecology |                           |
| AN78.4                                      | Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate                       | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       |                          |                           |
| AN78.5                                      | Describe in brief abortion; decidual reaction, pregnancy test  | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       | Obstetrics & Gynaecology |                           |
| <b>Toic: 3rd to 8th week of development</b> |  |                   |                        |                                    |                              |  |                                       |                          |                           |
|   |  |                   |                        | <b>Number of competencies: (6)</b> |                              | <b>Number of procedures for certification: (NIL)</b> |                                       |                          |                           |
| AN79.1                                      | Describe the formation & fate of the primitive streak  | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       |                          |                           |
| AN79.2                                      | Describe formation & fate of notochord   | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       |                          |                           |
| AN79.3                                      | Describe the process of neurulation  | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       |                          |                           |
| AN79.4                                      | Describe the development of somites and intra-embryonic coelom   | K                 | KH                     | Y                                  | Lecture                      | Written  |                                       | Obstetrics & Gynaecology |                           |
| AN79.5                                      | Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects | K                 | KH                     | N                                  | Lecture                      | Written  |                                       | Obstetrics & Gynaecology |                           |
| AN79.6                                      | Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein                         | K                 | KH                     | N                                  | Lecture                      | Written  |                                       | Obstetrics & Gynaecology |                           |

| Number                           | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                         | Assessment<br>Methods | Number<br>required<br>to certify<br>P | Vertical<br>Integration  | Horizontal<br>Integration |
|----------------------------------|--|------------------------------------|------------------------|---------------|--|-----------------------|---------------------------------------|--------------------------|---------------------------|
| <b>Topic: Fetal membranes</b>    |  | <b>Number of competencies: (7)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                       |                                       |                          |                           |
| AN80.1                           | Describe formation, functions & fate of-chorion: amnion; yolk sac; allantois & decidua                     | K                                  | KH                     | Y             | Lecture  | Written               |                                       |                          |                           |
| AN80.2                           | Describe formation & structure of umbilical cord   | K                                  | KH                     | Y             | Lecture  | Written               |                                       |                          |                           |
| AN80.3                           | Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier | K                                  | KH                     | Y             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| AN80.4                           | Describe embryological basis of twinning in monozygotic & dizygotic twins                                  | K                                  | KH                     | Y             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| AN80.5                           | Describe role of placental hormones in uterine growth & parturition  | K                                  | KH                     | Y             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| AN80.6                           | Explain embryological basis of estimation of fetal age.  | K                                  | KH                     | N             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| AN80.7                           | Describe various types of umbilical cord attachments   | K                                  | KH                     | N             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| <b>Topic: Prenatal Diagnosis</b> |  | <b>Number of competencies: (3)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                       |                                       |                          |                           |
| AN81.1                           | Describe various methods of prenatal diagnosis   | K                                  | KH                     | Y             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| AN81.2                           | Describe indications, process and disadvantages of amniocentesis   | K                                  | KH                     | Y             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| AN81.3                           | Describe indications, process and disadvantages of chorion villus biopsy                                   | K                                  | KH                     | Y             | Lecture  | Written               |                                       | Obstetrics & Gynaecology |                           |
| <b>Topic: Ethics in Anatomy</b>  |  | <b>Number of competencies: (1)</b> |                        |               | <b>Number of procedures for certification: (NIL)</b> |                       |                                       |                          |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods    | Assessment<br>Methods | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---------------------------------|-----------------------|---------------------------------------|-------------------------|---------------------------|
| AN 82.1   | Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissue  | S                 | SH                     | Y             | Group Activity                  | NIL                   |                                       | AETCOM                  |                           |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |  |                   |                        |               |                                 |                       |                                       |                         |                           |
| <b>Integration</b>  |  |                   |                        |               |                                 |                       |                                       |                         |                           |
| <b>Physiology</b>   |  |                   |                        |               |                                 |                       |                                       |                         |                           |
| PY3.1   | Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines                               | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       |                         | Human Anatomy             |
| PY3.7   | Describe the different types of muscle fibres and their structure  | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       |                         | Human Anatomy             |
| PY3.13  | Describe muscular dystrophy: myopathies  | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       | General Medicine        | Human Anatomy             |
| PY4.1   | Describe the structure and functions of digestive system   | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       |                         | Human Anatomy             |
| PY5.1   | Describe the functional Anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.   | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       |                         | Human Anatomy             |
| PY5.6   | Describe abnormal ECG, arrhythmias, heart block and myocardial Infarction  | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       | General Medicine        | Human Anatomy             |
| PY9.1   | Describe and discuss sex determination; sex differentiation and their abnormalities and outline psychiatry and practical implication of sex determination. | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       |                         | Human Anatomy             |
| PY10.1  | Describe and discuss the organization of nervous system  | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce     |                                       |                         | Human Anatomy             |

| Number              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods     | Assessment<br>Methods               | Number<br>required<br>to certify<br>P | Vertical<br>Integration     | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|---------------|----------------------------------|-------------------------------------|---------------------------------------|-----------------------------|---------------------------|
| PY10.2              | Describe and discuss the functions and properties of synapse, reflex, receptors   | K                 | KH                     | Y             | Lecture, Small group discussion  | Written/Viva voce                   |                                       |                             | Human Anatomy             |
| PY10.3              | Describe and discuss somatic sensations & sensory tracts  | K                 | KH                     | Y             | Lecture, Small group discussion  | Written/Viva voce                   |                                       |                             | Human Anatomy             |
| PY10.4              | Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus  | K                 | KH                     | Y             | Lecture, Small group discussion  | Written/Viva voce                   |                                       |                             | Human Anatomy             |
| PY10.5              | Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)   | K                 | KH                     | Y             | Lecture, Small group discussion  | Written/Viva voce                   |                                       |                             | Human Anatomy             |
| PY10.6              | Describe and discuss Spinal cord, its functions, lesion & sensory disturbances  | K                 | KH                     | Y             | Lecture, Small group discussion  | Written/Viva voce                   |                                       |                             | Human Anatomy             |
| PY10.7              | Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities  | K                 | KH                     | Y             | Lecture, Small group discussion  | Written/Viva voce                   |                                       | Psychiatry                  | Human Anatomy             |
| PY10.11             | Demonstrate the correct clinical examination of the nervous system: Higher functions, Sensory system, motor system, reflexes, Cranial Nerves in a normal volunteer or simulated environment | S                 | P                      | Y             | DOAP sessions                    | Skill assessment / Viva voce / OSCE | 1 each (total 5)                      |                             | Human Anatomy             |
| <b>Biochemistry</b> |   |                   |                        |               |                                  |                                     |                                       |                             |                           |
| BI6.13              | Describe the functions of the kidney, liver, thyroid and adrenal glands   | K                 | KH                     | Y             | Lecture, Small group discussions | Written/ Viva voce                  |                                       | Pathology, General Medicine | Physiology, Human Anatomy |
| BI6.14              | Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).   | K                 | KH                     | Y             | Lecture, Small group discussions | Written/ Viva voce                  |                                       | Pathology, General Medicine | Physiology, Human Anatomy |
| BI6.15              | Describe the abnormalities of kidney, liver, thyroid and adrenal glands   | K                 | KH                     | Y             | Lecture, Small group discussions | Written/ Viva voce                  |                                       | Pathology, General Medicine | Physiology, Human Anatomy |
| <b>Pathology</b>    |   |                   |                        |               |                                  |                                     |                                       |                             |                           |

| Number                                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                                   | Assessment<br>Methods               | Number<br>required<br>to certify<br>P | Vertical<br>Integration                                      | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|--|-------------------------------------|---------------------------------------|--|---------------------------|
| PA28.10                                   | Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy   | K                 | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce                  |                                       | Human Anatomy, General Surgery                               |                           |
| PA31.1                                    | Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease   | K                 | KH                     | Y             | Lecture, Small group   | Written/ Viva voce                  |                                       | Human Anatomy, General Surgery                               |                           |
| PA32.1                                    | Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings   | K                 | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce                  |                                       | Human Anatomy, Physiology, General Medicine, General Surgery |                           |
| PA32.9                                    | Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms   | K                 | KH                     | N             | Lecture, Small group discussion                                | Written/ Viva voce                  |                                       | Human Anatomy, Physiology, General Medicine, General Surgery |                           |
| PA33.1                                    | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis  | K                 | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce                  |                                       | Human Anatomy, Orthopedics                                   | Microbiology              |
| <b>Forensic Medicine &amp; Toxicology</b> |   |                   |                        |               |  |                                     |                                       |  |                           |
| FM2.28                                    | Describe and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP session of ossification centres, Hydrostatic test, Sudden infants death syndrome and Munchausen's syndrome by proxy.                                    | K                 | KH                     | Y             | Lectures, Small group discussion, Autopsy, DOAP session        | Written/Viva voce/ OSCE             |                                       | Pediatrics, Human Anatomy                                    |                           |
| FM3.1                                     | Identification<br>Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, stature, age determination using morphology, teeth-eruption, decay, bite marks, bones ossification centres, medico-legal aspects of age. | K                 | KH                     | Y             | Lectures, Small group discussion, Bedside clinic, DOAP session | Written/ Viva voce/skill assessment |                                       | Human Anatomy  |                           |

| Number                | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                  | Assessment<br>Methods               | Number<br>required<br>to certify<br>P | Vertical<br>Integration     | Horizontal<br>Integration |
|-----------------------|---|-------------------|------------------------|---------------|---|-------------------------------------|---------------------------------------|-----------------------------|---------------------------|
| <b>Anesthesiology</b> |   |                   |                        |               |   |                                     |                                       |                             |                           |
| AS4.2                 | Describe the Anatomy of the airway and its implications for general anaesthesia   | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                  |                                       | Human Anatomy               |                           |
| AS5.2                 | Describe the correlative Anatomy of the brachial plexus, subarachnoid and epidural spaces   | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                  |                                       | Human Anatomy               |                           |
| AS5.3                 | Observe and describe the principles and steps/ techniques involved in peripheral nerve blocks   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce                  |                                       | Human Anatomy               |                           |
| AS8.1                 | Describe the anatomical correlates and physiologic principles of pain   | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce                  |                                       | Human Anatomy<br>Physiology |                           |
| <b>ENT</b>            |   |                   |                        |               |   |                                     |                                       |                             |                           |
| EN1.1                 | Describe the Human Anatomy & physiology of ear, nose, throat, head & neck.  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce/Skill assessment |                                       | Human Anatomy               |                           |
| <b>Ophthalmology</b>  |   |                   |                        |               |   |                                     |                                       |                             |                           |
| OP2.1                 | Enumerate the causes, describe and discuss the aetiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa including Hordeolum externum/ internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag, lagophthalmos | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                  |                                       | Human Anatomy               |                           |
| OP4.1                 | Enumerate describe and discuss the types and causes of corneal ulceration   | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                  |                                       | Human Anatomy               |                           |
| OP6.7                 | Enumerate and discuss the aetiology, the clinical distinguishing features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above conditions.   | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                  |                                       | Human Anatomy               |                           |

| Number                              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods    | Assessment<br>Methods           | Number<br>required<br>to certify<br>P | Vertical<br>Integration                      | Horizontal<br>Integration |
|-------------------------------------|--|-------------------|------------------------|---------------|---------------------------------|---------------------------------|---------------------------------------|--|---------------------------|
| OP7.1                               | Describe the surgical anatomy and the metabolism of the lens   | K                 | KH                     | Y             | Lecture, Small group discussion | Written/ Viva voce              |                                       | Biochemistry,<br>Human Anatomy               |                           |
| OP8.1                               | Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina  | K                 | KH                     | Y             | Lecture, Small group discussion | Written/ Viva voce              |                                       | Human Anatomy,<br>Pathology                  |                           |
| <b>Dentistry</b>                    |  |                   |                        |               |                                 |                                 |                                       |  |                           |
| DE1.1                               | Enumerate the parts of the tooth   | K                 | K                      | N             | Lecture, Small group discussion | Viva voce                       |                                       | Human Anatomy                                |                           |
| DE5.1                               | Enumerate the parts of the tooth and supporting structures   | K                 | K                      | N             | Lecture, Small group discussion | Viva voce                       |                                       | Human Anatomy                                |                           |
| <b>General Medicine</b>             |  |                   |                        |               |                                 |                                 |                                       |  |                           |
| IM3.1                               | Define discuss describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia                                      | K                 | K                      | Y             | Lecture, Small Group discussion | short note/ Viva voce           |                                       | Human Anatomy,<br>Pathology,<br>Microbiology |                           |
| IM13.9                              | Demonstrate in a mannequin the correct technique for performing breast exam, rectal examination and cervical examination and pap smear                   | S                 | K                      | Y             | Bedside clinic                  | Skill assessment/<br>short case |                                       | Human Anatomy                                | General<br>Surgery        |
| IM17.1                              | Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache | K                 | KH                     | Y             | Lecture, Small group discussion | short note/ Viva voce           |                                       | Human Anatomy                                |                           |
| IM18.1                              | Describe the functional and the vascular anatomy of the brain  | K                 | KH                     | Y             | Lecture, Small Group discussion | Written/ Viva voce              |                                       | Human Anatomy                                |                           |
| IM19.1                              | Describe the functional anatomy of the locomotor system of the brain   | K                 | KH                     | Y             | Lecture, Small group discussion | Written/Viva voce               |                                       | Human Anatomy,<br>Physiology                 |                           |
| <b>Obstetrics &amp; Gynaecology</b> |  |                   |                        |               |                                 |                                 |                                       |  |                           |



| Number                 | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                                  | Assessment<br>Methods                   | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|------------------------|---|-------------------|------------------------|---------------|---|---|---------------------------------------|-------------------------|---------------------------|
| OG2.1                  | Describe and discuss the development and anatomy of the female reproductive tract, relationship to other pelvic organs, applied anatomy as related to Obstetrics and Gynaecology. | K                 | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce/<br>Skill assessment |                                       | Human Anatomy           |                           |
| OG4.1                  | Describe and discuss the basic embryology of fetus , factors influencing fetal growth and development, anatomy and physiology of placenta, and teratogenesis                      | K                 | K                      | Y             | Lecture, Small group discussion                               | Theory                                  |                                       | Human Anatomy           |                           |
| OG14.1                 | Enumerate and discuss the diameters of maternal pelvis and types  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic, DOAP session | Written/ Viva voce/<br>skill assessment |                                       | Human Anatomy           |                           |
| <b>General Surgery</b> |   |                   |                        |               |   |   |                                       |                         |                           |
| SU19.1                 | Describe the etiology and classification of cleft lip and palate  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic               | Written/ Viva voce/<br>OSCE             |                                       | Human Anatomy           |                           |
| SU19.2                 | Describe the Principles of reconstruction of cleft lip and palate   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic               | Written/ Viva voce/<br>OSCE             |                                       | Human Anatomy           |                           |
| SU22.1                 | Describe the Applied anatomy, and physiology of thyroid   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic               | Written/ Viva voce/<br>OSCE             |                                       | Human Anatomy           |                           |
| SU22.5                 | Describe the applied anatomy of parathyroid.  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic               | Written/ Viva voce/<br>OSCE             |                                       | Human Anatomy           |                           |
| SU23.1                 | Describe the applied anatomy of adrenal glands  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic               | Written/ Viva voce/<br>OSCE             |                                       | Human Anatomy           |                           |
| SU24.1                 | Describe the clinical features, principles of investigation, prognosis and management of pancreatitis.  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic               | Written/ Viva voce/<br>OSCE             |                                       | Human Anatomy           |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                    | Assessment<br>Methods    | Number<br>required<br>to certify<br>P | Vertical<br>Integration   | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---|--------------------------|---------------------------------------|---------------------------|---------------------------|
| SU25.1  | Describe applied anatomy appropriate investigations for breast disease  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |
| SU28.2  | Describe the clinical features, investigations and principles of management of congenital anomalies of Genitourinary system.  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |
| SU28.5  | Describe the applied anatomy and physiology of esophagus  | K                 | K                      | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce       |                                       | Human Anatomy, Physiology |                           |
| SU28.7  | Describe the applied anatomy and physiology of stomach.   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |
| SU28.10 | Describe the applied anatomy of liver. Describe the Clinical features, Investigations and principles of management of Liver abscess, hydatid disease, Injuries and Tumors of the liver.     | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |
| SU28.11 | Describe the applied anatomy of Spleen. Describe the clinical features, Investigations and principles of management of splenic injuries. Describe the Post-splenectomy sepsis- prophylaxis. | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |
| SU28.12 | Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system.                                  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |
| SU28.13 | Describe the applied anatomy of small and large intestines  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |
| SU28.16 | Describe applied anatomy including congenital anomalies of the rectum and anal canal  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy             |                           |

| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                    | Assessment<br>Methods    | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---------------------|--|-------------------|------------------------|---------------|---|--------------------------|---------------------------------------|-------------------------|---------------------------|
| SU30.2              | Describe the applied anatomy, clinical features, investigations and principles of management of Undescended testis.  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| SU30.3              | Describe the applied anatomy, clinical features, investigations and principles of management of Epididymo-orchitis   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| SU30.4              | Describe the applied anatomy, clinical features, investigations and principles of management of Varicocele   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| SU30.5              | Describe the applied anatomy, clinical features, investigations and principles of management of Hydrocele  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| <b>Orthopaedics</b> |  |                   |                        |               |   |                          |                                       |                         |                           |
| OR2.1               | Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle  | K/S               | KH/SH                  | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE | 1                                     | Human Anatomy           |                           |
| OR2.2               | Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus   | K                 | K/KH/SH                | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.3               | Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of supra condylar fracture of humerus  | K                 | KH/SH                  | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.4               | Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovascular deficit | K/S               | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.5               | Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury                      | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                    | Assessment<br>Methods    | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---|--------------------------|---------------------------------------|-------------------------|---------------------------|
| OR2.6  | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.7  | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability   | K                 | K/KH/SH                | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.8  | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.9  | Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.10 | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur  | K/S/A/C           | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.11 | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of (a) Fracture patella (b) Fracture distal femur © Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.12 | Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication   | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.13 | Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of:<br>(a) Fracture both bones leg<br>(b) Calcaneus<br>(c) Small bones of foot  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |
| OR2.14 | Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures  | K/S/C             | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Teaching-Learning<br>Methods                     | Assessment<br>Methods    | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration         |
|---|--|-------------------|------------------------|---------------|--|--------------------------|---------------------------------------|-------------------------|-----------------------------------|
| OR2.15  | Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome   | K/S               | SH                     | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/ OSCE | 2                                     | Human Anatomy           |                                   |
| OR2.16  | Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection, prevention and management  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                                   |
| OR11.1  | Describe and discuss the aetiopathogenesis, Clinical features, Investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves                                | K                 | K/H                    | Y             | Lecture, Small Group discussion, case discussion | Written/ Viva voce/ OSCE |                                       | Human Anatomy           | General Medicine, General surgery |
| OR12.1  | Describe and discuss the Clinical features, Investigations and principles of management of Congenital and acquired malformations and deformities of:<br>a. limbs and spine - Scoliosis and spinal bifida<br>b. Congenital dislocation of Hip, Torticollis,<br>c. congenital talipes equino varus | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce/ OSCE |                                       | Human Anatomy           |                                   |
| <b>Physical Medicine &amp; Rehabilitation</b> |  |                   |                        |               |  |                          |                                       |                         |                                   |
| PM2.1   | Describe the causes of disability in the patient with a cerebrovascular accident   | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce       |                                       | Human Anatomy           | General Medicine                  |
| PM3.1   | Describe and discuss the clinical features, types, evaluation, diagnosis and management of cerebral palsy  | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce       |                                       | Human Anatomy           | Pediatrics                        |
| <b>Pediatrics</b>                             |  |                   |                        |               |  |                          |                                       |                         |                                   |
| PE32.1  | Discuss the genetic basis, risk factors, complications, prenatal diagnosis, management and genetic counselling in Down's Syndrome  | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce       |                                       | Human Anatomy           |                                   |

# **PHYSIOLOGY (CODE: PY)**

| Number                           | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|----------------------------------|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>PHYSIOLOGY</b>                |   |                                     |                        |               |  |                                |                                       |                      |                           |
| <b>Topic: General Physiology</b> |   | <b>Number of competencies: (09)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |                           |
| PY1.1                            | Describe the structure and functions of a mammalian cell  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      |                           |
| PY1.2                            | Describe and discuss the principles of homeostasis  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      |                           |
| PY1.3                            | Describe intercellular communication  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      |                           |
| PY1.4                            | Describe apoptosis – programmed cell death  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       | Pathology            |                           |
| PY1.5                            | Describe and discuss transport mechanisms across cell membranes   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      |                           |
| PY1.6                            | Describe the fluid compartments of the body, its ionic composition & measurements   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY1.7                            | Describe the concept of pH & Buffer systems in the body   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY1.8                            | Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      |                           |
| PY1.9                            | Demonstrate the ability to describe and discuss the methods used to demonstrate the functions of the cells and its products, its communications and their applications in Clinical care and research. | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/Viva voce              |                                       |                      |                           |
| <b>Topic: Haematology</b>        |   | <b>Number of competencies: (13)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>  |                                |                                       |                      |                           |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                     | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PY2.1  | Describe the composition and functions of blood components   | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       |                      |                           |
| PY2.2  | Discuss the origin, forms, variations and functions of plasma proteins   | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY2.3  | Describe and discuss the synthesis and functions of Haemoglobin and explain its breakdown. Describe variants of haemoglobin      | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY2.4  | Describe RBC formation (erythropoiesis & its regulation) and its functions   | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       |                      |                           |
| PY2.5  | Describe different types of anaemias & Jaundice  | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       | Pathology            | Biochemistry              |
| PY2.6  | Describe WBC formation (granulopoiesis) and its regulation   | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       |                      |                           |
| PY2.7  | Describe the formation of platelets, functions and variations.   | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       |                      |                           |
| PY2.8  | Describe the physiological basis of hemostasis and, anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura) | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       | Pathology            |                           |
| PY2.9  | Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion             | K                 | KH                     | Y             | Lecture, Small group discussion, ECE- Visit to blood bank | Written/Viva voce              |                                       | Pathology            |                           |
| PY2.10 | Define and classify different types of immunity. Describe the development of immunity and its regulation                         | K                 | KH                     | Y             | Lecture, Small group discussion                           | Written/Viva voce              |                                       |                      |                           |
| PY2.11 | Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT   | S                 | SH                     | Y             | DOAP sessions   | Practical/OSPE/Viva voce       |                                       | Pathology            |                           |
| PY2.12 | Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc                       | K                 | KH                     | Y             | Demonstration   | Written /Viva voce             |                                       | Pathology            |                           |



| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------------------|---------------------------|
| PY2.13  | Describe steps for reticulocyte and platelet count  | K                 | KH                     | Y             | Demonstration<br>sessions             | Written /Viva voce             |                                       | Pathology                        |                           |
| <b>Topic: Nerve and Muscle Physiology</b> <span style="margin-left: 200px;"><b>Number of competencies: (18)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                                  |                           |
| PY3.1   | Describe the structure and functions of a neuron and neuroglia;<br>Discuss Nerve Growth Factor & other growth factors/cytokines | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       |                                  | Human Anatomy             |
| PY3.2   | Describe the types, functions & properties of nerve fibers  | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       |                                  |                           |
| PY3.3   | Describe the degeneration and regeneration in peripheral nerves   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       | General Medicine                 |                           |
| PY3.4   | Describe the structure of neuro-muscular junction and transmission<br>of impulses   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       | Anaesthesiology                  |                           |
| PY3.5   | Discuss the action of neuro-muscular blocking agents  | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       | Anaesthesiology,<br>Pharmacology |                           |
| PY3.6   | Describe the pathophysiology of Myasthenia gravis   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       | Pathology                        |                           |
| PY3.7   | Describe the different types of muscle fibres and their structure   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       |                                  | Human Anatomy             |
| PY3.8   | Describe action potential and its properties in different muscle types<br>(skeletal & smooth)                                   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       |                                  |                           |
| PY3.9   | Describe the molecular basis of muscle contraction in skeletal and<br>in smooth muscles   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       |                                  |                           |
| PY3.10  | Describe the mode of muscle contraction (isometric and isotonic)  | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       |                                  |                           |
| PY3.11  | Explain energy source and muscle metabolism   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/Viva voce              |                                       |                                  | Biochemistry              |

| Number   | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method             | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PY3.12   | Explain the gradation of muscular activity   | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       | General Medicine     |                           |
| PY3.13   | Describe muscular dystrophy: myopathies  | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       | General Medicine     | Human Anatomy             |
| PY3.14   | Perform Ergography   | S                 | SH                     | Y             | DOAP sessions                                     | Practical/OSPE/Viva voce       |                                       |                      |                           |
| PY3.15   | Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters                                      | S                 | SH                     | Y             | DOAP sessions                                     | Practical/OSPE/Viva voce       |                                       |                      |                           |
| PY3.16   | Demonstrate Harvard Step test and describe the impact on induced physiologic parameters in a simulated environment                               | S                 | SH                     | Y             | DOAP sessions                                     | Practical/OSPE/Viva voce       |                                       |                      |                           |
| PY3.17   | Describe Strength-duration curve   | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      |                           |
| PY3.18   | Observe with Computer assisted learning (i) amphibian nerve - muscle experiments (ii) amphibian cardiac experiments                              | S                 | KH                     | Y             | Demonstration, Computer assisted learning methods | Practical / Viva voce          |                                       |                      |                           |
| <b>Topic: Gastro-intestinal Physiology</b> <span style="margin-left: 150px;"><b>Number of competencies: (10)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |               |   |                                |                                       |                      |                           |
| PY4.1  | Describe the structure and functions of digestive system   | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      | Human Anatomy             |
| PY4.2  | Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY4.3  | Describe GIT movements, regulation and functions. Describe defecation reflex. Explain role of dietary fibre.                                     | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      |                           |
| PY4.4  | Describe the physiology of digestion and absorption of nutrients   | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      | Biochemistry              |

| Number   | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method   | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|---|----------------------------------|---------------------------------------|----------------------|---------------------------|
| PY4.5  | Describe the source of GIT hormones, their regulation and functions   | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       |                      |                           |
| PY4.6  | Describe the Gut-Brain Axis   | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       |                      |                           |
| PY4.7  | Describe & discuss the structure and functions of liver and gall bladder  | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       |                      | Biochemistry              |
| PY4.8  | Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration Esophageal Manometry & endoscopy | Written/Viva voce                |                                       |                      | Biochemistry              |
| PY4.9  | Discuss the physiology aspects of: peptic ulcer, gastro-oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       | General Medicine     | Biochemistry              |
| PY4.10   | Demonstrate the correct clinical examination of the abdomen in a normal volunteer or simulated environment  | S                 | SH                     | Y             | DOAP session  | Skill assessment/ Viva voce/OSCE |                                       |                      |                           |
| <b>Topic: Cardiovascular Physiology (CVS)</b> <span style="margin-left: 200px;"><b>Number of competencies: (16)</b></span> <span style="margin-left: 100px;"><b>Number of procedures that require certification: (03)</b></span> |   |                   |                        |               |   |                                  |                                       |                      |                           |
| PY5.1  | Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.  | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       |                      | Human Anatomy             |
| PY5.2  | Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions  | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       |                      |                           |
| PY5.3  | Discuss the events occurring during the cardiac cycle   | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       |                      |                           |
| PY5.4  | Describe generation, conduction of cardiac impulse  | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       |                      |                           |
| PY5.5  | Describe the physiology of electrocardiogram (E.C.G), its applications and the cardiac axis   | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce                |                                       | General Medicine     |                           |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method             | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PY5.6  | Describe abnormal ECG, arrhythmias, heart block and myocardial Infarction  | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       | General Medicine     | Human Anatomy             |
| PY5.7  | Describe and discuss haemodynamics of circulatory system   | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      |                           |
| PY5.8  | Describe and discuss local and systemic cardiovascular regulatory mechanisms   | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      |                           |
| PY5.9  | Describe the factors affecting heart rate, regulation of cardiac output & blood pressure   | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      |                           |
| PY5.10 | Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       | General Medicine     |                           |
| PY5.11 | Describe the patho-physiology of shock, syncope and heart failure  | K                 | KH                     | Y             | Lecture, Small group discussion                   | Written/Viva voce              |                                       |                      |                           |
| PY5.12 | Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment   | S                 | SH                     | Y             | DOAP sessions                                     | Practical/OSPE/ Viva voce      | 1 each x 3                            |                      |                           |
| PY5.13 | Record and interpret normal ECG in a volunteer or simulated environment  | S                 | SH                     | Y             | DOAP sessions                                     | Practical/OSPE/ Viva voce      |                                       | General Medicine     |                           |
| PY5.14 | Observe cardiovascular autonomic function tests in a volunteer or simulated environment  | S                 | SH                     | N             | DOAP sessions                                     | Skill assessment/ Viva voce    |                                       |                      |                           |
| PY5.15 | Demonstrate the correct clinical examination of the cardiovascular system in a normal volunteer or simulated environment   | S                 | SH                     | Y             | DOAP sessions                                     | Practical/OSPE/ Viva voce      |                                       |                      |                           |
| PY5.16 | Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment   | S                 | SH                     | N             | DOAP sessions, Computer assisted learning methods | Practical/OSPE/ Viva voce      |                                       | General Medicine     |                           |

Topic: Respiratory Physiology

Number of competencies: (10)

Number of procedures that require certification: (01)

| Number                         | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method   | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------------------------------|---|-------------------------------------|------------------------|---------------|---|----------------------------------|---------------------------------------|----------------------|---------------------------|
| PY6.1                          | Describe the functional anatomy of respiratory tract  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY6.2                          | Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities, alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY6.3                          | Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY6.4                          | Describe and discuss the physiology of high altitude and deep sea diving  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY6.5                          | Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY6.6                          | Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis asphyxia; drowning, periodic breathing  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY6.7                          | Describe and discuss lung function tests & their clinical significance  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY6.8                          | Demonstrate the correct technique to perform & interpret Spirometry   | S                                   | SH                     | Y             | DOAP sessions   | Skill assessment/ Viva voce      |                                       | Respiratory Medicine |                           |
| PY6.9                          | Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment   | S                                   | P                      | Y             | DOAP sessions   | Skill assessment/ Viva voce/OSCE | 1                                     |                      |                           |
| PY6.10                         | Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment  | S                                   | SH                     | Y             | DOAP sessions   | Practical/OSPE/ Viva voce        |                                       |                      |                           |
| <b>Topic: Renal Physiology</b> |   | <b>Number of competencies: (09)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                  |                                       |                      |                           |
| PY7.1                          | Describe structure and function of kidney   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |
| PY7.2                          | Describe the structure and functions of juxta glomerular apparatus and role of renin-angiotensin system   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PY7.3   | Describe the mechanism of urine formation involving processes of filtration, tubular reabsorption & secretion; concentration and diluting mechanism   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY7.4   | Describe & discuss the significance & implication of Renal clearance  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY7.5   | Describe the renal regulation of fluid and electrolytes & acid-base balance   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY7.6   | Describe the innervations of urinary bladder, physiology of micturition and its abnormalities   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY7.7   | Describe artificial kidney, dialysis and renal transplantation  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       | General Medicine     |                           |
| PY7.8   | Describe & discuss Renal Function Tests   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY7.9   | Describe cystometry and discuss the normal cystometrogram   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| <b>Topic: Endocrine Physiology</b> <span style="margin-left: 200px;"><b>Number of competencies: (06)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PY8.1   | Describe the physiology of bone and calcium metabolism  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY8.2   | Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY8.3   | Describe the physiology of Thymus & Pineal Gland  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY8.4   | Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      | Biochemistry              |

| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration                         | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| PY8.5   | Describe the metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  |                           |
| PY8.6   | Describe & differentiate the mechanism of action of steroid, protein and amine hormones  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  |                           |
| <b>Topic: Reproductive Physiology</b> <span style="margin-left: 150px;"><b>Number of competencies: (12)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |               |                                       |                                |                                       |  |                           |
| PY9.1   | Describe and discuss sex determination; sex differentiation and their abnormalities and outline psychiatry and practical implication of sex determination.             | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  | Human Anatomy             |
| PY9.2   | Describe and discuss puberty: onset, progression, stages; early and delayed puberty and outline adolescent clinical and psychological association.                     | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  |                           |
| PY9.3   | Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  |                           |
| PY9.4   | Describe female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle - hormonal, uterine and ovarian changes                               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  |                           |
| PY9.5   | Describe and discuss the physiological effects of sex hormones   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  |                           |
| PY9.6   | Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       | Obstetrics & Gynaecology, Community Medicine |                           |
| PY9.7   | Describe and discuss the effects of removal of gonads on physiological functions   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |  |                           |

| Number                        | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N)                       | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P                        | Vertical Integration     | Horizontal<br>Integration |
|-------------------------------|--|-------------------|------------------------|-------------------------------------|---------------------------------------|--------------------------------|--|--------------------------|---------------------------|
| PY9.8                         | Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it.              | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  | Obstetrics & Gynaecology |                           |
| PY9.9                         | Interpret a normal semen analysis report including (a) sperm count, (b) sperm morphology and (c) sperm motility, as per WHO guidelines and discuss the results | K                 | KH                     | Y                                   | Lecture, Small group discussion       | OSPE/Viva voce                 |  |                          |                           |
| PY9.10                        | Discuss the physiological basis of various pregnancy tests   | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  | Obstetrics & Gynaecology |                           |
| PY9.11                        | Discuss the hormonal changes and their effects during perimenopause and menopause  | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  | Obstetrics & Gynaecology |                           |
| PY9.12                        | Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility.  | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  | Obstetrics & Gynaecology |                           |
| <b>Topic: Neurophysiology</b> |  |                   |                        |                                     |                                       |                                |  |                          |                           |
|                               |  |                   |                        | <b>Number of competencies: (20)</b> |                                       |                                | <b>Number of procedures that require certification: (09)</b> |                          |                           |
| PY10.1                        | Describe and discuss the organization of nervous system  | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  |                          | Human Anatomy             |
| PY10.2                        | Describe and discuss the functions and properties of synapse, reflex, receptors  | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  |                          | Human Anatomy             |
| PY10.3                        | Describe and discuss somatic sensations & sensory tracts   | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  |                          | Human Anatomy             |
| PY10.4                        | Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus                 | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  |                          | Human Anatomy             |
| PY10.5                        | Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)  | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  |                          | Human Anatomy             |
| PY10.6                        | Describe and discuss Spinal cord, its functions, lesion & sensory disturbances   | K                 | KH                     | Y                                   | Lecture, Small group discussion       | Written/Viva voce              |  |                          | Human Anatomy             |



| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method   | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---------------------------------------|----------------------------------|---------------------------------------|----------------------|---------------------------|
| PY10.7  | Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | Psychiatry           | Human Anatomy             |
| PY10.8  | Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | Psychiatry           |                           |
| PY10.9  | Describe and discuss the physiological basis of memory, learning and speech  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | Psychiatry           |                           |
| PY10.10 | Describe and discuss chemical transmission in the nervous system. (Outline the psychiatry element).  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       |                      |                           |
| PY10.11 | Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment            | S                 | P                      | Y             | DOAP sessions                         | Skill assessment/ Viva voce/OSCE | 1 each<br>(total 5)                   |                      | Human Anatomy             |
| PY10.12 | Identify normal EEG forms  | S                 | S                      | Y             | Small group teaching                  | OSPE/Viva voce                   |                                       | Psychiatry           |                           |
| PY10.13 | Describe and discuss perception of smell and taste sensation   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | ENT                  |                           |
| PY10.14 | Describe and discuss patho-physiology of altered smell and taste sensation   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | ENT                  |                           |
| PY10.15 | Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | ENT                  |                           |
| PY10.16 | Describe and discuss pathophysiology of deafness. Describe hearing tests   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | ENT                  |                           |
| PY10.17 | Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                |                                       | Ophthalmology        |                           |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PY10.18   | Describe and discuss the physiological basis of lesion in visual pathway  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       | Ophthalmology        |                           |
| PY10.19   | Describe and discuss auditory & visual evoke potentials   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       | Ophthalmology        |                           |
| PY10.20   | Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer/ simulated environment    | S                 | P                      | Y             | DOAP sessions                         | Skill assessment/ Viva voce    | 1 each<br>(total 4)                   | ENT, Ophthalmology   |                           |
| <b>Topic: Integrated Physiology</b> <span style="margin-left: 200px;"><b>Number of competencies: (14)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PY11.1  | Describe and discuss mechanism of temperature regulation  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY11.2  | Describe and discuss adaptation to altered temperature (heat and cold)  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY11.3  | Describe and discuss mechanism of fever, cold injuries and heat stroke  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY11.4  | Describe and discuss cardio-respiratory and metabolic adjustments during exercise; physical training effects  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY11.5  | Describe and discuss physiological consequences of sedentary lifestyle  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY11.6  | Describe physiology of Infancy  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/Viva voce              |                                       | Pediatrics           |                           |
| PY11.7  | Describe and discuss physiology of aging; free radicals and antioxidants  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |
| PY11.8  | Discuss & compare cardio-respiratory changes in exercise (isometric and isotonic) with that in the resting state and under different environmental conditions (heat and cold) | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration              | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------------------|---------------------------|
| PY11.9  | Interpret growth charts   | K                 | KH                     | N             | Small group teaching                  | Practical/OSPE/ Viva voce      |                                       | Pediatrics                        |                           |
| PY11.10 | Interpret anthropometric assessment of infants  | K                 | KH                     | N             | Small group teaching                  | Practical/OSPE/ Viva voce      |                                       | Pediatrics                        |                           |
| PY11.11 | Discuss the concept, criteria for diagnosis of Brain death and its implications         | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                                   |                           |
| PY11.12 | Discuss the physiological effects of meditation   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                                   |                           |
| PY11.13 | Obtain history and perform general examination in the volunteer / simulated environment | S                 | SH                     | Y             | DOAP sessions                         | Skill assessment/ Viva voce    |                                       |                                   |                           |
| PY11.14 | Demonstrate Basic Life Support in a simulated environment                               | S                 | SH                     | Y             | DOAP sessions                         | OSCE                           |                                       | General Medicine, Anaesthesiology |                           |

**Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.**  
**Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,**  
**Column F: DOAP session – Demonstrate, Observe, Assess, Perform.**  
**Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**

## Integration

### Human Anatomy

|       |  |   |    |   |         |                    |  |                  |            |
|-------|--|---|----|---|---------|--------------------|--|------------------|------------|
| AN3.1 | Classify muscle tissue according to structure & action   | K | KH | Y | Lecture | Written/ Viva voce |  |                  | Physiology |
| AN5.1 | Differentiate between blood vascular and lymphatic system  | K | KH | Y | Lecture | Written/ Viva voce |  |                  | Physiology |
| AN5.2 | Differentiate between pulmonary and systemic circulation   | K | KH | Y | Lecture | Written/ Viva voce |  |                  | Physiology |
| AN5.6 | Describe the concept of anastomoses and collateral circulation with significance of end-arteries | K | KH | Y | Lecture | Written/ Viva voce |  | General Medicine | Physiology |
| AN5.7 | Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses         | K | KH | N | Lecture | Written            |  |                  | Physiology |
| AN5.8 | Define thrombosis, infarction & aneurysm   | K | KH | N | Lecture | Written            |  | Pathology        | Physiology |

| Number | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                             | Suggested<br>Assessment method          | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---|---|---------------------------------------|----------------------|---------------------------|
| AN7.2  | List components of nervous tissue and their functions   | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       |                      | Physiology                |
| AN7.3  | Describe parts of a neuron and classify them based on number of neurites, size & function   | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       |                      | Physiology                |
| AN7.5  | Describe principles of sensory and motor innervation of muscles   | K                 | KH                     | N             | Lecture   | Written                                 |                                       | General Medicine     | Physiology                |
| AN7.7  | Describe various types of synapse   | K                 | KH                     | N             | Lecture   | Written                                 |                                       |                      | Physiology                |
| AN21.9 | Describe & demonstrate mechanics and types of respiration   | K/S               | SH                     | Y             | Practical, Lecture,<br>Small group discussion,<br>DOAP session    | Written/Viva voce/ skill<br>assessment  |                                       |                      | Physiology                |
| AN22.2 | Describe & demonstrate external and internal features of each chamber of heart  | K/S               | SH                     | Y             | Practical, Lecture,<br>Small group discussion,<br>DOAP session    | Written/Viva voce/ skill<br>assessment  |                                       |                      | Physiology                |
| AN22.3 | Describe & demonstrate origin, course and branches of coronary arteries   | K/S               | SH                     | Y             | Practical, Lecture,<br>Small group discussion,<br>DOAP session    | Written/Viva voce/ skill<br>assessment  |                                       |                      | Physiology                |
| AN22.4 | Describe anatomical basis of ischaemic heart disease  | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Medicine     | Physiology                |
| AN22.7 | Mention the parts, position and arterial supply of the conducting system of heart   | K                 | KH                     | Y             | Lecture   | Written                                 |                                       | General Medicine     | Physiology                |
| AN24.1 | Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy | K                 | KH                     | Y             | Practical, Lecture  | Written/ Viva voce                      |                                       | General Medicine     | Physiology                |
| AN24.2 | Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate                    | K/S               | SH                     | Y             | Practical, Lecture,<br>Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>skill assessment |                                       | General Medicine     | Physiology                |
| AN24.3 | Describe a bronchopulmonary segment   | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Medicine     | Physiology                |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                       | Suggested<br>Assessment method          | Number<br>required to<br>certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|---|---------------------------------------|---------------------------------|---------------------------|
| AN25.3 | Describe fetal circulation and changes occurring at birth  | K                 | KH                     | Y             | Lecture   | Written                                 |                                       | General Medicine                | Physiology                |
| AN25.4 | Describe embryological basis of:<br>1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula                | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Medicine,<br>Pediatrics | Physiology                |
| AN25.5 | Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta            | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Medicine,<br>Pediatrics | Physiology                |
| AN25.9 | Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart | K/S               | SH                     | Y             | Practical   | Viva voce/ skill assessment             |                                       | General Medicine,<br>Pediatrics | Physiology                |
| AN56.2 | Describe circulation of CSF with its applied anatomy   | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Medicine                | Physiology                |
| AN57.4 | Enumerate ascending & descending tracts at mid thoracic level of spinal cord   | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Medicine                | Physiology                |
| AN57.5 | Describe anatomical basis of syringomyelia   | K                 | KH                     | N             | Lecture   | Written                                 |                                       | General Medicine                | Physiology                |
| AN58.3 | Enumerate cranial nerve nuclei in medulla oblongata with their functional group  | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       |                                 | Physiology                |
| AN58.4 | Describe anatomical basis & effects of medial & lateral medullary syndrome   | K                 | KH                     | N             | Lecture   | Written                                 |                                       | General Medicine                | Physiology                |
| AN59.1 | Identify external features of pons   | K/S               | SH                     | Y             | Lecture, DOAP session                                       | Written/ Viva voce/<br>skill assessment |                                       |                                 | Physiology                |
| AN60.3 | Describe anatomical basis of cerebellar dysfunction  | K                 | KH                     | N             | Lecture   | Written                                 |                                       | General Medicine                | Physiology                |
| AN61.3 | Describe anatomical basis & effects of Benedikt's and Weber's syndromme  | K                 | KH                     | N             | Lecture   | Written                                 |                                       | General Medicine                | Physiology                |
| AN62.2 | Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere   | K/S               | SH                     | Y             | Practical,<br>Lecture, Small group discussion, DOAP session | Written/ Viva voce/<br>skill assessment |                                       | General Medicine                | Physiology                |

| Number              | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| AN62.3              | Describe the white matter of cerebrum   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Medicine     | Physiology                |
| AN62.4              | Enumerate parts & major connections of basal ganglia & limbic lobe  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Medicine     | Physiology                |
| AN62.5              | Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Medicine     | Physiology                |
| AN62.6              | Describe & identify formation, branches & major areas of distribution of circle of Willis   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | General Medicine     | Physiology                |
| AN63.1              | Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       |                      | Physiology                |
| AN63.2              | Describe anatomical basis of congenital hydrocephalus   | K                 | KH                     | N             | Lecture  | Written                              |                                       | Pediatrics           | Physiology                |
| AN66.1              | Describe & identify various types of connective tissue with functional correlation  | K/S               | SH                     | Y             | Lecture, Practical                                       | Written/ skill assessment            |                                       |                      | Physiology                |
| AN67.2              | Classify muscle and describe the structure-function correlation of the same   | K                 | KH                     | Y             | Lecture, Practical                                       | Written                              |                                       |                      | Physiology                |
| AN68.2              | Describe the structure-function correlation of neuron   | K                 | KH                     | Y             | Lecture, Practical                                       | Written                              |                                       |                      | Physiology                |
| AN69.2              | Describe the various types and structure-function correlation of blood vessel   | K                 | KH                     | Y             | Lecture, Practical                                       | Written                              |                                       |                      | Physiology                |
| <b>Biochemistry</b> |   |                   |                        |               |  |                                      |                                       |                      |                           |
| BI1.1               | Describe the molecular and functional organization of a cell and its sub-cellular components.   | K                 | KH                     | Y             | Lecture, Small group discussions                         | Written assessment and Viva voce     |                                       |                      | Physiology                |

| Number | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration        | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------------|---------------------------|
| BI3.7  | Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate)  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       |                             | Physiology                |
| BI5.2  | Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies    | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine | Physiology                |
| BI6.3  | Describe the common disorders associated with nucleotide metabolism.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                             | Physiology                |
| BI6.7  | Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            | Physiology                |
| BI6.9  | Describe the functions of various minerals in the body, their metabolism and homeostasis.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            | Physiology                |
| BI6.11 | Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism.                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine | Physiology                |
| BI6.12 | Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance.                      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine | Physiology                |
| BI6.13 | Describe the functions of the kidney, liver, thyroid and adrenal glands.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine | Physiology, Human Anatomy |
| BI6.14 | Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands). | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine | Physiology, Human Anatomy |
| BI6.15 | Describe the abnormalities of kidney, liver, thyroid and adrenal glands.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine | Physiology, Human Anatomy |
| BI10.4 | Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses.      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine, Pathology | Physiology                |
| BI11.4 | Perform urine analysis to estimate and determine normal and abnormal constituents   | S                 | P                      | Y             | DOAP session                          | Skill assessment               | 1                                     | General Medicine            | Physiology                |

| Number           | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration   | Horizontal<br>Integration |
|------------------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| <b>Pathology</b> |   |                   |                        |               |                                       |                                |                                       |  |                           |
| PA26.3           | Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 | Microbiology              |
| PA27.3           | Describe the etiology, types, stages pathophysiology pathology and complications of heart failure   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine, Physiology                                 |                           |
| PA27.8           | Interpret abnormalities in cardiac function testing in acute coronary syndromes   | S                 | SH                     | Y             | DOAP session                          | Skill Assessment               |                                       | Physiology, General Medicine                                 |                           |
| PA27.9           | Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine, Physiology                                 |                           |
| PA28.5           | Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 |                           |
| PA32.1           | Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Human Anatomy, Physiology, General Medicine, General Surgery |                           |
| PA32.2           | Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 |                           |
| PA32.3           | Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 |                           |
| PA32.4           | Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 |                           |
| PA32.5           | Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 |                           |



| Number | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration   | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| PA32.7 | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 |                           |
| PA32.8 | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome    | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine                                 |                           |
| PA32.9 | Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms                 | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Human Anatomy, Physiology, General Medicine, General Surgery |                           |

#### Pharmacology

|        |  |   |    |   |         |                    |  |                              |              |
|--------|--|---|----|---|---------|--------------------|--|------------------------------|--------------|
| PH1.15 | Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants   | K | KH | Y | Lecture | Written/ Viva voce |  | Anesthesiology, Physiology   |              |
| PH1.19 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, antipsychotic, antidepressant drugs, anti-manics, opioid agonists and antagonists, drugs used for neurodegenerative disorders, antiepileptics Drugs) | K | KH | Y | Lecture | Written/ Viva voce |  | Psychiatry, Physiology       |              |
| PH1.25 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders  | K | KH | Y | Lecture | Written/ Viva voce |  | Physiology, General Medicine |              |
| PH1.26 | Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin angiotensin and aldosterone system  | K | KH | Y | Lecture | Written/ Viva voce |  | Physiology, General Medicine |              |
| PH1.35 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like:<br>1. Drugs used in anemias<br>2. Colony Stimulating factors  | K | KH | Y | Lecture | Written/ Viva voce |  | General Medicine, Physiology | Pharmacology |

| Number                                    | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method        | Number<br>required to<br>certify<br>P | Vertical Integration      | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---|---------------------------------------|---------------------------------------|---------------------------|---------------------------|
| <b>Forensic Medicine &amp; Toxicology</b> |  |                   |                        |               |   |                                       |                                       |                           |                           |
| FM14.7                                    | Demonstrate & identify that a particular stain is blood and identify the species of its origin.  | S                 | KH                     | Y             | Small group discussion, Lecture               | Log book/ skill station/<br>Viva voce |                                       | Pathology, Physiology     |                           |
| FM14.8                                    | Demonstrate the correct technique to perform and identify ABO & Rh blood group of a person.  | S                 | SH                     | Y             | Small group discussion, DOAP session          | Log book/ skill station/<br>Viva voce |                                       | Pathology, Physiology     |                           |
| <b>Anesthesiology</b>                     |  |                   |                        |               |   |                                       |                                       |                           |                           |
| AS7.3                                     | Observe and describe the management of an unconscious patient  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce                    |                                       | Physiology                | General Medicine          |
| AS7.4                                     | Observe and describe the basic setup process of a ventilator   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce                    |                                       | Physiology                | General Medicine          |
| AS8.1                                     | Describe the anatomical correlates and physiologic principles of pain  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce                    |                                       | Human Anatomy, Physiology |                           |
| AS8.2                                     | Elicit and determine the level, quality and quantity of pain and its tolerance in patient or surrogate   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce                    |                                       | Physiology                |                           |
| <b>Ophtalmology</b>                       |  |                   |                        |               |   |                                       |                                       |                           |                           |
| OP1.1                                     | Describe the physiology of vision.   | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                    |                                       | Physiology                |                           |
| <b>General Medicine</b>                   |  |                   |                        |               |   |                                       |                                       |                           |                           |
| IM1.1                                     | Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory. | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                    |                                       | Pathology, Physiology     |                           |

| Number | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration                        | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---|---------------------------|
| IM1.2  | Describe and discuss the genetic basis of some forms of heart failure   | K                 | KH                     | N             | Lecture, Small group discussion       | Written                        |                                       | Pathology, Physiology                       |                           |
| IM1.3  | Describe and discuss the aetiology microbiology pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology, Microbiology         |                           |
| IM1.4  | Stage heart failure   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                       |                           |
| IM1.5  | Describe discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                       |                           |
| IM1.6  | Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                       |                           |
| IM1.7  | Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias anemia, thyrotoxicosis, dietary factors drugs etc.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                       |                           |
| IM1.8  | Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                       |                           |
| IM2.1  | Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology<br>Community Medicine |                           |
| IM2.2  | Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                       |                           |
| IM2.3  | Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology,<br>Biochemistry                 |                           |
| IM2.4  | Discuss and describe the pathogenesis, natural history, evolution and complications of atherosclerosis and IHD  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                       |                           |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method  | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration      | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|---------------------------|---------------------------|
| IM5.1   | Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia  | K                 | K                      | Y             | Lecture, Small group discussion        | Written/Viva voce              |                                       | Pathology, Physiology     |                           |
| IM5.2   | Describe and discuss the aetiology and pathophysiology of liver injury  | K                 | K                      | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Pathology, Physiology     |                           |
| IM8.1   | Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension   | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Pathology, Physiology     |                           |
| IM8.2   | Describe and discuss the pathophysiology of hypertension  | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Pathology, Physiology     |                           |
| IM11.22 | Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment.   | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Pathology, Physiology     |                           |
| IM12.1  | Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease | K                 | K                      | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Pathology, Physiology     |                           |
| IM12.3  | Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function                        | K                 | K                      | Y             | Lecture, Small group discussion        | short notes                    |                                       | Pathology, Physiology     |                           |
| IM15.3  | Describe and discuss the physiologic effects of acute blood and volume loss   | K                 | K                      | Y             | Lecture, Small group discussions       | short note/ Viva voce          |                                       | Pathology, Physiology     | General Surgery           |
| IM18.6  | Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion  | K/S               | SH                     | Y             | Bedside clinic, DOAP session           | Skill Assessment               |                                       | Physiology                |                           |
| IM18.7  | Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech  | K/S               | SH                     | N             | Bedside clinic, DOAP session           | Skill Assessment               |                                       | Physiology                |                           |
| IM18.8  | Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in CNS disease  | K                 | KH                     | Y             | Small group discussion, Bedside clinic | Written/ Viva voce             |                                       | Physiology                |                           |
| IM19.1  | Describe the functional anatomy of the locomotor system of the brain  | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/Viva voce              |                                       | Human Anatomy, Physiology |                           |

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|---------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--------------------------|---------------------------|
| IM22.1  | Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology    |                           |
| IM22.9  | Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology               |                           |
| IM22.10 | Enumerate the causes of describe the clinical and laboratory features of metabolic alkalosis  | K                 | KH                     | N             | Lecture, small group discussion       | Written/ Viva voce             |                                       | Physiology               |                           |
| IM22.11 | Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology               |                           |
| IM22.12 | Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology               |                           |
| IM22.13 | Identify the underlying acid based disorder based on an ABG report and clinical situation   | S                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology               |                           |
| IM23.1  | Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses                     | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.2  | Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.3  | Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies         | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.4  | Enumerate the indications for enteral and parenteral nutrition in critically ill patients   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM24.22 | Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry |                           |

**Obstetrics & Gynaecology**

|       |   |   |   |   |                   |        |  |            |  |
|-------|---|---|---|---|-------------------|--------|--|------------|--|
| OG3.1 | Describe the physiology of ovulation, menstruation, fertilization, implantation and gametogenesis | K | K | Y | Lecture, seminars | Theory |  | Physiology |  |
|-------|---|---|---|---|-------------------|--------|--|------------|--|

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|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| OG7.1  | Describe and discuss the changes in the genital tract, cardiovascular system, respiratory, haematology, renal and gastrointestinal systems in pregnancy | K                 | KH                     | Y             | Lecture, seminars                     | Theory                         |                                       | Physiology           |                           |

**Pediatrics**

|        |  |   |    |   |                                 |                      |   |   |  |
|--------|--|---|----|---|---------------------------------|----------------------|---|---|--|
| PE7.2  | Explain the physiology of lactation  | K | KH | Y | Lecture, small group discussion | Written/ Viva voce   |   | Physiology                                |  |
| PE7.3  | Describe the composition and types of breast milk and discuss the differences between cow's milk and human milk  | K | KH | Y | Lecture, debate                 | Written/ Viva voce   |   | Physiology                                |  |
| PE10.1 | Define, describe the etio-pathogenesis, classify including WHO classification, clinical features, complication and management of severe Acute Malnourishment and Moderate Acute Malnutrition | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce   |   | Physiology<br>Biochemistry                |  |
| PE10.2 | Outline the clinical approach to a child with SAM and MAM  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce   |   | Physiology,<br>Biochemistry               |  |
| PE10.3 | Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community based intervention, rehabilitation and prevention               | S | SH | Y | Bed side clinics, Skill Lab     | Skill station        |   | Physiology,<br>Biochemistry               |  |
| PE11.1 | Describe the common etiology, clinical features and management of Obesity in children  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce   |   | Physiology,<br>Biochemistry,<br>Pathology |  |
| PE11.2 | Discuss the risk approach for obesity and discuss the prevention strategies  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce   |   | Physiology, Pathology                     |  |
| PE12.7 | Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin D ( Rickets and Hypervitaminosis D  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce   |   | Biochemistry,<br>Physiology, Pathology    |  |
| PE12.8 | Identify the clinical features of dietary deficiency of Vitamin D  | S | P  | Y | Bedside clinics, Skills lab     | Document in log book | 3 | Biochemistry<br>Physiology<br>Pathology   |  |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration                      | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---|---------------------------|
| PE12.9  | Assess patients with Vitamin D deficiency, diagnose, classify and plan management   | S                 | SH                     | Y             | Bed side clinics                      | Document in log book           |                                       | Biochemistry,<br>Physiology, Pathology    |                           |
| PE12.13 | Discuss the RDA, dietary sources of Vitamin K and their role in health and disease  | K                 | K                      | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry,<br>Physiology,<br>Pathology |                           |
| PE12.14 | Describe the causes, clinical features, diagnosis, management and prevention of Deficiency of Vitamin K                               | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry,<br>Physiology,<br>Pathology |                           |
| PE23.1  | Discuss the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases –VSD, ASD and PDA    | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology Pathology                      |                           |
| PE23.2  | Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases – Fallot's Physiology | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology Pathology                      |                           |
| PE23.3  | Discuss the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children                         | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology Pathology                      |                           |
| PE23.4  | Discuss the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children                              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology Pathology                      |                           |
| PE23.5  | Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever                           | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology Pathology                      |                           |
| PE23.6  | Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children                              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology,<br>Pathology,<br>Microbiology |                           |
| PE29.1  | Discuss the etio-pathogenesis, Clinical features, classification and approach to a child with anaemia                                 | K                 | KH                     | Y             | Lecture, Small group discussions      | Written/ Viva voce             |                                       | Pathology, Physiology                     |                           |
| PE29.2  | Discuss the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology                     |                           |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------|---------------------------|
| PE29.3 | Discuss the etiopathogenesis, Clinical features and management of VIT B12, Folate deficiency anaemia   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Physiology |                           |
| PE29.4 | Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic anaemia and hemolytic uremic syndrome | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology Physiology  |                           |

### General Surgery

|        |   |   |    |   |   |                    |  |                           |  |
|--------|---|---|----|---|---|--------------------|--|---------------------------|--|
| SU1.1  | Describe basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators                         | K | KH | Y | Lecture, Bed side clinic and Small group discussion | Written/ Viva voce |  | Physiology, Biochemistry  |  |
| SU2.1  | Describe Pathophysiology of shock. Types of shock. Principles of resuscitation including fluid replacement and monitoring     | K | KH | Y | Lecture, Small group discussion                     | Written/ Viva voce |  | Pathology, Physiology     |  |
| SU4.1  | Elicit, document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns.  | K | KH | Y | Lecture, Small group discussion                     | Written/ Viva voce |  | Physiology                |  |
| SU12.1 | Enumerate the causes and consequences of malnutrition in the surgical patient.  | K | KH | Y | Lecture, Small group discussion, Bedside clinic     | Written/ Viva voce |  | Physiology                |  |
| SU12.2 | Describe and Discuss the methods of estimation and replacement the Fluid and electrolyte requirements in the surgical patient | K | KH | Y | Lecture, Small group discussion, Bedside clinic     | Written/ Viva voce |  | Physiology                |  |
| SU28.5 | Describe the applied Anatomy and physiology of esophagus  | K | K  | Y | Lecture, Small group Discussion, Demonstration      | Written/ Viva voce |  | Human Anatomy, Physiology |  |

### Respiratory Medicine



| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------|---------------------------|
| CT2.1  | Define and classify obstructive airway disease   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology |                           |
| CT2.2  | Describe and discuss the epidemiology risk factors and evolution of obstructive airway disease | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology |                           |
| CT2.4  | Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnea             | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology |                           |
| CT2.5  | Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema               | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology |                           |
| CT2.11 | Describe, discuss and interpret pulmonary function tests                                       | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill assessment               |                                       | Physiology, Pathology |                           |

# **BIOCHEMISTRY (CODE: BI)**

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method   | Number<br>required<br>to certify<br>P | Vertical integration        | Horizontal<br>Integration |
|---|--|-------------------------------------|------------------------|---------------|---|----------------------------------|---------------------------------------|-----------------------------|---------------------------|
| <b>BIOCHEMISTRY</b>                                     |  |                                     |                        |               |   |                                  |                                       |                             |                           |
| <b>Topic: Basic Biochemistry</b>                        |  | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                  |                                       |                             |                           |
| BI1.1   | Describe the molecular and functional organization of a cell and its sub-cellular components.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written assessment/<br>Viva voce |                                       |                             | Physiology                |
| <b>Topic: Enzyme</b>                                    |  | <b>Number of competencies: (07)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                  |                                       |                             |                           |
| BI2.1   | Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature.  | K                                   | KH                     | Y             | Lecture, case discussion                                      | Written assessment/<br>Viva voce |                                       |                             |                           |
| BI2.2   | Observe the estimation of SGOT & SGPT  | K                                   | K                      | Y             | Demonstration   | Viva voce                        |                                       |                             |                           |
| BI2.3   | Describe and explain the basic principles of enzyme activity   | K                                   | KH                     | Y             | Lecture, case discussion                                      | Written/ Viva voce               |                                       |                             |                           |
| BI2.4   | Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       | Pathology, General Medicine |                           |
| BI2.5   | Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       | Pathology, General Medicine |                           |
| BI2.6   | Discuss use of enzymes in laboratory investigations (Enzyme-based assays)  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce               |                                       | Pathology, General Medicine |                           |
| BI2.7   | Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions.  | K                                   | KH                     | Y             | Lecture, Small group discussion, DOAP sessions                | Written/ Viva voce               |                                       | Pathology, General Medicine |                           |
| <b>Topic: Chemistry and Metabolism of Carbohydrates</b> |  | <b>Number of competencies: (10)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                  |                                       |                             |                           |
| BI3.1   | Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce                |                                       |                             |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration        | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|-----------------------------|---------------------------|
| BI3.2  | Describe the processes involved in digestion and assimilation of carbohydrates and storage.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       |                             |                           |
| BI3.3  | Describe and discuss the digestion and assimilation of carbohydrates from food.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       |                             |                           |
| BI3.4  | Define and differentiate the pathways of carbohydrate metabolism, (glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt).   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       | General Medicine            |                           |
| BI3.5  | Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders.   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       | General Medicine            |                           |
| BI3.6  | Describe and discuss the concept of TCA cycle as a amphibolic pathway and its regulation.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       |                             |                           |
| BI3.7  | Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate)   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       |                             | Physiology                |
| BI3.8  | Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       | Pathology, General Medicine |                           |
| BI3.9  | Discuss the mechanism and significance of blood glucose regulation in health and disease.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       | General Medicine            |                           |
| BI3.10   | Interpret the results of blood glucose levels and other laboratory investigations related to disorders of carbohydrate metabolism.   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       | General Medicine            |                           |
| <b>Topic: Chemistry and Metabolism of Lipids</b> |  | <b>Number of competencies: (07)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                             |                           |
| BI4.1  | Describe and discuss main classes of lipids (Essential/non-essential fatty acids, cholesterol and hormonal steroids, triglycerides, major phospholipids and sphingolipids) relevant to human system and their major functions. | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/Viva voce              |                                       | General Medicine            |                           |
| BI4.2  | Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | General Medicine            |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| BI4.3  | Explain the regulation of lipoprotein metabolism & associated disorders.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| BI4.4  | Describe the structure and functions of lipoproteins, their functions, interrelations & relations with atherosclerosis | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| BI4.5  | Interpret laboratory results of analytes associated with metabolism of lipids  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| BI4.6  | Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.                                | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| BI4.7  | Interpret laboratory results of analytes associated with metabolism of lipids.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |

**Topic: Chemistry and Metabolism of Proteins**

**Number of competencies: (05)**

**Number of procedures that require certification: (NIL)**

|       |  |   |    |   |                                 |                    |  |                             |            |
|-------|--|---|----|---|---------------------------------|--------------------|--|-----------------------------|------------|
| BI5.1 | Describe and discuss structural organization of proteins.  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |                             |            |
| BI5.2 | Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Pathology, General Medicine | Physiology |
| BI5.3 | Describe the digestion and absorption of dietary proteins.   | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Pediatrics                  |            |
| BI5.4 | Describe common disorders associated with protein metabolism.  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Pediatrics                  |            |
| BI5.5 | Interpret laboratory results of analytes associated with metabolism of proteins.   | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | General Medicine            |            |

**Topic: Metabolism and homeostasis**

**Number of competencies: (15)**

**Number of procedures that require certification: (NIL)**

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration        | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------------|---------------------------|
| BI6.1  | Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states.                                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            |                           |
| BI6.2  | Describe and discuss the metabolic processes in which nucleotides are involved.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                             |                           |
| BI6.3  | Describe the common disorders associated with nucleotide metabolism.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                             | Physiology                |
| BI6.4  | Discuss the laboratory results of analytes associated with gout & Lesch Nyhan syndrome.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            |                           |
| BI6.5  | Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            |                           |
| BI6.6  | Describe the biochemical processes involved in generation of energy in cells.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                             |                           |
| BI6.7  | Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            | Physiology                |
| BI6.8  | Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            |                           |
| BI6.9  | Describe the functions of various minerals in the body, their metabolism and homeostasis.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            | Physiology                |
| BI6.10 | Enumerate and describe the disorders associated with mineral metabolism.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine            |                           |
| BI6.11 | Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism.                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine | Physiology                |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration         | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|------------------------------|---------------------------|
| BI6.12  | Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance.                      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine  | Physiology                |
| BI6.13  | Describe the functions of the kidney, liver, thyroid and adrenal glands.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine  | Physiology, Human Anatomy |
| BI6.14  | Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands). | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine  | Physiology, Human Anatomy |
| BI6.15  | Describe the abnormalities of kidney, liver, thyroid and adrenal glands.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, General Medicine  | Physiology, Human Anatomy |
| <b>Topic: Molecular biology</b> <span style="margin-left: 200px;"><b>Number of competencies: (07)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                              |                           |
| BI7.1   | Describe the structure and functions of DNA and RNA and outline the cell cycle.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                              |                           |
| BI7.2   | Describe the processes involved in replication & repair of DNA and the transcription & translation mechanisms.                                      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                              |                           |
| BI7.3   | Describe gene mutations and basic mechanism of regulation of gene expression.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics                   |                           |
| BI7.4   | Describe applications of molecular technologies like recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics, General Medicine |                           |
| BI7.5   | Describe the role of xenobiotics in disease   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                              |                           |
| BI7.6   | Describe the anti-oxidant defence systems in the body.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                              |                           |
| BI7.7   | Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.     | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine, Pathology  |                           |

| Number                                 | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                             | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--|---------------------------|
| <b>Topic: Nutrition</b>                |   |                                     |                        |               |   |                                |                                       |  |                           |
|  |   | <b>Number of competencies: (05)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |  |                           |
| BI8.1                                  | Discuss the importance of various dietary components and explain importance of dietary fibre.   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | General Medicine, Pediatrics, Pathology          |                           |
| BI8.2                                  | Describe the types and causes of protein energy malnutrition and its effects.   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | General Medicine, Pediatrics, Pathology          |                           |
| BI8.3                                  | Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy. | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | General Medicine                                 |                           |
| BI8.4                                  | Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity.                                       | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | General Medicine, Pathology                      |                           |
| BI8.5                                  | Summarize the nutritional importance of commonly used items of food including fruits and vegetables.(macro-molecules & its importance)                    | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Community Medicine, General Medicine, Pediatrics |                           |
| <b>Topic: Extracellular Matrix</b>     |   |                                     |                        |               |   |                                |                                       |  |                           |
|  |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |  |                           |
| BI9.1                                  | List the functions and components of the extracellular matrix (ECM).  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |  |                           |
| BI9.2                                  | Discuss the involvement of ECM components in health and disease.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | General Medicine                                 |                           |
| BI9.3                                  | Describe protein targeting & sorting along with its associated disorders.   | K                                   | KH                     | N             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |  |                           |
| <b>Topic: Oncogenesis and immunity</b> |   |                                     |                        |               |   |                                |                                       |  |                           |
|  |   | <b>Number of competencies: (05)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |  |                           |



| Number                                     | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                        | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                                 | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|--|---------------------------|
| BI10.1                                     | Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis                                       | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| BI10.2                                     | Describe various biochemical tumor markers and the biochemical basis of cancer therapy.  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| BI10.3                                     | Describe the cellular and humoral components of the immune system & describe the types and structure of antibody                               | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| BI10.4                                     | Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses. | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine, Pathology                          | Physiology                |
| BI10.5                                     | Describe antigens and concepts involved in vaccine development.  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | Pathology, Pediatrics, Microbiology                  |                           |
| <b>Topic: Biochemical Laboratory Tests</b> |  | <b>Number of competencies: (24)</b> |                        |               | <b>Number of procedures that require certification: (05)</b> |                                |                                       |  |                           |
| BI11.1                                     | Describe commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal.                                  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       |  |                           |
| BI11.2                                     | Describe the preparation of buffers and estimation of pH.  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       |  |                           |
| BI11.3                                     | Describe the chemical components of normal urine.  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       |  |                           |
| BI11.4                                     | Perform urine analysis to estimate and determine normal and abnormal constituents  | S                                   | P                      | Y             | DOAP session   | Skill assessment               | 1                                     | General Medicine                                     | Physiology                |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| BI11.5  | Describe screening of urine for inborn errors & describe the use of paper chromatography | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| BI11.6  | Describe the principles of colorimetry   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| BI11.7  | Demonstrate the estimation of serum creatinine and creatinine clearance                  | S                 | P                      | Y             | Practical                             | Skills assessment              | 1                                     |                      |                           |
| BI11.8  | Demonstrate estimation of serum proteins, albumin and A:G ratio                          | S                 | P                      | Y             | Practical                             | Skills assessment              | 1                                     |                      |                           |
| BI11.9  | Demonstrate the estimation of serum total cholesterol and HDL-cholesterol                | S                 | P                      | Y             | Practical                             | Skills assessment              |                                       |                      |                           |
| BI11.10 | Demonstrate the estimation of triglycerides  | S                 | P                      | Y             | Practical                             | Skills assessment              |                                       |                      |                           |
| BI11.11 | Demonstrate estimation of calcium and phosphorous  | S                 | P                      | Y             | Practical                             | Skills assessment              |                                       |                      |                           |
| BI11.12 | Demonstrate the estimation of serum bilirubin  | S                 | P                      | Y             | Practical                             | Skills assessment              |                                       |                      |                           |
| BI11.13 | Demonstrate the estimation of SGOT/ SGPT   | S                 | P                      | Y             | Practical                             | Skills assessment              |                                       |                      |                           |
| BI11.14 | Demonstrate the estimation of alkaline phosphatase                                       | S                 | P                      | Y             | Practical                             | Skills assessment              |                                       |                      |                           |
| BI11.15 | Describe & discuss the composition of CSF  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration        | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------------|---------------------------|
| BI11.16 | Observe use of commonly used equipments/techniques in biochemistry laboratory including:<br>•pH<br>meter<br>•Paper chromatography of amino acid<br>•Protein electrophoresis<br>•TLC, PAGE<br>•Electrolyte analysis by ISE<br>•ABG analyzer<br>•ELISA<br>•Immunodiffusion<br>•Autoanalyser<br>•Quality control<br>•DNA isolation from blood/ tissue   | S                 | KH                     | Y             | Demonstration                         | Skill assessment               |                                       |                             |                           |
| BI11.17 | Explain the basis and rationale of biochemical tests done in the following conditions:<br>- diabetes mellitus,<br>- dyslipidemia,<br>- myocardial infarction,<br>- renal failure, gout,<br>- proteinuria,<br>- nephrotic syndrome,<br>- edema,<br>- jaundice,<br>- liver diseases, pancreatitis, disorders of acid- base balance, thyroid disorders. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine, Pathology |                           |
| BI11.18 | Discuss the principles of spectrophotometry.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                             |                           |
| BI11.19 | Outline the basic principles involved in the functioning of instruments commonly used in a biochemistry laboratory and their applications.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                             |                           |
| BI11.20 | Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states.  | S                 | SH                     | Y             | DOAP sessions                         | Skill assessment               | 1                                     |                             |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| BI11.21 | Demonstrate estimation of glucose, creatinine, urea and total protein in serum.  | S                 | SH                     | Y             | DOAP sessions                         | Skill assessment               | 1                                     |                      |                           |
| BI11.22 | Calculate albumin: globulin (AG) ratio and creatinine clearance  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| BI11.23 | Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| BI11.24 | Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |

**Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.**  
**Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,**  
**Column F: DOAP session – Demonstrate, Observe, Assess, Perform.**  
**Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**

## Integration

### Physiology

|        |  |   |    |   |                                 |                   |  |  |              |
|--------|--|---|----|---|---------------------------------|-------------------|--|--|--------------|
| PY3.11 | Explain energy source and muscle metabolism  | K | KH | Y | Lecture, Small group discussion | Written/Viva voce |  |  | Biochemistry |
| PY4.2  | Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion | K | KH | Y | Lecture, Small group discussion | Written/Viva voce |  |  | Biochemistry |
| PY4.4  | Describe the physiology of digestion and absorption of nutrients   | K | KH | Y | Lecture, Small group discussion | Written/Viva voce |  |  | Biochemistry |
| PY4.7  | Describe & discuss the structure and functions of liver and gall bladder   | K | KH | Y | Lecture, Small group discussion | Written/Viva voce |  |  | Biochemistry |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PY4.8  | Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration Esophageal Manometry & endoscopy | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY4.9  | Discuss the physiology aspects of: peptic ulcer, gastro-oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce              |                                       | General Medicine     | Biochemistry              |
| PY7.8  | Describe & discuss Renal Function Tests   | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce              |                                       |                      | Biochemistry              |
| PY8.4  | Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas  | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/Viva voce              |                                       |                      | Biochemistry              |

#### Pathology

|        |   |   |    |   |                                 |                    |  |                                |  |
|--------|---|---|----|---|---------------------------------|--------------------|--|--------------------------------|--|
| PA12.2 | Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation                                | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry, Pediatrics       |  |
| PA14.1 | Describe iron metabolism  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry                   |  |
| PA15.1 | Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency                                  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry, General Medicine |  |
| PA16.1 | Define and classify hemolytic anemia  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry, General Medicine |  |
| PA16.2 | Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia                                 | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry, General Medicine |  |
| PA16.3 | Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry, General Medicine |  |
| PA16.4 | Describe the etiology, pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia          | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry, General Medicine |  |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration              | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------------------|---------------------------|
| PA25.1 | Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry,<br>General Medicine |                           |

#### Dermatology, Venereology & Leprosy

|        |   |     |    |   |   |                            |  |  |  |
|--------|---|-----|----|---|---|----------------------------|--|--|--|
| DR17.1 | Enumerate and identify the cutaneous findings in Vitamin A deficiency           | K/S | SH | Y | Lecture, Small group discussion, Bedside clinic | Skill assessment Viva voce |  | General Medicine,<br>Pediatrics,<br>Biochemistry |  |
| DR17.2 | Enumerate and describe the various skin changes in Vitamin B complex deficiency | K   | KH | Y | Lecture   | Written/ Viva voce         |  | General Medicine<br>Pediatrics,<br>Biochemistry  |  |
| DR17.3 | Enumerate and describe the various changes in Vitamin C deficiency              | K   | KH | Y | Lecture   | Written/ Viva voce         |  | General Medicine,<br>Pediatrics,<br>Biochemistry |  |
| DR17.4 | Enumerate and describe the various changes in Zinc deficiency                   | K   | KH | Y | Lecture, Small group discussion                 | Written/ Viva voce         |  | General Medicine,<br>Pediatrics,<br>Biochemistry |  |

#### Ophthalmology

|       |  |   |    |   |                                 |                    |  |                             |  |
|-------|--|---|----|---|---------------------------------|--------------------|--|-----------------------------|--|
| OP7.1 | Describe the surgical anatomy and the metabolism of the lens | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry, Human Anatomy |  |
|-------|--|---|----|---|---------------------------------|--------------------|--|-----------------------------|--|

#### General Medicine

|        |   |   |    |   |                                 |                    |  |                               |  |
|--------|---|---|----|---|---------------------------------|--------------------|--|-------------------------------|--|
| IM2.3  | Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis                                | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Physiology,<br>Biochemistry   |  |
| IM2.12 | Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context                                   | S | SH | Y | Bed side clinic, DOAP session   | Skill assessment   |  | Biochemistry                  |  |
| IM2.18 | Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia | K | KH | Y | Lecture Small group discussion  | Written/ Viva voce |  | Pharmacology,<br>Biochemistry |  |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration     | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--------------------------|---------------------------|
| IM11.12 | Perform and interpret a capillary blood glucose test  | S                 | P                      | Y             | Bed side clinic, DOAP session         | Skill assessment               | 2                                     | Pathology, Biochemistry  |                           |
| IM11.13 | Perform and interpret a urinary ketone estimation with a dipstick   | S                 | P                      | Y             | Bed side clinic, DOAP session         | Skill assessment               | 2                                     | Pathology, Biochemistry  |                           |
| IM13.1  | Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India   | K                 | K                      | Y             | Lecture, Small group discussion       | short note/ Viva voce          |                                       | Pathology, Biochemistry  |                           |
| IM23.1  | Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses                     | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.2  | Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.3  | Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies         | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.4  | Enumerate the indications for enteral and parenteral nutrition in critically ill patients   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry | Pediatrics                |
| IM24.22 | Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Biochemistry |                           |

#### Pediatrics

|        |   |   |    |   |                                 |                    |  |                                  |  |
|--------|---|---|----|---|---------------------------------|--------------------|--|----------------------------------|--|
| PE9.1  | Describe the age related nutritional needs of infants, children and adolescents including micronutrients and vitamins   | K | KH | Y | Lecture, Small Group discussion | Written/ Viva voce |  | Community Medicine, Biochemistry |  |
| PE9.3  | Explains the Calorific value of common Indian foods   | K | K  | Y | Lecture, Small group discussion | Written/ Viva voce |  | Biochemistry                     |  |
| PE10.1 | Define Describe the etio-pathogenesis , Classify including WHO classification , clinical features, complication and management of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM) | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Physiology, Biochemistry         |  |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method    | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| PE10.2 | Outline the clinical approach to a child with SAM and MAM  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Physiology, Biochemistry            |                           |
| PE10.3 | Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community based intervention, rehabilitation and prevention | S                 | SH                     | Y             | Bed side clinics, Skill Lab              | Skill station                  |                                       | Physiology, Biochemistry            |                           |
| PE11.1 | Describe the common etiology, clinical features and management of Obesity in children  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Physiology, Biochemistry, Pathology |                           |
| PE12.1 | Discuss the (RDA) , dietary sources of Vitamin A and their role in Health and disease  | K                 | K                      | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE12.2 | Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin A   | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE12.3 | Identify the clinical features of dietary deficiency / excess of Vitamin A   | S                 | SH                     | Y             | Bed side clinics, Small group discussion | Document in log book           |                                       | Biochemistry                        |                           |
| PE12.4 | Diagnose patients with Vitamin A deficiency, Classify and plan management  | S                 | SH                     | N             | Bed side clinics, Skill Station          | Document in log book           |                                       | Biochemistry                        |                           |
| PE12.5 | Discuss the Vitamin A prophylaxis program and their recommendations  | K                 | K                      | Y             | Lecture, Small group Discussion          | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE12.6 | Discuss the RDA, dietary sources of Vitamin D and their role in Health and disease   | K                 | K                      | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE12.7 | Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin D (Rickets and Hypervitaminosis D)  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Biochemistry, Physiology, Pathology |                           |
| PE12.8 | Identify the clinical features of dietary deficiency of Vitamin D  | S                 | SH                     | Y             | Bedside clinics, Skills lab              | Document in log book           |                                       | Biochemistry, Physiology, Pathology |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                      | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---|---------------------------|
| PE12.9  | Assess patients with Vitamin D deficiency, Diagnose, Classify and plan management                        | S                 | SH                     | Y             | Bed side clinics                      | Document in log book           |                                       | Biochemistry,<br>Physiology,<br>Pathology |                           |
| PE12.11 | Discuss the RDA, dietary sources of Vitamin E and their role in Health and disease                       | K                 | K                      | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry                              |                           |
| PE12.12 | Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin E              | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry                              |                           |
| PE12.13 | Discuss the RDA , dietary sources of Vitamin K and their role in Health and disease                      | K                 | K                      | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry,<br>Physiology,<br>Pathology |                           |
| PE12.14 | Describe the causes, clinical features, diagnosis , management and prevention of Deficiency of Vitamin K | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry,<br>Physiology,<br>Pathology |                           |
| PE12.15 | Discuss the RDA , dietary sources of Vitamin B and their role in Health and disease                      | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry                              |                           |
| PE12.16 | Describe the causes, clinical features, diagnosis and management of Deficiency of B complex Vitamins     | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry                              |                           |
| PE12.17 | Identify the clinical features of Vitamin B complex deficiency   | S                 | SH                     | Y             | Bedside clinics, Skills lab           | Document in log book           |                                       | Biochemistry                              |                           |
| PE12.18 | Diagnose patients with Vitamin B complex deficiency and plan management                                  | S                 | SH                     | Y             | Bed side clinics, Skill lab           | Document in log book           |                                       | Biochemistry                              |                           |
| PE12.19 | Discuss the RDA, dietary sources of Vitamin C and their role in Health and disease                       | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry                              |                           |
| PE12.20 | Describe the causes, clinical features, diagnosis and management of Deficiency of Vitamin C ( scurvy)    | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Biochemistry                              |                           |
| PE12.21 | Identify the clinical features Vitamin C deficiency  | S                 | SH                     | N             | Bed side clinics, Skill lab           | Document in log book           |                                       | Biochemistry                              |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| PE13.1  | Discuss the RDA, dietary sources of Iron and their role in health and disease                           | K                 | K                      | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Pathology,<br>Biochemistry          |                           |
| PE13.2  | Describe the causes, diagnosis and management of Fe deficiency  | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Pathology,<br>Biochemistry          |                           |
| PE13.3  | Identify the clinical features of dietary deficiency of Iron and make a diagnosis                       | S                 | SH                     | Y             | Bed side clinics, Skill Lab             | Document in log book           |                                       | Pathology,<br>Biochemistry          |                           |
| PE13.4  | Interpret hemogram and Iron Panel   | S                 | SH                     | Y             | Bed side clinic, Small group discussion | Skill Assessment               |                                       | Pathology,<br>Biochemistry          |                           |
| PE13.7  | Discuss the RDA , dietary sources of Iodine and their role in Health and disease                        | K                 | K                      | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE13.8  | Describe the causes, clinical features, diagnosis and management of Deficiency of Iodine                | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE13.9  | Identify the clinical features of Iodine deficiency disorders   | S                 | SH                     | N             | Lecture, Bed side clinic                | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE13.10 | Discuss the National Goiter control program and their recommendations                                   | K                 | K                      | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Biochemistry,<br>Community Medicine |                           |
| PE13.11 | Discuss the RDA, dietary sources of Calcium and its role in Health and disease                          | K                 | K                      | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE13.12 | Describe the causes, clinical features, diagnosis and management of Ca Deficiency                       | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE13.13 | Discuss the RDA , dietary sources of Magnesium and their role in Health and disease                     | K                 | K                      | N             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE13.14 | Describe the causes, clinical features, diagnosis and management of Magnesium Deficiency                | K                 | KH                     | N             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Biochemistry                        |                           |
| PE19.1  | Explain the components of the Universal immunization Program and the sub National Immunization Programs | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Community Medicine,<br>Microbiology |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration             | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------------------|---------------------------|
| PE19.2  | Explain the epidemiology of Vaccine preventable diseases  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology |                           |
| PE19.3  | Vaccine description with regards to Classification of vaccines, Strain used, Dose, route, schedule, Risks benefits and side effects, indications and contraindications  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology |                           |
| PE19.4  | Define cold chain and discuss the methods of safe storage and handling of vaccines  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology |                           |
| PE19.5  | Discuss immunization in special situations – HIV positive children, immunodeficiency, preterm, organ transplants, those who received blood and blood products, splenectomised children, Adolescents, travellers | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology |                           |
| PE21.11 | Perform and interpret the common analytes in a Urine examination  | S                 | SH                     | Y             | Bed side clinic Labs, Skill lab       | Skill assessment               |                                       | Biochemistry, Pathology          |                           |
| PE29.16 | Discuss the Indications for Hemoglobin electrophoresis and interpret report   | K                 | K                      | N             | Small group discussion                | Viva voce                      |                                       | Biochemistry                     |                           |
| PE33.6  | Perform and interpret Urine Dip Stick for Sugar   | S                 | P                      | Y             | DOAP session                          | Skill assessment               | 3                                     | Biochemistry                     |                           |

#### General Surgery

|        |   |   |    |   |  |                     |  |                                       |  |
|--------|---|---|----|---|--|---------------------|--|---------------------------------------|--|
| SU1.1  | Describe basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.  | K | KH | Y | Lecture, Bed side clinic and Small group discussion.       | Written/ Viva voce. |  | Physiology, Biochemistry              |  |
| SU1.2  | Describe the factors that affect the metabolic response to injury.  | K | KH | Y | Lecture, Bed side clinic and Small group discussion.       | Written/ Viva voce. |  | Biochemistry                          |  |
| SU9.1  | Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient. | K | KH | Y | Lecture, Small group discussion.                           | Written/ Viva voce  |  | Biochemistry, Microbiology, Pathology |  |
| SU12.3 | Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications.                  | K | KH | Y | Lecture, Small group discussion, Bedside clinic discussion | Written/ Viva voce  |  | Biochemistry                          |  |

# **PHARMACOLOGY (CODE: PH)**

| Number                                | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                    | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------------------------------------|---|--------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>PHARMACOLOGY</b>                   |   |                                      |                        |               |  |                                |                                       |                      |                           |
| <b>KNOWLEDGE: Topic: Pharmacology</b> |   | <b>Number of competencies: (64 )</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |                           |
| PH1.1                                 | Define and describe the principles of pharmacology and pharmacotherapeutics   | K                                    | K                      | Y             | Lecture  | Written/ Viva voce             |                                       |                      |                           |
| PH1.2                                 | Describe the basis of Evidence based medicine and Therapeutic drug monitoring   | K                                    | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       |                      |                           |
| PH1.3                                 | Enumerate and identify drug formulations and drug delivery systems  | K/S                                  | SH                     | Y             | Lecture, Practical   | Written/ Viva voce             |                                       |                      |                           |
| PH1.4                                 | Describe absorption, distribution, metabolism & excretion of drugs  | K                                    | KH                     | Y             | Lecture, Small Group discussion                                | Written/ Viva voce             |                                       |                      |                           |
| PH1.5                                 | Describe general principles of mechanism of drug action   | K                                    | KH                     | Y             | Lecture, Small Group discussion                                | Written/ Viva voce             |                                       |                      |                           |
| PH1.6                                 | Describe principles of Pharmacovigilance & ADR reporting systems  | K                                    | KH                     | Y             | Lecture, Practical   | Written/ Viva voce             |                                       |                      |                           |
| PH1.7                                 | Define, identify and describe the management of adverse drug reactions (ADR)  | K/S                                  | KH                     | Y             | Lecture, Practical   | Written/ Viva voce             |                                       |                      |                           |
| PH1.8                                 | Identify and describe the management of drug interactions   | K/S                                  | KH                     | Y             | Lecture, Practical   | Written/ Viva voce             |                                       |                      |                           |
| PH1.9                                 | Describe nomenclature of drugs i.e. generic, branded drugs  | K/S                                  | SH                     | Y             | Lecture, Practical   | Written/ Viva voce             |                                       |                      |                           |
| PH1.10                                | Describe parts of a correct, complete and legible generic prescription. Identify errors in prescription and correct appropriately | K/S                                  | SH                     | Y             | Lecture, Practical   | Written/ Viva voce             |                                       |                      |                           |
| PH1.11                                | Describe various routes of drug administration, eg., oral, SC, IV, IM, SL   | K                                    | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                      |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---------------------------------|---------------------------|
| PH1.12 | Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction.  | K/S               | SH                     | Y             | Lecture, practical                    | Written/ Viva voce             |                                       | Pediatrics, General<br>Medicine |                           |
| PH1.13 | Describe mechanism of action, types, doses, side effects, indications and contraindications of adrenergic and anti-adrenergic drugs  | K                 | KH                     | Y             | Lecture, Small Group<br>discussion    | Written/ Viva voce             |                                       |                                 |                           |
| PH1.14 | Describe mechanism of action, types, doses, side effects, indications and contraindications of cholinergic and anticholinergic drugs   | K                 | KH                     | Y             | Lecture, Small Group<br>discussion    | Written/ Viva voce             |                                       |                                 |                           |
| PH1.15 | Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Anesthesiology,<br>Physiology   |                           |
| PH1.16 | Describe mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: anti-histaminics, 5-HT modulating drugs, NSAIDs, drugs for gout, anti-rheumatic drugs, drugs for migraine   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                |                           |
| PH1.17 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anesthetics   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Anesthesiology                  |                           |
| PH1.18 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and pre-anesthetic medications  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Anesthesiology                  |                           |
| PH1.19 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, anti-psychotic, anti-depressant drugs, anti-maniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs) | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Psychiatry,<br>Physiology       |                           |
| PH1.20 | Describe the effects of acute and chronic ethanol intake   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       | Psychiatry                      |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---------------------------------|---------------------------|
| PH1.21 | Describe the symptoms and management of methanol and ethanol poisonings   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine                |                           |
| PH1.22 | Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry                      | Forensic Medicine         |
| PH1.23 | Describe the process and mechanism of drug deaddiction  | K/S               | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry                      |                           |
| PH1.24 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs affecting renal systems including diuretics, antidiuretics- vasopressin and analogues                          | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |                                 |                           |
| PH1.25 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders                           | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Physiology,<br>General Medicine |                           |
| PH1.26 | Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin-angiotensin and aldosterone system   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Physiology,<br>General Medicine |                           |
| PH1.27 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                |                           |
| PH1.28 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                |                           |
| PH1.29 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                |                           |
| PH1.30 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the antiarrhythmics   | K                 | KH                     | N             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|------------------------------|---------------------------|
| PH1.31 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemias  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             |                           |
| PH1.32 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD   | K                 | KH                     | Y             | Lecture, Small Group discussion       | Written/ Viva voce             |                                       | Respiratory Medicine         |                           |
| PH1.33 | Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussives, expectorants/ mucolytics)  | K                 | KH                     | Y             | Lecture, Small Group discussion       | Written/ Viva voce             |                                       | Respiratory Medicine         |                           |
| PH1.34 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below:<br>1. Acid-peptic disease and GERD<br>2. Antiemetics and prokinetics<br>3. Antidiarrhoeals<br>4. Laxatives<br>5. Inflammatory Bowel Disease<br>6. Irritable Bowel Disorders, biliary and pancreatic diseases | K                 | KH                     | Y             | Lecture, Small Group discussion       | Written/ Viva voce             |                                       | General Medicine             |                           |
| PH1.35 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like:<br>1. Drugs used in anemias<br>2. Colony Stimulating factors  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine, Physiology | Pharmacology              |
| PH1.36 | Describe the mechanism of action, types, doses, side effects, indications and contraindications of drugs used in endocrine disorders (diabetes mellitus, thyroid disorders and osteoporosis)   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine             |                           |
| PH1.37 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used as sex hormones, their analogues and anterior Pituitary hormones  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |                              |                           |
| PH1.38 | Describe the mechanism of action, types, doses, side effects, indications and contraindications of corticosteroids   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |                              |                           |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration               | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|------------------------------------|---------------------------|
| PH1.39 | Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Obstetrics & Gynaecology           |                           |
| PH1.40 | Describe mechanism of action, types, doses, side effects, indications and contraindications of 1. Drugs used in the treatment of infertility, and 2. Drugs used in erectile dysfunction | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Obstetrics & Gynaecology           |                           |
| PH1.41 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Obstetrics & Gynaecology           |                           |
| PH1.42 | Describe general principles of chemotherapy   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |                                    |                           |
| PH1.43 | Describe and discuss the rational use of antimicrobials including antibiotic stewardship program  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine, Pediatrics       | Microbiology              |
| PH1.44 | Describe the first line antitubercular dugs, their mechanisms of action, side effects and doses.  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Respiratory Medicine               |                           |
| PH1.45 | Describe the dugs used in MDR and XDR Tuberculosis  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Respiratory Medicine               | Microbiology              |
| PH1.46 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Dermatology, Venereology & Leprosy | Microbiology              |
| PH1.47 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis        | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                   | Microbiology              |
| PH1.48 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV                         | K                 | KH                     | Y             | Lecture                               | Written/Viva voce              |                                       |                                    | Microbiology              |
| PH1.49 | Describe mechanism of action, classes, side effects, indications and contraindications of anticancer drugs  | K                 | KH                     | Y             | Lecture                               | Written/Viva voce              |                                       |                                    |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration                     | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| PH1.50 | Describe mechanisms of action, types, doses, side effects, indications and contraindications of immunomodulators and management of organ transplant rejection  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |  |                           |
| PH1.51 | Describe occupational and environmental pesticides, food adulterants, pollutants and insect repellents   | K                 | KH/                    | Y             | Lecture                               | Written/ Viva voce             |                                       |  |                           |
| PH1.52 | Describe management of common poisoning, insecticides, common sting and bites  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                         |                           |
| PH1.53 | Describe heavy metal poisoning and chelating agents  | K                 | KH                     | N             | Lecture                               | Written/ Viva voce             |                                       |  |                           |
| PH1.54 | Describe vaccines and their uses   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |  |                           |
| PH1.55 | Describe and discuss the following National Health Programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filariasis, Kala Azar, Diarrhoeal diseases, Anaemia & nutritional disorders, Blindness, Non-communicable diseases, cancer and Iodine deficiency | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |  | Community Medicine        |
| PH1.56 | Describe basic aspects of Geriatric and Pediatric pharmacology   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Pediatrics                               |                           |
| PH1.57 | Describe drugs used in skin disorders  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Dermatology,<br>Venereology &<br>Leprosy |                           |
| PH1.58 | Describe drugs used in Ocular disorders  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Ophthalmology                            |                           |
| PH1.59 | Describe and discuss the following: Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |  |                           |
| PH1.60 | Describe and discuss Pharmacogenomics and Pharmacoeconomics  | K                 | KH                     | N             | Lecture                               | Written/ Viva voce             |                                       |  |                           |
| PH1.61 | Describe and discuss dietary supplements and nutraceuticals  | K                 | KH                     | N             | Lecture                               | Written/ Viva voce             |                                       |  |                           |





| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PH5.6  | Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs | A/C               | SH                     | Y             | Small group discussion                | Skill station                  |                                       | Psychiatry           |                           |
| PH5.7  | Demonstrate an understanding of the legal and ethical aspects of prescribing drugs   | K                 | KH                     | Y             | Small group discussion                | short note/ Viva voce          |                                       |                      | Forensic Medicine         |

**Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.**

**Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,**

**Column F: DOAP session – Demonstrate, Observe, Assess, Perform.**

**Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**

## Integration

| Physiology |  |   |    |   |                                  |                    |  |                                  |  |
|------------|--|---|----|---|----------------------------------|--------------------|--|----------------------------------|--|
| PY3.5      | Discuss the action of neuro-muscular blocking agents | K | KH | Y | Lectures, Small group discussion | Written/ Viva voce |  | Anaesthesiology,<br>Pharmacology |  |

## Microbiology

|       |   |   |    |   |                                  |                     |  |                  |                            |
|-------|---|---|----|---|----------------------------------|---------------------|--|------------------|----------------------------|
| MI1.6 | Describe the mechanisms of drug resistance, methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy.                    | K | K  | Y | Lecture , Small group discussion | Written<br><br>Viva |  |                  | Pharmacology               |
| MI3.3 | Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them          | K | KH | Y | Lecture, Small group discussion  | Written/ Viva voce  |  | General Medicine | Pharmacology,<br>Pathology |
| MI3.5 | Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis                                 | K | KH | Y | Lecture, Small group discussion  | Written/ Viva voce  |  | General Medicine | Pharmacology               |
| MI3.6 | Describe the etio-pathogenesis of Acid Peptic Disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD | K | KH | Y | Lecture, Small group discussion  | Written/ Viva voce  |  | General Medicine | Pharmacology,<br>Pathology |

## Community Medicine

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| CM3.8  | Describe the mode of action & application cycle of commonly used insecticides and rodenticides | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| CM19.1 | Define and describe the concept of Essential Medicine List (EML)                               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Pharmacology              |
| CM19.2 | Describe roles of essential medicine in primary health care                                    | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Pharmacology              |
| CM19.3 | Describe counterfeit medicine and its prevention   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Pharmacology              |

#### Forensic Medicine & Toxicology

|        |   |   |      |   |                                 |                    |  |              |              |
|--------|---|---|------|---|---------------------------------|--------------------|--|--------------|--------------|
| FM4.11 | Describe and discuss euthanasia   | K | KH   | Y | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM4.12 | Discuss legal and ethical issues in relation to stem cell research                                    | K | KH   | Y | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM4.17 | Describe and discuss ethical Principles: Respect for autonomy, non-maleficence, beneficence & justice | K | KH   | Y | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM4.22 | Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath             | K | KH   | Y | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM4.23 | Describe the modified Declaration of Geneva and its relevance   | K | KH   | Y | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM4.25 | Clinical research & Ethics:<br>Discuss human experimentation including clinical trials                | K | KH   | N | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM4.26 | Discuss the constitution and functions of ethical committees  | K | KH   | Y | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM4.27 | Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals           | K | KH   | N | Lecture, Small group discussion | Written/ Viva voce |  | AETCOM       | Pharmacology |
| FM8.1  | Describe the history of Toxicology  | K | K/KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Pharmacology |              |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                    | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration              | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-----------------------------------|---------------------------|
| FM8.2  | Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison   | K                 | K/KH                   | Y             | Lecture, Small group discussion  | Written/ Viva voce             |                                       | Pharmacology                      |                           |
| FM8.3  | Describe the various types of poisons, Toxicokinetics & Toxicodynamics and diagnosis of poisoning in living and dead   | K                 | K/KH                   | Y             | Lecture, Small group discussion  | Written/ Viva voce             |                                       | Pharmacology                      |                           |
| FM8.4  | Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons  | K                 | K/KH                   | Y             | Lecture, Small group discussion  | Written/ Viva voce             |                                       | Pharmacology                      |                           |
| FM8.5  | Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis   | K                 | K/KH                   | Y             | Lecture, Small group discussion  | Written/ Viva voce/<br>OSPE    |                                       | Pharmacology                      |                           |
| FM8.6  | Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India   | K                 | K/KH                   | Y             | Lecture, Small group discussion  | Written/ Viva voce<br>/OSCE    |                                       | Pharmacology                      |                           |
| FM8.7  | Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids  | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, DOAP session          | Written/ Viva voce<br>/OSCE    |                                       | Pharmacology,<br>General Medicine |                           |
| FM8.8  | Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination  | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, DOAP session          | Written/ Viva voce/<br>OSCE    |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.1  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Caustics Inorganic – sulphuric, nitric, and hydrochloric acid Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids. | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE    |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.2  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium   | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE    |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.3  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium   | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE    |                                       | Pharmacology,<br>General Medicine |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                    | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration           | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|--------------------------------|---------------------------|
| FM9.4  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol  | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM9.5  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide  | K                 | K/KH                   | Y             | Lectures, Small group discussion Bed side clinic, Autopsy, DOAP session  | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine | Pharmacology              |
| FM9.6  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases  | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM10.1 | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to:<br>i. Antipyretics – Paracetamol, Salicylates<br>ii. Anti-Infectives (Common antibiotics – an overview)<br>iii. Neuropsychotoxicology Barbiturates, benzodiazepines, phenytoin, lithium, haloperidol, neuroleptics, tricyclics<br>iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants<br>v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis<br>vi. Gastro-Intestinal and Endocrinal Drugs – Insulin | K                 | K/KH                   | Y             | Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine | Pharmacology              |

**Dermatology, Venereology & Leprosy**

|       |  |   |    |   |                                 |                     |  |            |                            |
|-------|--|---|----|---|---------------------------------|---------------------|--|------------|----------------------------|
| DR5.3 | Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies for scabies                  | K | KH | Y | Lecture, Small group discussion | Written / Viva voce |  | Pediatrics | Pharmacology               |
| DR7.3 | Describe the pharmacology and action of antifungal (systemic and topical). agents Enumerate side effects of antifungal therapy | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce  |  |            | Microbiology ,Pharmacology |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration        |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|----------------------------------|
| DR8.7  | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin                                      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       |                      | Pharmacology                     |
| DR9.4  | Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology                     |
| DR9.5  | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on National Guidelines                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology, Community Medicine |
| DR9.6  | Describe the treatment of Leprosy based on WHO guidelines   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology, Community Medicine |
| DR9.7  | Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology, Psychiatry         |
| DR10.3 | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology, Microbiology       |
| DR10.8 | Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV) | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology, Microbiology       |
| DR11.3 | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology, Microbiology       |
| DR14.5 | Enumerate the indications and describe the pharmacology indications and adverse reactions of drugs used in the urticaria and angioedema   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       |                      | Pharmacology                     |
| DR15.3 | Enumerate the indications and describe the pharmacology indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Surgery      | Microbiology, Pharmacology       |

| Number                | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-----------------------|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>Anesthesiology</b> |   |                   |                        |               |   |                                |                                       |                      |                           |
| AS3.6                 | Choose and write a prescription for appropriate premedications for patients undergoing surgery  | S                 | SH                     | Y             | DOAP session, Bedside clinic session          | Skill station                  |                                       | Pharmacology         |                           |
| AS4.1                 | Describe and discuss the pharmacology of drugs used in induction and maintenance of general anaesthesia (including intravenous and inhalation induction agents, opiate and non-opiate analgesics, depolarising and non-depolarising muscle relaxants, anticholinesterases | K                 | KH                     | Y             | Lecture, Small group discussion               | Written / Viva voce            |                                       | Pharmacology         |                           |
| AS4.3                 | Observe and describe the principles and the practical aspects of induction and maintenance of anaesthesia   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Pharmacology         |                           |
| AS5.4                 | Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anaesthesia  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written / Viva voce            |                                       | Pharmacology         |                           |
| AS8.3                 | Describe the pharmacology and use of drugs in the management of pain  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written / Viva voce            |                                       | Pharmacology         |                           |
| AS8.4                 | Describe the principles of pain management in palliative care   | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written / Viva voce            |                                       | Pharmacology         | General Medicine          |
| AS8.5                 | Describe the principles of pain management in the terminally ill  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written / Viva voce            |                                       | Pharmacology         | General Medicine          |
| AS10.4                | Define and describe common medical and medication errors in anaesthesia   | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written / Viva voce            |                                       | Pharmacology         | General Medicine          |

**Psychiatry**

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS4.4  | Describe the treatment of alcohol and substance abuse disorders including behavioural and pharmacologic therapy                    | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS4.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS5.3  | Describe the treatment of schizophrenia including behavioural and pharmacologic therapy  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS5.5  | Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia                                     | K                 | KH                     | Y             | Lecture Small group discussion        | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS6.4  | Describe the treatment of depression including behavioural and pharmacologic therapy   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS6.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in depression  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS7.4  | Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS7.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders                                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS8.4  | Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS8.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders                                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS10.4 | Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS10.6 | Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS11.4 | Describe the treatment of <b>personality</b> disorders including behavioural, psychosocial and pharmacologic therapy               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS11.6 | Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders                             | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS12.4 | Describe the treatment of <b>psychosomatic</b> disorders including behavioural, psychosocial and pharmacologic therapy             | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS12.6 | Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders                           | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS13.4 | Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial and pharmacologic therapy | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS18.1 | Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs in psychiatric disorders      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |

**General Medicine**

|        |  |   |    |   |  |                                      |  |                              |  |
|--------|--|---|----|---|--|--------------------------------------|--|------------------------------|--|
| IM1.24 | Describe and discuss the pharmacology of drugs including indications & contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides | K | KH | Y | Lecture, Small group discussion        | Written/ Viva voce                   |  | Pharmacology                 |  |
| IM1.27 | Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease   | K | KH | Y | Bedside clinic, Small group discussion | Written                              |  | Microbiology<br>Pharmacology |  |
| IM1.30 | Administer an intramuscular injection with an appropriate explanation to the patient   | S | SH | Y | Bedside clinic, Skill assessment       | log book documentation of completion |  | Pharmacology                 |  |
| IM2.15 | Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation   | K | KH | Y | Lecture Small group discussion         | Written/ Viva voce                   |  | Pharmacology                 |  |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method       | Number<br>required<br>to certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------------|---------------------------------------|----------------------------|---------------------------|
| IM2.18 | Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia                                     | K                 | KH                     | Y             | Lecture Small group discussion        | Written/ Viva voce                   |                                       | Pharmacology, Biochemistry |                           |
| IM2.20 | Discuss and describe the assessment and relief of pain in acute coronary syndromes  | K                 | KH                     | Y             | Lecture Small group discussion        | Written/ Viva voce                   |                                       | Pharmacology               |                           |
| IM2.23 | Describe and discuss the indications for nitrates, anti platelet agents, gpIIb - IIIa inhibitors, beta blockers, ACE inhibitors etc in the management of coronary syndromes | K                 | KH                     | Y             | Lecture Small group discussion        | Written/ Viva voce                   |                                       | Pharmacology               |                           |
| IM3.12 | Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum              | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill Assessment/ Written/ Viva voce |                                       | Pharmacology, Microbiology |                           |
| IM3.13 | Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum                    | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill Assessment/ Written/ Viva voce |                                       | Pharmacology, Microbiology |                           |
| IM4.22 | Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance   | K                 | KH                     | Y             | Small group, Lecture                  | Written/ Viva voce                   |                                       | Pharmacology               |                           |
| IM4.23 | Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and National Programs  | S                 | SH                     | Y             | Skill assessment                      | Skill assessment                     |                                       | Microbiology, Pharmacology |                           |
| IM4.26 | Counsel the patient on malarial prevention  | C                 | SH                     | Y             | DOAP session                          | Skill assessment                     |                                       | Microbiology, Pharmacology |                           |
| IM5.7  | Enumerate and describe the causes and pathophysiology of drug induced liver injury  | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce                   |                                       | Pathology, Pharmacology    |                           |
| IM5.16 | Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy                     | K                 | KH                     | Y             | Written, Small group                  | Skill Assessment/ Written/ Viva voce |                                       | Pharmacology               | General Surgery           |
| IM6.13 | Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea   | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce                   |                                       | Pharmacology, Microbiology |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested Assessment<br>method          | Number<br>required<br>to certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---|---|---------------------------------------|-------------------------------------|---------------------------|
| IM6.17  | Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions  | K                 | K                      | Y             | Lecture, Small group discussion         | Written/ Viva voce                      |                                       | Microbiology,<br>Pharmacology       |                           |
| IM6.18  | Discuss and describe the principles and regimens used in post exposure prophylaxis   | K                 | K                      | Y             | Lecture Small group discussion          | Written/ Viva voce                      |                                       | Microbiology,<br>Pharmacology       |                           |
| IM7.21  | Select, prescribe and communicate appropriate medications for relief of joint pain   | K/C               | SH                     | Y             | DOAP session                            | Skill assessment/ written               |                                       | Pharmacology                        | Orthopedics               |
| IM7.22  | Select, prescribe and communicate preventive therapy for crystalline arthropathies   | K/C               | SH                     | Y             | DOAP session                            | Skill assessment/ written               |                                       | Pharmacology                        |                           |
| IM7.23  | Select, prescribe and communicate treatment option for systemic rheumatologic conditions   | K/C               | SH                     | Y             | DOAP session                            | Skill assessment/ written               |                                       | Pharmacology                        |                           |
| IM7.24  | Describe the basis for biologic and disease modifying therapy in rheumatologic diseases  | K                 | KH                     | Y             | Bed side clinic, Small group discussion | Skill assessment/ written               |                                       | Pharmacology                        |                           |
| IM8.14  | Develop an appropriate treatment plan for essential hypertension   | K                 | KH                     | Y             | Small group discussion                  | Skill assessment/<br>Written/ Viva voce |                                       | Pharmacology                        |                           |
| IM8.15  | Recognise, prioritise and manage hypertensive emergencies  | S                 | SH                     | Y             | DOAP session                            | Skill assessment/ written               |                                       | Pharmacology                        |                           |
| IM9.14  | Prescribe replacement therapy with iron, B12, folate   | S                 | SH                     | Y             | Bed side clinic, DOAP session           | Skill assessment/ written               |                                       | Pharmacology                        |                           |
| IM9.15  | Describe the national programs for anemia prevention   | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce                      |                                       | Pharmacology,<br>Community Medicine |                           |
| IM10.25 | Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis | K/C               | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce                      |                                       | Pharmacology                        |                           |
| IM11.16 | Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions                                 | K                 | KH                     | Y             | Small group discussion,<br>Lecture      | Written/ Viva voce                      |                                       | Pharmacology                        |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method  | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| IM11.18 | Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Pharmacology         |                           |
| IM11.19 | Demonstrate and counsel patients on the correct technique to administer insulin   | S/C               | SH                     | Y             | DOAP session                           | Skill assessment               |                                       | Pharmacology         |                           |
| IM12.13 | Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs   | K                 | KH                     | Y             | Lecture, Small group discussion        | Viva voce/ short note          |                                       | Pharmacology         | General Surgery           |
| IM12.14 | Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status  | S/C               | SH                     | Y             | Skill assessment                       | Skill assessment               |                                       | Pharmacology         |                           |
| IM12.15 | Describe and discuss the indications of thionamide therapy, radio iodine therapy and General Surgery in the management of thyrotoxicosis  | K                 | KH                     | Y             | Bedside clinic, small group discussion | short note/ Viva voce          |                                       | Pharmacology         | General Surgery           |
| IM13.6  | Describe and distinguish the difference between curative and palliative care in patients with cancer  | K                 | K                      | N             | Lecture, Small group discussion        | short note/ Viva voce          |                                       | Pharmacology         |                           |
| IM13.13 | Describe and assess pain and suffering objectively in a patient with cancer   | K                 | KH                     | Y             | Bedside clinic, small group discussion | short note/ Viva voce          |                                       | Pharmacology         | General Surgery           |
| IM13.14 | Describe the indications for General Surgery, radiation and chemotherapy for common malignancies  | K                 | KH                     | Y             | Bedside clinic, small group discussion | short note/ Viva voce          |                                       | Pharmacology         | General Surgery           |
| IM13.17 | Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer  | K                 | KH                     | Y             | Bedside clinic, small group discussion | short note/ Viva voce          |                                       | Pharmacology         | Anesthesiology            |
| IM14.13 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity  | K                 | K                      | Y             | Lecture, small group discussion        | short note/ Viva voce          |                                       | Pharmacology         |                           |
| IM15.14 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed  | K                 | K                      | Y             | Lecture, Small group discussion        | Viva voce/ short note          |                                       | Pharmacology         | General Surgery           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---------------------------------|---------------------------|
| IM15.15 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori | K                 | K                      | Y             | Lecture, small group discussion       | short note/ Viva voce          |                                       | Pharmacology, Microbiology      | General Surgery           |
| IM16.13 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea                     | K                 | K                      | Y             | Lecture, small group discussion       | short note/ Viva voce          |                                       | Pharmacology, Microbiology      |                           |
| IM16.14 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea                     | K                 | K                      | Y             | Lecture, Small group discussion       | Short note/ Viva voce          |                                       | Pharmacology, Microbiology      |                           |
| IM16.16 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy                              | K                 | K                      | Y             | Lecture, small group discussion       | short note/ Viva voce          |                                       | Pharmacology                    |                           |
| IM17.11 | Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine  | K                 | KH                     | Y             | Lecture, Small Group discussion       | Written/ Viva voce             |                                       | Pharmacology                    |                           |
| IM17.12 | Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine  | K                 | KH                     | Y             | Lecture, Small Group discussion       | Written/ Viva voce             |                                       | Pharmacology                    |                           |
| IM17.13 | Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis  | K                 | KH                     | Y             | Lecture, Small Group discussion       | Written/ Viva voce             |                                       | Pharmacology                    |                           |
| IM17.14 | Counsel patients with migraine on lifestyle changes and need for prophylactic therapy   | A/C               | SH                     | N             | DOAP session                          | Skill Assessment               |                                       | Pharmacology                    |                           |
| IM19.8  | Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome                   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology                    |                           |
| IM19.9  | Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders                                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology                    | General Surgery           |
| IM20.1  | Enumerate the poisonous snakes of your area and describe the distinguishing marks of each   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Forensic Medicine, Pharmacology |                           |
| IM20.7  | Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti-snake venom              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology                    |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested Assessment<br>method       | Number<br>required<br>to certify<br>P | Vertical Integration               | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---|--------------------------------------|---------------------------------------|------------------------------------|---------------------------|
| IM20.8  | Describe the diagnosis, initial approach, stabilisation and therapy of scorpion envenomation   | K                 | KH                     | N             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pharmacology                       |                           |
| IM20.9  | Describe the diagnosis, initial approach, stabilisation and therapy of bee sting allergy   | K                 | KH                     | N             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pharmacology                       |                           |
| IM21.1  | Describe the initial approach to the stabilisation of the patient who presents with poisoning  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pharmacology                       |                           |
| IM21.2  | Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification                     | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine,<br>Pharmacology |                           |
| IM21.3  | Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine,<br>Pharmacology |                           |
| IM21.4  | Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy                               | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine,<br>Pharmacology |                           |
| IM21.5  | Observe and describe the functions and role of a poison center in suspected poisoning  | S                 | KH                     | Y             | DOAP session                                  | document in log book                 |                                       | Forensic Medicine,<br>Pharmacology |                           |
| IM21.6  | Describe the medico-legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico-legal report on a suspected poisoning | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | Forensic Medicine,<br>Pharmacology |                           |
| IM21.7  | Counsel family members of a patient with suspected poisoning about the clinical and medico-legal aspects with empathy  | A/C               | SH                     | Y             | DOAP session                                  | Skill assessment                     |                                       | Forensic Medicine,<br>Pharmacology |                           |
| IM22.3  | Describe the approach to the management of hypercalcemia   | K                 | KH                     | N             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pharmacology                       |                           |
| IM25.11 | Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis   | C                 | SH                     | Y             | DOAP session                                  | Skill assessment                     |                                       | Microbiology,<br>Pharmacology      |                           |

**Pediatrics**

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration                                 | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| PE13.5 | Propose a management plan for Fe Deficiency Anaemia  | S                 | SH                     | Y             | Bed side clinics, Skill lab           | Skill Assessment               |                                       | Pathology,<br>Pharmacology                           |                           |
| PE13.6 | Discuss the National Anaemia Control Program and its recommendations   | K                 | K                      | Y             | Lecture, Small group Discussion       | Written/ Viva voce             |                                       | Pharmacology,<br>Community Medicine                  |                           |
| PE14.1 | Discuss the risk factors, clinical features, diagnosis and management of Lead Poisoning                                      | K                 | KH                     | N             | Lecture, Small group Discussion       | Written/ Viva voce             |                                       | Pharmacology   |                           |
| PE14.3 | Discuss the risk factors, clinical features, diagnosis and management of Organo phosphorous poisoning                        | K                 | KH                     | N             | Lecture, Small group Discussion       | Written/ Viva voce             |                                       | Pharmacology   | General Medicine          |
| PE14.4 | Discuss the risk factors, clinical features, diagnosis and management of paracetamol Poisoning                               | K                 | KH                     | N             | Lecture, Small group Discussion       | Written/ Viva voce             |                                       | Pharmacology   |                           |
| PE24.5 | Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti- emetics in acute diarrheal diseases | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology,<br>Microbiology                        |                           |
| PE24.8 | Discuss the causes, clinical presentation and management of dysentery in children  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology,<br>Microbiology                        |                           |
| PE34.3 | Discuss the various regimens for management of Tuberculosis as per National Guidelines                                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Microbiology,<br>Community Medicine,<br>Pharmacology | Respiratory Medicine      |
| PE34.4 | Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program        | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Microbiology,<br>Community Medicine,<br>Pharmacology | Respiratory Medicine      |

**General Surgery**

|        |   |   |    |   |                                 |                    |  |                               |  |
|--------|---|---|----|---|---------------------------------|--------------------|--|-------------------------------|--|
| SU13.2 | Discuss the Principles of immunosuppressive therapy. Enumerate indications, describe surgical principles, management of organ transplantation | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  | Microbiology,<br>Pharmacology |  |
|--------|---|---|----|---|---------------------------------|--------------------|--|-------------------------------|--|

**Physical Medicine & Rehabilitation**

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration  |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|----------------------------|
| PM3.5  | Enumerate the indications and describe the therapies for spasticity including medications, serial casts, nerve blocks, botulinum toxin injections | K                 | KH                     | Y             | Lectures, Small group discussion      |                                |                                       | Pharmacology         | Pediatrics,<br>Orthopedics |
| PM7.6  | Enumerate the indications and describe the pharmacology and side effects of commonly used drugs in neuropathic bladder                            | K                 | KH                     | Y             | Lectures, Small group discussion      | Written / Viva voce            |                                       | Pharmacology         | General Medicine           |

#### Respiratory Medicine

|        |   |   |    |   |  |                       |  |  |  |
|--------|---|---|----|---|--|-----------------------|--|--|--|
| CT1.4  | Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs  | K | KH | Y | Lecture, Small group discussion                    | Written/ Viva voce    |  | Community Medicine,<br>Microbiology,<br>Pharmacology |  |
| CT1.14 | Describe and discuss the pharmacology of various antituberculous agents, their indications, contraindications, interactions and adverse reactions   | K | KH | Y | Lecture, Small group discussion                    | short note/ Viva voce |  | Pharmacology,<br>Microbiology                        |  |
| CT1.15 | Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and co-morbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS) | K | SH | Y | Bedside clinic, Small group discussion,<br>Lecture | Skill assessment      |  | Pharmacology,<br>Community Medicine                  |  |
| CT2.16 | Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilisers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy  | K | KH | Y | Lecture, Small group discussion                    | Written/ Viva voce    |  | Pharmacology   |  |

#### Orthopaedics

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested Assessment<br>method | Number<br>required<br>to certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------------|---------------------------|
| OR3.1  | Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections<br>a) Acute Osteomyelitis<br>b) Subacute osteomyelitis<br>c) Acute Suppurative arthritis<br>d) Septic arthritis & HIV infection<br>e) Spirochaetal infection<br>f) Skeletal Tuberculosis | K/S               | K/KH/S<br>H            | Y             | Lecture, Small group<br>Discussion, Video<br>assisted lecture | Written/ Viva voce/<br>OSCE    | –                                     | Pathology,<br>Microbiology | General surgery           |

# **PATHOLOGY (CODE: PA)**

| Number                                   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|-------------|---|---------------------------------|------------------------------------|----------------------|---------------------------|
| <b>PATHOLOGY</b>                         |   |                                     |                        |             |   |                                 |                                    |                      |                           |
| <b>Topic: Introduction to Pathology</b>  |   | <b>Number of competencies: (03)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                      |                           |
| PA1.1                                    | Describe the role of a pathologist in diagnosis and management of disease   | K                                   | K                      | Y           | Departmental orientation                                      | Written/ Viva voce              |                                    |                      |                           |
| PA1.2                                    | Enumerate common definitions and terms used in Pathology  | K                                   | K                      | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA1.3                                    | Describe the history and evolution of Pathology   | K                                   | K                      | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| <b>Topic: Cell Injury and Adaptation</b> |   | <b>Number of competencies: (08)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                      |                           |
| PA2.1                                    | Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance               | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA2.2                                    | Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA2.3                                    | Intracellular accumulation of fats, proteins, carbohydrates, pigments   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA2.4                                    | Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis          | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA2.5                                    | Describe and discuss pathologic calcifications, gangrene  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA2.6                                    | Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia                             | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |

| Number                           | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration |
|----------------------------------|--|-------------------------------------|------------------------|-------------|---|---------------------------------|------------------------------------|----------------------|---------------------------|
| PA2.7                            | Describe and discuss the mechanisms of cellular aging and apoptosis  | K                                   | KH                     | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA2.8                            | Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens   | S                                   | SH                     | Y           | DOAP session  | Skill assessment                |                                    |                      |                           |
| <b>Topic: Amyloidosis</b>        |  | <b>Number of competencies: (02)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                      |                           |
| PA3.1                            | Describe the pathogenesis and pathology of amyloidosis   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA3.2                            | Identify and describe amyloidosis in a pathology specimen  | S                                   | SH                     | N           | DOAP session  | Skill assessment                |                                    |                      |                           |
| <b>Topic: Inflammation</b>       |  | <b>Number of competencies:(04)</b>  |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                      |                           |
| PA4.1                            | Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events       | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery      |                           |
| PA4.2                            | Enumerate and describe the mediators of acute inflammation   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery      |                           |
| PA4.3                            | Define and describe chronic inflammation including causes, types, non-specific and granulomatous; and enumerate examples of each | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                      |                           |
| PA4.4                            | Identify and describe acute and chronic inflammation in gross and microscopic specimens  | S                                   | SH                     | Y           | DOAP session  | Skill assessment                |                                    |                      |                           |
| <b>Topic: Healing and repair</b> |  | <b>Number of competencies: (01)</b> |                        |             | <b>Number of procedures that require certification:(NIL)</b>  |                                 |                                    |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|----------------------|---------------------------|
| PA5.1   | Define and describe the process of repair and regeneration including wound healing and its types  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery      |                           |
| <b>Topic: Hemodynamic disorders</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification :(NIL)</span> |   |                   |                        |             |  |                                 |                                    |                      |                           |
| PA6.1   | Define and describe edema, its types, pathogenesis and clinical correlations  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine     |                           |
| PA6.2   | Define and describe hyperemia, congestion, hemorrhage   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    |                      |                           |
| PA6.3   | Define and describe shock, its pathogenesis and its stages  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery      |                           |
| PA6.4   | Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    |                      |                           |
| PA6.5   | Define and describe embolism and its causes and common types  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    |                      |                           |
| PA6.6   | Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    |                      |                           |
| PA6.7   | Identify and describe the gross and microscopic features of infarction in a pathologic specimen   | S                 | SH                     | Y           | DOAP session                           | Skill Assessment                |                                    |                      |                           |
| <b>Topic: Neoplastic disorders</b> <span style="float: right;">Number of competencies: (05)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>  |   |                   |                        |             |  |                                 |                                    |                      |                           |
| PA7.1   | Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, biologic, behaviour and spread. Differentiate between benign from malignant neoplasms | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    |                      |                           |
| PA7.2   | Describe the molecular basis of cancer  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    |                      |                           |



| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods      | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|--------------------------------------|------------------------------------|----------------------|---------------------------|
| PA7.3  | Enumerate carcinogens and describe the process of carcinogenesis   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    |                      |                           |
| PA7.4  | Describe the effects of tumor on the host including paraneoplastic syndrome                                    | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    |                      |                           |
| PA7.5  | Describe immunology and the immune response to cancer  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    |                      | Microbiology              |
| <b>Topic: Basic diagnostic cytology</b> <span style="float: right;">Number of competencies:(03)</span> <span style="float: right;">Number of procedures that require certification:(NIL)</span>  |  |                   |                        |             |  |                                      |                                    |                      |                           |
| PA8.1  | Describe the diagnostic role of cytology and its application in clinical care                                  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | General Surgery      |                           |
| PA8.2  | Describe the basis of exfoliative cytology including the technique & stains used                               | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce/ Skill assessment |                                    | General Surgery      |                           |
| PA8.3  | Observe a diagnostic cytology and its staining and interpret the specimen                                      | S                 | KH                     | Y           | DOAP session                           | Skill assessment                     |                                    |                      |                           |
| <b>Topic: Immunopathology and AIDS</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |             |  |                                      |                                    |                      |                           |
| PA9.1  | Describe the principles and mechanisms involved in immunity  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pediatrics           | Microbiology              |
| PA9.2  | Describe the mechanism of hypersensitivity reactions   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    |                      | Microbiology              |
| PA9.3  | Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    |                      | Microbiology              |
| PA9.4  | Define autoimmunity. Enumerate autoimmune disorders  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | General Medicine     |                           |
| PA9.5  | Define and describe the pathogenesis of systemic Lupus Erythematosus   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | General Medicine     |                           |





| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration           | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|--------------------------------|---------------------------|
| PA15.1  | Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Biochemistry, General Medicine |                           |
| PA15.2  | Describe laboratory investigations of macrocytic anemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA15.3  | Identify and describe the peripheral blood picture of macrocytic anemia  | S                 | SH                     | Y           | DOAP session                           | Skill assessment                |                                    |                                |                           |
| PA15.4  | Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| <b>Topic: Hemolytic anemia</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (01)</span> |  |                   |                        |             |  |                                 |                                    |                                |                           |
| PA16.1  | Define and classify hemolytic anemia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Biochemistry, General Medicine |                           |
| PA16.2  | Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Biochemistry, General Medicine |                           |
| PA16.3  | Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia              | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Biochemistry, General Medicine |                           |
| PA16.4  | Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia                        | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Biochemistry, General Medicine |                           |
| PA16.5  | Describe the peripheral blood picture in different hemolytic anaemias  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA16.6  | Prepare a peripheral blood smear and identify hemolytic anaemia from it  | S                 | P                      | Y           | DOAP session                           | Skill assessment                | 1                                  |                                |                           |
| PA16.7  | Discribe the correct technique to perform a cross match  | S                 | SH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    |                                |                           |
| <b>Topic: Aplastic anemia</b> <span style="float: right;">Number of competencies: (02)</span> <span style="float: right;">Number of procedures that require certification:(NIL)</span>  |  |                   |                        |             |  |                                 |                                    |                                |                           |

| Number                              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                       | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration |
|-------------------------------------|--|-------------------------------------|------------------------|-------------|--|---------------------------------|------------------------------------|----------------------|---------------------------|
| PA 17.1                             | Enumerate the etiology, pathogenesis and findings in aplastic anemia   | K                                   | K                      | N           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | General Medicine     |                           |
| PA17.2                              | Enumerate the indications and describe the findings in bone marrow aspiration and biopsy                                   | K                                   | K                      | N           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | General Medicine     |                           |
| <b>Topic: Leukocyte disorders</b>   |  | <b>Number of competencies: (02)</b> |                        |             | <b>Number of procedures that require certification:(NIL)</b> |                                 |                                    |                      |                           |
| PA18.1                              | Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions                         | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    |                      |                           |
| PA 18.2                             | Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    |                      |                           |
| <b>Topic: Lymph node and spleen</b> |  | <b>Number of competencies: (07)</b> |                        |             | <b>Number of procedures that require certification:(NIL)</b> |                                 |                                    |                      |                           |
| PA19.1                              | Enumerate the causes and describe the differentiating features of lymphadenopathy  | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | General Surgery      |                           |
| PA19.2                              | Describe the pathogenesis and pathology of tuberculous lymphadenitis   | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | General Surgery      |                           |
| PA19.3                              | Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen                        | S                                   | SH                     | Y           | DOAP session   | Skill assessment                |                                    |                      |                           |
| PA19.4                              | Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma  | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | General Surgery      |                           |
| PA19.5                              | Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen                               | S                                   | SH                     | Y           | DOAP session   | Skill assessment                |                                    | General Surgery      |                           |



| Number                               | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration                 | Horizontal<br>Integration |
|--------------------------------------|---|-------------------------------------|------------------------|-------------|---|---------------------------------|------------------------------------|--------------------------------------|---------------------------|
| PA22.4                               | Enumerate blood components and describe their clinical uses   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery,<br>General Medicine |                           |
| PA22.5                               | Enumerate and describe infections transmitted by blood transfusion  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                                      | Microbiology              |
| PA22.6                               | Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     |                           |
| PA22.7                               | Enumerate the indications and describe the principles and procedure of autologous transfusion   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                                      |                           |
| <b>Topic: Clinical Pathology</b>     |   | <b>Number of competencies: (03)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                                      |                           |
| PA23.1                               | Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen                  | S                                   | SH                     | Y           | DOAP session  | Skill Assessment                |                                    |                                      |                           |
| PA23.2                               | Describe abnormal findings in body fluids in various disease states   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                                      |                           |
| PA23.3                               | Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests | S                                   | SH                     | Y           | DOAP session  | Skill Assessment                |                                    |                                      |                           |
| <b>Topic: Gastrointestinal tract</b> |   | <b>Number of competencies: (07)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                                      |                           |
| PA24.1                               | Describe the etiology, pathogenesis, pathology and clinical features of oral cancers  | K                                   | KH                     | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | Dentistry                            |                           |
| PA24.2                               | Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease                             | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     |                           |
| PA24.3                               | Describe and identify the microscopic features of peptic ulcer  | S                                   | SH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration              | Horizontal<br>Integration |
|---|---|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|-----------------------------------|---------------------------|
| PA24.4  | Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery                   |                           |
| PA24.5  | Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery                   |                           |
| PA24.6  | Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery                   |                           |
| PA24.7  | Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery                   |                           |
| <b>Topic: Hepatobiliary system</b> <span style="margin-left: 200px;"><b>Number of competencies: (06)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (01)</b></span> |   |                   |                        |             |  |                                 |                                    |                                   |                           |
| PA25.1  | Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Biochemistry, General Medicine    |                           |
| PA25.2  | Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine, General Surgery |                           |
| PA25.3  | Describe the etiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine                  |                           |
| PA25.4  | Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine, General Surgery |                           |
| PA25.5  | Describe the etiology, pathogenesis and complications of portal hypertension  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine, General Surgery |                           |
| PA25.6  | Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests  | S                 | P                      | Y           | DOAP session                           | Skill assessment                | 1                                  | General Medicine                  |                           |



| Number                              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration                 | Horizontal<br>Integration |
|-------------------------------------|---|-------------------------------------|------------------------|-------------|---|---------------------------------|------------------------------------|--------------------------------------|---------------------------|
| <b>Topic: Respiratory system</b>    |   | <b>Number of competencies: (07)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                                      |                           |
| PA26.1                              | Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     | Microbiology              |
| PA26.2                              | Describe the etiology, gross and microscopic appearance and complications of lung abscess   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     | Microbiology              |
| PA26.3                              | Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | Physiology, General Medicine         | Microbiology              |
| PA26.4                              | Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     | Microbiology              |
| PA26.5                              | Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease                         | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce             |                                    | General Medicine, Community Medicine |                           |
| PA26.6                              | Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance,metastases and complications of tumors of the lung and pleura | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     |                           |
| PA26.7                              | Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma                                     | K                                   | KH                     | N           | Lecture, Small group discussion                               | Written / Viva voce             |                                    | General Medicine, Community Medicine |                           |
| <b>Topic: Cardiovascular system</b> |   | <b>Number of competencies: (10)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                                      |                           |
| PA27.1                              | Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     |                           |
| PA27.2                              | Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine                     |                           |

| Number                      | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration         | Horizontal<br>Integration |
|-----------------------------|--|-------------------------------------|------------------------|-------------|---|---------------------------------|------------------------------------|------------------------------|---------------------------|
| PA27.3                      | Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine, Physiology |                           |
| PA27.4                      | Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine             | Microbiology              |
| PA27.5                      | Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease           | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine             |                           |
| PA27.6                      | Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine             | Microbiology              |
| PA27.7                      | Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine             |                           |
| PA27.8                      | Interpret abnormalities in cardiac function testing in acute coronary syndromes  | S                                   | SH                     | Y           | DOAP session  | Skill Assessment                |                                    | Physiology, General Medicine |                           |
| PA27.9                      | Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies   | K                                   | KH                     | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine, Physiology |                           |
| PA27.10                     | Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system  | K                                   | KH                     | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine             | Microbiology              |
| <b>Topic: Urinary Tract</b> |  | <b>Number of competencies: (16)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                              |                           |
| PA28.1                      | Describe the normal histology of the kidney  | K                                   | K                      | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                              |                           |
| PA28.2                      | Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    |                              |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration           | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|--------------------------------|---------------------------|
| PA28.3  | Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA28.4  | Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA28.5  | Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, General Medicine   |                           |
| PA28.6  | Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA28.7  | Enumerate and describe the findings in glomerular manifestations of systemic disease  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA28.8  | Enumerate and classify diseases affecting the tubular interstitium  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA28.9  | Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |
| PA28.10 | Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy                             | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Human Anatomy, General Surgery |                           |
| PA28.11 | Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney                          | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine               |                           |

| Number                           | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P              | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration         | Horizontal<br>Integration |
|----------------------------------|---|-------------------|-------------------------------------|-------------|---|---------------------------------|------------------------------------|------------------------------|---------------------------|
| PA28.12                          | Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney | K                 | KH                                  | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine, Pediatrics |                           |
| PA28.13                          | Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone disease and obstructive uropathy         | K                 | KH                                  | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery              |                           |
| PA28.14                          | Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors  | K                 | KH                                  | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | Pediatrics                   |                           |
| PA28.15                          | Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies  | K                 | KH                                  | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Medicine             |                           |
| PA28.16                          | Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors  | K                 | KH                                  | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery              |                           |
| <b>Topic: Male Genital Tract</b> |   |                   |                                     |             |   |                                 |                                    |                              |                           |
|                                  |   |                   | <b>Number of competencies: (05)</b> |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                    |                              |                           |
| PA29.1                           | Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors                                      | K                 | KH                                  | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery              |                           |
| PA29.2                           | Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis  | K                 | KH                                  | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery              |                           |
| PA29.3                           | Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia  | K                 | KH                                  | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery              |                           |
| PA29.4                           | Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate   | K                 | KH                                  | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                    | General Surgery              |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration     | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|--------------------------|---------------------------|
| PA29.5   | Describe the etiology, pathogenesis, pathology and progression of prostatitis  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery          |                           |
| <b>Topic: Female Genital Tract</b> <span style="margin-left: 200px;"><b>Number of competencies: (09)</b></span> <span style="margin-left: 100px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |             |  |                                 |                                    |                          |                           |
| PA30.1   | Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the cervix                | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |
| PA30.2   | Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium                         | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |
| PA30.3   | Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas      | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |
| PA30.4   | Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors         | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |
| PA30.5   | Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |
| PA30.6   | Describe the etiology and morphologic features of cervicitis   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |
| PA30.7   | Describe the etiology, hormonal dependence, features and morphology of endometriosis   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |
| PA30.8   | Describe the etiology and morphologic features of adenomyosis  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration   | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|--|---------------------------|
| PA30.9   | Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Obstetrics & Gynaecology                                     |                           |
| <b>Topic: Breast</b> <span style="margin-left: 150px;"><b>Number of competencies: (04)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification: (NIL)</b></span>           |  |                   |                        |             |  |                                 |                                    |  |                           |
| PA31.1   | Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Human Anatomy, General Surgery                               |                           |
| PA31.2   | Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery  |                           |
| PA31.3   | Describe and identify the morphologic and microscopic features of carcinoma of the breast  | S                 | SH                     | N           | DOAP session                           | Skill Assessment                |                                    | General Surgery  |                           |
| PA31.4   | Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pediatrics, General Medicine                                 |                           |
| <b>Topic: Endocrine system</b> <span style="margin-left: 150px;"><b>Number of competencies: (09)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |             |  |                                 |                                    |  |                           |
| PA32.1   | Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Human Anatomy, Physiology, General Medicine, General Surgery |                           |
| PA32.2   | Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis                              | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, General Medicine                                 |                           |
| PA32.3   | Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism  | K                 | KH                     | Y           | Lecture, Small group                   | Written/ Viva voce              |                                    | Physiology, General Medicine                                 |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration   | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|--|---------------------------|
| PA32.4   | Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, General Medicine                                 |                           |
| PA32.5   | Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism                                    | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, General Medicine                                 |                           |
| PA32.6   | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer                     | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Surgery  |                           |
| PA32.7   | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency                                | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, General Medicine                                 |                           |
| PA32.8   | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome                                   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, General Medicine                                 |                           |
| PA32.9   | Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Human Anatomy, Physiology, General Medicine, General Surgery |                           |
| <b>Topic: Bone and soft tissue</b> <span style="margin-left: 200px;"><b>Number of competencies: (05)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |             |  |                                 |                                    |  |                           |
| PA33.1   | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis                     | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Human Anatomy, Orthopaedics                                  | Microbiology              |
| PA33.2   | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors        | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Orthopaedics   |                           |
| PA33.3   | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Orthopaedics   |                           |

| Number                               | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                       | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration               | Horizontal<br>Integration |
|--------------------------------------|---|-------------------------------------|------------------------|-------------|--|---------------------------------|------------------------------------|------------------------------------|---------------------------|
| PA33.4                               | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone                          | K                                   | KH                     | N           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | Orthopaedics                       |                           |
| PA33.5                               | Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis | K                                   | KH                     | N           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | General Medicine                   |                           |
| <b>Topic: Skin</b>                   |   | <b>Number of competencies: (04)</b> |                        |             | <b>Number of procedures that require certification:(NIL)</b> |                                 |                                    |                                    |                           |
| PA34.1                               | Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin  | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | Dermatology, Venereology & Leprosy |                           |
| PA34.2                               | Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin   | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | Dermatology, Venereology & Leprosy |                           |
| PA34.3                               | Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma    | K                                   | KH                     | N           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | Dermatology, Venereology & Leprosy |                           |
| PA34.4                               | Identify, distinguish and describe common tumors of the skin  | S                                   | SH                     | N           | DOAP session   | Skill Assessment                |                                    | Dermatology, Venereology & Leprosy |                           |
| <b>Topic: Central Nervous System</b> |   | <b>Number of competencies:(03)</b>  |                        |             | <b>Number of procedures that require certification: (01)</b> |                                 |                                    |                                    |                           |
| PA35.1                               | Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis  | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | General Medicine                   | Microbiology              |
| PA35.2                               | Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors  | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written/ Viva voce              |                                    | Pediatrics                         |                           |



| Number | COMPETENCY<br>The student should be able to                       | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|----------------------|---------------------------|
| PA35.3 | Identify the etiology of meningitis based on given CSF parameters | S                 | P                      | Y           | DOAP session                           | Skill Assessment                | 1                                  | General Medicine     | Microbiology              |

**Topic: Eye**

**Number of competencies: (01)**

**Number of procedures that require certification:(NIL)**

|        |  |   |    |   |                                 |                    |  |               |  |
|--------|--|---|----|---|---------------------------------|--------------------|--|---------------|--|
| PA36.1 | Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma | K | KH | N | Lecture, Small group discussion | Written/ Viva voce |  | Ophthalmology |  |
|--------|--|---|----|---|---------------------------------|--------------------|--|---------------|--|

**Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.**

**Column D: K – Knows, KH - Knows How, S - Shows how, P- performs independently,**

**Column F: DOAP session – Demonstrate, Observe, Assess, Perform.**

**Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**

**Integration**

**Human Anatomy**

|        |   |     |    |   |                    |                           |  |           |            |
|--------|---|-----|----|---|--------------------|---------------------------|--|-----------|------------|
| AN5.8  | Define thrombosis, infarction & aneurysm  | K   | KH | N | Lecture            | Written                   |  | Pathology | Physiology |
| AN66.2 | Describe the ultrastructure of connective tissue  | K   | KH | N | Lecture, Practical | Written                   |  | Pathology |            |
| AN70.1 | Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini   | K/S | SH | Y | Lecture, Practical | Written/ skill assessment |  | Pathology |            |
| AN70.2 | Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function | K/S | SH | Y | Lecture, Practical | Written/ skill assessment |  | Pathology |            |
| AN71.1 | Identify bone under the microscope, Classify various types and describe the structure-function correlation of the same                                    | K/S | SH | Y | Lecture, Practical | Written/ skill assessment |  | Pathology |            |

| Number              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                    | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration           | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|-------------|---|---------------------------------|------------------------------------|--------------------------------|---------------------------|
| AN71.2              | Identify cartilage under the microscope & describe various types and structure- function correlation of the same<br>describe various types and structure-function correlation of the same | K/S               | SH                     | Y           | Lecture, Practical  | Written/ skill assessment       |                                    | Pathology                      |                           |
| <b>Physiology</b>   |   |                   |                        |             |   |                                 |                                    |                                |                           |
| PY1.4               | Describe apoptosis – programmed cell death  | K                 | KH                     | Y           | Lecture, Small group discussion                           | Written/ Viva voce              |                                    | Pathology                      |                           |
| PY2.5               | Describe different types of anemia & Jaundice   | K                 | KH                     | Y           | Lecture, Small group discussion                           | Written/ Viva voce              |                                    | Pathology                      | Biochemistry              |
| PY2.8               | Describe the physiological basis of hemostasis and anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)   | K                 | KH                     | Y           | Lecture, Small group discussion                           | Written/ Viva voce              |                                    | Pathology                      |                           |
| PY2.9               | Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion  | K                 | KH                     | Y           | Lecture, Small group discussion, ECE- Visit to blood bank | Written/ Viva voce              |                                    | Pathology                      |                           |
| PY2.11              | Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT  | S                 | SH                     | Y           | DOAP sessions   | Practical/OSPE/ viva voce       |                                    | Pathology                      |                           |
| PY2.12              | Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc  | K                 | KH                     | Y           | Demonstration   | Written/ Viva voce              |                                    | Pathology                      |                           |
| PY2.13              | Describe steps for reticulocyte and platelet count  | K                 | KH                     | Y           | Demonstration sessions                                    | Written/ Viva voce              |                                    | Pathology                      |                           |
| PY3.6               | Describe the pathophysiology of Myasthenia gravis   | K                 | KH                     | Y           | Lecture, Small group discussion                           | Written/ Viva voce              |                                    | Pathology                      |                           |
| <b>Biochemistry</b> |   |                   |                        |             |   |                                 |                                    |                                |                           |
| BI2.4               | Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes  | K                 | KH                     | Y           | Lecture, small group discussions                          | Written/ Viva voce              |                                    | Pathology,<br>General Medicine |                           |

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|--------|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|--------------------------------|------------------------------|
| BI2.5  | Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions   | K                 | KH                     | Y           | Lecture, small group discussions               | Written/ Viva voce              |                                    | Pathology,<br>General Medicine |                              |
| BI2.6  | Discuss use of enzymes in laboratory investigations (Enzyme-based assays)  | K                 | KH                     | Y           | Lecture, Small group discussion                | Written/ Viva voce              |                                    | Pathology,<br>General Medicine |                              |
| BI2.7  | Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions       | K                 | KH                     | Y           | Lecture, Small group discussion /DOAP sessions | Written/ Viva voce              |                                    | Pathology,<br>General Medicine |                              |
| BI3.8  | Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.  | K                 | KH                     | Y           | Lecture, Small group discussion                | Written/ Viva voce              |                                    | Pathology, General<br>Medicine |                              |
| BI5.2  | Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies | K                 | KH                     | Y           | Lecture, Small group discussions               | Written/ Viva voce              |                                    | Pathology, General<br>Medicine | Physiology                   |
| BI6.11 | Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism               | K                 | KH                     | Y           | Lecture, Small group discussions               | Written/ Viva voce              |                                    | Pathology, General<br>Medicine | Physiology                   |
| BI6.12 | Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance                    | K                 | KH                     | Y           | Lecture, Small group discussions               | Written/ Viva voce              |                                    | Pathology, General<br>Medicine | Physiology                   |
| BI6.13 | Describe the functions of the kidney, liver, thyroid and adrenal glands.   | K                 | KH                     | Y           | Lecture, Small group discussions               | Written/ Viva voce              |                                    | Pathology, General<br>Medicine | Physiology,<br>Human Anatomy |
| BI6.14 | Describe the tests that are commonly done in clinical practice to assess the functions of kidney, liver, thyroid and adrenal glands              | K                 | KH                     | Y           | Lecture, Small group discussions               | Written/ Viva voce              |                                    | Pathology, General<br>Medicine | Physiology,<br>Human Anatomy |

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|--------|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|--|---------------------------|
| BI6.15 | Describe the abnormalities of kidney, liver, thyroid and adrenal glands  | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | Pathology, General Medicine                          | Physiology, Human Anatomy |
| BI7.7  | Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | General Medicine, Pathology                          |                           |
| BI8.1  | Discuss the importance of various dietary components and explain importance of dietary fibre   | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | General Medicine, Pediatrics, Pathology              |                           |
| BI8.2  | Describe the types and causes of protein energy malnutrition and its effects   | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | General Medicine, Pediatrics, Pathology              |                           |
| BI8.4  | Describe the causes (including dietary habits), effects and health risks associated with being overweight/obesity                              | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | General Medicine, Pathology                          |                           |
| BI8.5  | Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance)         | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | Community Medicine, General Medicine, Pediatrics     |                           |
| BI10.1 | Describe the cancer initiation, promotion oncogenes & oncogene activation  | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| BI10.2 | Describe various biochemical tumor markers and the biochemical basis of cancer therapy   | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| BI10.3 | Describe the cellular and humoral components of the immune system & describe the types and structure of antibody                               | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | Obstetrics & Gynaecology, General Surgery, Pathology |                           |

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| BI10.4              | Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses   | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | General Medicine, Pathology         | Physiology                |
| BI10.5              | Describe antigens and concepts involved in vaccine development  | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | Pathology, Pediatrics, Microbiology |                           |
| BI11.17             | Explain the basis and rationale of biochemical tests done in the following conditions: diabetes mellitus, dyslipidemia, myocardial infarction, renal failure, gout, proteinuria, nephrotic syndrome, edema, jaundice, liver diseases, pancreatitis, disorders of acid-base balance, thyroid disorders | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                    | General Medicine, Pathology         |                           |
| <b>Microbiology</b> |   |                   |                        |             |  |                                 |                                    |                                     |                           |
| MI1.7               | Describe the immunological mechanisms in health   | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                    |                                     | Pathology                 |
| MI1.8               | Describe the mechanisms of immunity and response of the host immune system to infections  | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                    | Pediatrics                          | Pathology                 |
| MI2.1               | Describe the etiologic agents in rheumatic fever and their diagnosis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine                    | Pathology                 |
| MI2.2               | Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | General Medicine                    | Pathology                 |
| MI2.3               | Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis  | S                 | SH                     | Y           | DOAP session                           | Skill assessment                |                                    | General Medicine                    | Pathology                 |
| MI2.4               | List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ viva voce              |                                    | General Medicine                    | Pathology                 |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods  | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration            | Horizontal<br>Integration  |
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| MI2.5  | Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kala azar, malaria, filariasis and other common parasites prevalent in India                 | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ viva voce              |                                    | General Medicine                | Pathology                  |
| MI2.7  | Describe the epidemiology, the etio-pathogenesis, evolution, complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV                            | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | General Medicine                | Pathology                  |
| MI3.1  | Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features, and diagnostic modalities of these agents               | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | General Medicine,<br>Pediatrics | Pathology                  |
| MI3.3  | Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them   | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | General Medicine                | Pharmacology,<br>Pathology |
| MI3.4  | Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness   | S                 | KH                     | Y           | DOAP session                            | Skill assessment                |                                    | General Medicine                | Pathology                  |
| MI3.6  | Describe the etio-pathogenesis of Acid Peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD.                                       | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | General Medicine                | Pharmacology,<br>Pathology |
| MI3.7  | Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis, and prevention of viral hepatitis | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | General Medicine                | Pathology                  |
| MI3.8  | Choose the appropriate laboratory test in the diagnosis of viral hepatitis   | K                 | KH                     | Y           | small group discussion, Case discussion | Written/ Viva voce/ OSPE        |                                    | General Medicine                | Pathology                  |
| MI5.1  | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis  | K                 | KH                     | Y           | Lecture                                 | Written/ Viva voce              |                                    | General Medicine,<br>Pediatrics | Pathology                  |
| MI5.2  | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis.   | K                 | KH                     | Y           | Lecture                                 | Written/ Viva voce              |                                    | General Medicine,<br>Pediatrics | Pathology                  |

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| MI8.2                                     | Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis        | K                 | KH                     | Y           | Lecture  | Written/ Viva voce              |                                    | General Medicine             | Pathology                 |
| MI8.3                                     | Describe the role of oncogenic viruses in the evolution of virus associated malignancy  | K                 | KH                     | Y           | Lecture  | Written                         |                                    | General Medicine             | Pathology                 |
| <b>Community Medicine</b>                 |   |                   |                        |             |  |                                 |                                    |                              |                           |
| CM8.1                                     | Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases | K                 | KH                     | Y           | Small group discussion, Lecture                        | Written/ Viva voce              |                                    | General Medicine, Pediatrics | Microbiology, Pathology   |
| <b>Forensic Medicine &amp; Toxicology</b> |   |                   |                        |             |  |                                 |                                    |                              |                           |
| FM2.1                                     | Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical death and Brainstem death               | K                 | KH                     | Y           | Lecture, Small group discussion                        | Written/viva voce               |                                    |                              | Pathology                 |
| FM2.2                                     | Describe and discuss natural and unnatural deaths   | K                 | KH                     | Y           | Lecture, Small group discussion                        | Written/viva voce               |                                    |                              | Pathology                 |
| FM2.3                                     | Describe and discuss issues related to sudden natural deaths  | K                 | KH                     | Y           | Lecture, Small group discussion                        | Written/viva voce               |                                    |                              | Pathology                 |
| FM2.5                                     | Discuss moment of death, modes of death-coma, asphyxia and syncope  | K                 | KH                     | Y           | Lecture, Small group discussion                        | Written/viva voce               |                                    |                              | Pathology                 |
| FM2.11                                    | Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination           | K                 | KH                     | Y           | Lecture, Small group discussion, Autopsy, DOAP session | Written/viva voce/ OSPE         |                                    |                              | Pathology                 |
| FM2.12                                    | Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination                                 | K                 | KH                     | Y           | Lecture, Small group discussion, Autopsy, DOAP session | Written/viva voce/ OSPE         |                                    |                              | Pathology                 |

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| FM2.13  | Describe and discuss obscure autopsy   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/viva voce                  |                                    |                                     | Pathology                 |
| FM3.28  | Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion  | K                 | K/KH                   | Y           | Lecture, Small group discussion        | Written/viva voce                  |                                    | Obstetrics & Gynaecology, Pathology |                           |
| FM6.1   | Describe different types of specimens and tissues to be collected both in the living and dead: body fluids (blood, urine, semen, faeces, saliva), skin, nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting. Describe Locard's Exchange Principle | K                 | K/KH                   | Y           | Lecture, Small group discussion        | Written/viva voce                  |                                    |                                     | Pathology                 |
| FM14.7  | Demonstrate & identify that a particular stain is blood and identify the species of its origin   | S                 | KH                     | Y           | Small group discussion, Lecture        | Log book/ skill station/ Viva voce |                                    | Forensic Medicine, Physiology       |                           |
| FM14.8  | Demonstrate the correct technique to perform and identify ABO & RH blood group of a person   | S                 | SH                     | Y           | Small group discussion, DOAP session   | Log book/ skill station/ Viva voce |                                    | Forensic Medicine, Physiology       |                           |
| <b>Dermatology, Venereology &amp; Leprosy</b> |  |                   |                        |             |  |                                    |                                    |                                     |                           |
| DR12.7  | Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions  | S                 | SH                     | Y           | Bedside clinic                         | Skill assessment                   | 1                                  | General Medicine                    | Pathology, Microbiology   |
| DR14.1  | Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                 |                                    |                                     | Microbiology, Pathology   |
| DR16.1  | Identify and distinguish skin lesions of SLE   | S                 | SH                     | Y           | Bedside clinic discussion              | Skill assessment                   | 2                                  | General Medicine                    | Pathology                 |
| DR16.2  | Identify and distinguish Raynaud's phenomenon  | S                 | SH                     | Y           | Bedside clinic discussion              | Skill assessment                   | 2                                  | General Medicine                    | Pathology                 |
| <b>Anesthesiology</b>                         |  |                   |                        |             |  |                                    |                                    |                                     |                           |



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| AS9.4                   | Enumerate blood products and describe the use of blood products in the preoperative period                                | K                 | KH                     | Y           | Lecture, Small group discussion, DOAP session | Written/ Viva voce              |                                    | Pathology                | General Surgery           |
| <b>ENT</b>              |   |                   |                        |             |   |                                 |                                    |                          |                           |
| EN1.2                   | Describe the pathophysiology of common diseases in ENT  | K                 | KH                     | Y           | Lecture, Small group discussion, DOAP session | Written/ Viva voce              |                                    | Pathology                |                           |
| <b>Ophthalmology</b>    |   |                   |                        |             |   |                                 |                                    |                          |                           |
| OP7.2                   | Describe and discuss the aetio-pathogenesis, stages of maturation and complications of cataract                           | K                 | KH                     | Y           | Lecture, Small group discussion               | Written/ Viva voce              |                                    | Pathology                |                           |
| OP8.1                   | Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina                   | K                 | KH                     | Y           | Lecture, Small group discussion               | Written/ Viva voce              |                                    | Human Anatomy, Pathology |                           |
| <b>Dentistry</b>        |   |                   |                        |             |   |                                 |                                    |                          |                           |
| DE4.1                   | Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity | K                 | K                      | N           | Lecture, Small group discussion               | Viva voce                       |                                    | Pathology                | ENT                       |
| DE4.2                   | Discuss the role of etiological factors in the formation of precancerous /cancerous lesions                               | K                 | KH                     | Y           | Lecture, Small group discussion               | Viva voce                       |                                    | Pathology                | ENT                       |
| DE4.3                   | Identify potential pre-cancerous / cancerous lesions  | S                 | SH                     | N           | Observation, Bed side clinics                 | Skill assessment                |                                    | Pathology                | ENT                       |
| DE4.4                   | Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.           | A/C               | SH                     | Y           | DOAP session                                  | Document in Log book            | 2                                  | Pathology                | ENT                       |
| <b>General Medicine</b> |   |                   |                        |             |   |                                 |                                    |                          |                           |

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| IM1.1  | Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology               |                           |
| IM1.2  | Describe and discuss the genetic basis of some forms of heart failure   | K                 | KH                     | N           | Lecture, Small group discussion        | Written                         |                                    | Pathology, Physiology               |                           |
| IM1.3  | Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology, Microbiology |                           |
| IM1.4  | Stage heart failure   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology               |                           |
| IM1.5  | Describe, discuss and differentiate the processes involved in R vs L heart failure, systolic vs diastolic failure   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology               |                           |
| IM1.6  | Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology               |                           |
| IM1.7  | Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias, anemia, thyrotoxicosis, dietary factors drugs etc.   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology               |                           |
| IM1.8  | Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology               |                           |
| IM1.9  | Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Microbiology             |                           |

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|--------|---|-------------------|------------------------|-------------|--|---|------------------------------------|---|---------------------------|
| IM2.1  | Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                      |                                    | Pathology, Physiology, Community Medicine |                           |
| IM2.2  | Discuss the aetiology of risk factors both modifiable and non-modifiable of atherosclerosis and IHD   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                      |                                    | Pathology, Physiology                     |                           |
| IM2.4  | Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                      |                                    | Pathology, Physiology                     |                           |
| IM2.5  | Define the various acute coronary syndromes and describe their evolution, natural history and outcomes  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                      |                                    | Pathology                                 |                           |
| IM3.1  | Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia   | K                 | K                      | Y           | Lecture , Small group discussion       | short note/ Viva voce                   |                                    | Human Anatomy, Pathology, Microbiology    |                           |
| IM3.3  | Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia   | K                 | K                      | Y           | Lecture, Small group discussion        | short note/ Viva voce                   |                                    | Pathology, Microbiology                   |                           |
| IM4.5  | Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies  | K                 | KH                     | Y           | Lecture, Small group discussion        | written                                 |                                    | Pathology, Microbiology                   |                           |
| IM4.12 | Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC | K                 | SH                     | Y           | Bed side clinic, Skill assessment      | Skill assessment                        |                                    | Pathology, Microbiology                   |                           |
| IM4.16 | Enumerate the indications and describe the findings in tests of inflammation and specific rheumatologic tests, serologic testing for pathogens including HIV, bone marrow aspiration and biopsy   | K                 | KH                     | N           | Lecture, Small group discussion        | written                                 |                                    | Pathology                                 |                           |
| IM4.17 | Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment   | S                 | SH                     | N           | skills lab                             | log book documentation/<br>DOAP session |                                    | Pathology                                 |                           |

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| IM5.1  | Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/Viva voce               |                                    | Pathology, Physiology   |                           |
| IM5.2  | Describe and discuss the aetiology and pathophysiology of liver injury  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| IM5.3  | Describe and discuss the pathologic changes in various forms of liver disease   | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology               |                           |
| IM5.4  | Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis   | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Microbiology |                           |
| IM5.5  | Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology               |                           |
| IM5.6  | Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology               |                           |
| IM5.7  | Enumerate and describe the causes and pathophysiology of drug induced liver injury  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Pharmacology |                           |
| IM5.12 | Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases  | S                 | KH                     | Y           | Bedside clinic, DOAP session           | Skill assessment                |                                    | Pathology               |                           |
| IM5.14 | Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology   | S                 | SH                     | Y           | Bedside clinic, Small group discussion | viva voce/ written              |                                    | Pathology, Microbiology |                           |
| IM6.5  | Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies   | K                 | KH                     | Y           | Lecture, Small group discussion        | short notes/ Viva voce          |                                    | Pathology, Microbiology |                           |
| IM6.6  | Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions  | K                 | KH                     | Y           | Lecture, Small group discussion        | short notes/ Viva voce          |                                    | Pathology, Microbiology |                           |

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|--------|---|-------------------|------------------------|-------------|---|---------------------------------|------------------------------------|-------------------------|---------------------------|
| IM6.10 | Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC                    | K                 | KH                     | Y           | Bed side clinic, DOAP session, Small group discussion | written/ Skill assessment       |                                    | Pathology, Microbiology |                           |
| IM6.19 | Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections                                      | K/C               | K                      | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology, Microbiology |                           |
| IM7.1  | Describe the pathophysiology of autoimmune disease  | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM7.2  | Describe the genetic basis of autoimmune disease  | K                 | KH                     | N           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM7.16 | Enumerate the indications for and interpret the results of: CBC, anti CCP (Anti-cyclic citrullinated peptide), RA, ANA, DNA and other tests of autoimmunity | K                 | SH                     | Y           | Bed side clinic, small group                          | Skill assessment/ written       |                                    | Pathology               |                           |
| IM8.1  | Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| IM8.2  | Describe and discuss the pathophysiology of hypertension  | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| IM8.3  | Describe and discuss the genetic basis of hypertension  | K                 | KH                     | N           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM8.4  | Define and classify hypertension  | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM8.5  | Describe and discuss the differences between primary and secondary hypertension   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM8.7  | Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM8.8  | Describe, discuss and identify target organ damage due to hypertension  | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |

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|--------|--|-------------------|------------------------|-------------|---|--------------------------------------|------------------------------------|----------------------|---------------------------|
| IM9.1  | Define, describe and classify anemia based on red blood cell size and reticulocyte count                                     | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM9.2  | Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia             | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM9.6  | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology                | S                 | SH                     | Y           | Bed side clinic, DOAP session, Small group discussion | Skill assessment/ written            |                                    | Pathology            |                           |
| IM9.7  | Describe the appropriate diagnostic work up based on the presumed aetiology  | S                 | SH                     | Y           | Bed side clinic, DOAP session                         | Skill assessment/ written            |                                    | Pathology            |                           |
| IM9.8  | Describe and discuss the meaning and utility of various components of the hemogram   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce/ Skill assessment |                                    | Pathology            |                           |
| IM9.9  | Describe and discuss the various tests for iron deficiency   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce/ Skill assessment |                                    | Pathology            |                           |
| IM9.10 | Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate. | S                 | SH                     | Y           | Bed side clinic, DOAP session                         | Skill assessment/ written            |                                    | Pathology            |                           |
| IM9.11 | Describe, perform and interpret a peripheral smear and stool occult blood  | S                 | SH                     | P           | Bed side clinic, DOAP session                         | Skill assessment/ written            |                                    | Pathology            |                           |
| IM9.12 | Describe the indications and interpret the results of a bone marrow aspirations and biopsy                                   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce/ Skill assessment |                                    | Pathology            |                           |
| IM9.13 | Describe, develop a diagnostic plan to determine the aetiology of anemia   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce/ Skill assessment |                                    | Pathology            |                           |
| IM9.18 | Describe the indications for blood transfusion and the appropriate use of blood components                                   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce/ Skill assessment |                                    | Pathology            |                           |
| IM10.1 | Define, describe and differentiate between acute and chronic renal failure   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce                   |                                    | Pathology            |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods      | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|--------------------------------------|------------------------------------|----------------------|---------------------------|
| IM10.2  | Classify, describe and differentiate the pathophysiologic causes of acute renal failure  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.3  | Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.4  | Describe the evolution, natural history and treatment of ARF   | K                 | KH                     | Y           | Lecture, small group                   | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.5  | Describe and discuss the aetiology of CRF  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.6  | Stage Chronic Kidney Disease   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.7  | Describe and discuss the pathophysiology and clinical findings of uraemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.8  | Classify, describe and discuss the significance of proteinuria in CKD  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.9  | Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.10 | Describe and discuss the association between CKD glycemia and hypertension   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.11 | Describe and discuss the relationship between CAD risk factors and CKD and in dialysis   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |
| IM10.16 | Enumerate the indications for and interpret the results of: renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap            | K                 | KH                     | Y           | DOAP session, Small group discussion   | Skill assessment/ Written/ Viva voce |                                    | Pathology            |                           |
| IM10.17 | Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance) | S                 | SH                     | Y           | DOAP session, Small group discussion   | Skill assessment/ Written/ Viva voce |                                    | Pathology            |                           |
| IM11.2  | Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce                   |                                    | Pathology            |                           |

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| IM11.3  | Describe and discuss the epidemiology and pathogenesis and risk factors, economic impact and clinical evolution of type 2 diabetes   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM11.5  | Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes  | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology               |                           |
| IM11.11 | Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile | S                 | SH                     | Y           | Bed side clinic, DOAP session, Small group discussion | Skill assessment                |                                    | Pathology               |                           |
| IM11.12 | Perform and interpret a capillary blood glucose test   | S                 | P                      | Y           | Bed side clinic, DOAP session, Small group discussion | Skill assessment                | 2                                  | Pathology, Biochemistry |                           |
| IM11.13 | Perform and interpret a urinary ketone estimation with a dipstick  | S                 | P                      | Y           | Bed side clinic, DOAP session                         | Skill assessment                | 2                                  | Pathology, Biochemistry |                           |
| IM11.22 | Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment   | K                 | KH                     | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| IM12.1  | Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease  | K                 | K                      | Y           | Lecture, Small group discussion                       | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| IM12.3  | Describe and discuss the physiology of the hypothalamo-pituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function  | K                 | K                      | Y           | Lecture, Small group discussion                       | short notes                     |                                    | Pathology, Physiology   |                           |
| IM13.1  | Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India  | K                 | K                      | Y           | Lecture, Small group discussion                       | short note/ Viva voce           |                                    | Pathology, Biochemistry |                           |
| IM13.2  | Describe the genetic basis of selected cancers   | K                 | K                      | N           | Lecture, Small group discussion                       | short note/ Viva voce           |                                    | Pathology               |                           |



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| IM13.3  | Describe the relationship between infection and cancers  | K                 | K                      | Y           | Lecture, Small group discussion                      | short note/ Viva voce                   |                                    | Pathology, Microbiology       |                           |
| IM13.4  | Describe the natural history, presentation, course, complications and cause of death for common cancers  | K                 | K                      | Y           | Lecture, Small group discussion                      | Short note/ Viva voce                   |                                    | Pathology                     |                           |
| IM13.15 | Describe the need, tests involved, their utility in the prevention of common malignancies  | K                 | KH                     | Y           | Bedside clinic, small group discussion               | short note/ Viva voce                   |                                    | Pathology                     |                           |
| IM14.2  | Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes  | K                 | K                      | Y           | Lecture, Small group discussion                      | short note/ Viva voce                   |                                    | Pathology                     |                           |
| IM14.3  | Describe and discuss the monogenic forms of obesity  | K                 | K                      | N           | Lecture, Small group discussion                      | short note/ Viva voce                   |                                    | Pathology                     |                           |
| IM14.4  | Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity                            | K                 | K                      | Y           | Lecture, Small group discussion                      | Short note/ Viva voce                   |                                    | Pathology, Community Medicine |                           |
| IM14.5  | Describe and discuss the natural history of obesity and its complications  | K                 | K                      | Y           | Lecture, Small group discussion                      | short note/ Viva voce                   |                                    | Pathology                     |                           |
| IM15.1  | Enumerate, describe and discuss the aetiology of upper and lower GI bleeding   | K                 | K                      | Y           | Lecture, Small group discussion                      | short note/ Viva voce                   |                                    | Pathology                     | General Surgery           |
| IM15.2  | Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed  | S                 | SH                     | Y           | DOAP session, Small group discussion, Lecture        | Written/ Viva voce/ Skill assessment    |                                    | Pathology                     | General Surgery           |
| IM15.3  | Describe and discuss the physiologic effects of acute blood and volume loss  | K                 | K                      | Y           | Lecture, Small group discussion                      | Short note/ viva voce                   |                                    | Pathology, Physiology         | General Surgery           |
| IM15.9  | Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test | S                 | SH                     | Y           | Bedside clinic, DOAP session, Small group discussion | Skill assessment/ Short note/ Viva voce |                                    | Pathology                     | General Surgery           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods             | Suggested Assessment<br>methods            | Number<br>required to<br>certify P | Vertical integration       | Horizontal<br>Integration |
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| IM15.11 | Develop document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion and specific therapy for arresting blood loss   | S                 | KH                     | Y           | Lecture, Small group discussion                    | Short note/ viva voce                      |                                    | Pathology                  | General Surgery           |
| IM15.12 | Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion            | K                 | K                      | Y           | Lecture, Small group discussion                    | Short note/ viva voce                      |                                    | Pathology                  | General Surgery           |
| IM15.13 | Observe cross matching and blood / blood component transfusion   | S                 | SH                     | Y           | Bedside clinic                                     | Short note/ Viva voce/<br>Skill assessment |                                    | Pathology                  | General Surgery           |
| IM16.4  | Elicit and document and present an appropriate history that includes the natural history, dietary history, travel, sexual history and other concomitant illnesses      | S                 | SH                     | Y           | Bedside clinic skills lab                          | Skill assessment                           |                                    | Microbiology,<br>Pathology |                           |
| IM16.8  | Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination  | S                 | SH                     | Y           | Bedside clinic, Skills lab, Small group discussion | Skill assessment/ Short note/ Viva voce    |                                    | Microbiology,<br>Pathology |                           |
| IM16.12 | Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written/ Viva voce                         |                                    | Pathology                  | General Surgery           |
| IM16.15 | Distinguish, based on the clinical presentation, Crohn's disease from ulcerative colitis   | S                 | SH                     | Y           | Lecture, Small group discussion                    | Short note/ Viva voce                      |                                    | Pathology                  | General Surgery           |
| IM17.7  | Enumerate the indications and describe the findings in the CSF in patients with meningitis   | K                 | K                      | Y           | Small group, Bedside clinic                        | Skill Assessment                           |                                    | Microbiology,<br>Pathology |                           |
| IM17.8  | Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture  | S                 | SH                     | Y           | DOAP session                                       | Skill assessment                           |                                    | Microbiology,<br>Pathology |                           |
| IM17.9  | Interpret the CSF findings when presented with various parameters of CSF fluid analysis  | S                 | SH                     | Y           | Small group discussion, Bedside clinic             | Skill assessment                           |                                    | Microbiology,<br>Pathology |                           |
| IM18.2  | Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke            | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written/ Viva voce                         |                                    | Pathology                  |                           |

| Number                              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration                | Horizontal<br>Integration |
|-------------------------------------|---|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|-------------------------------------|---------------------------|
| IM18.3                              | Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident   | S                 | SH                     | Y           | Bedside clinic                         | Skill assessment                |                                    | Pathology                           |                           |
| IM22.1                              | Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology               |                           |
| IM22.2                              | Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                           | General Surgery           |
| IM22.4                              | Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                           |                           |
| IM25.7                              | Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC | K                 | SH                     | Y           | Bed side clinic, Skill assessment      | Skill assessment                |                                    | Pathology, Microbiology             |                           |
| <b>Obstetrics &amp; Gynaecology</b> |   |                   |                        |             |  |                                 |                                    |                                     |                           |
| OG10.2                              | Enumerate the indications and describe the appropriate use of blood and blood products, their complications and management  | K                 | KH                     | Y           | Lecture, Small group discussion        |                                 |                                    | Pathology                           |                           |
| <b>Pediatrics</b>                   |   |                   |                        |             |  |                                 |                                    |                                     |                           |
| PE11.1                              | Describe the common etiology, clinical features and management of obesity in children   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Biochemistry, Pathology |                           |
| PE11.2                              | Discuss the risk approach for obesity and discuss the prevention strategies   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology               |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods  | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration                | Horizontal<br>Integration |
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| PE12.7  | Describe the causes, clinical features, diagnosis and management of deficiency /excess of Vitamin D ( Rickets and Hypervitaminosis D)         | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | Biochemistry, Physiology, Pathology |                           |
| PE12.8  | Identify the clinical features of dietary deficiency of Vitamin D   | S                 | p                      | Y           | Bedside clinics, Skills lab             | Document in log book            | 3                                  | Biochemistry, Physiology Pathology  |                           |
| PE12.9  | Assess patients with Vitamin D deficiency, diagnose, classify and plan management   | S                 | SH                     | Y           | Bed side clinics                        | Document in log book            |                                    | Biochemistry, Physiology, Pathology |                           |
| PE12.13 | Discuss the RDA , dietary sources of Vitamin K and their role in Health and disease   | K                 | K                      | N           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | Biochemistry, Physiology, Pathology |                           |
| PE12.14 | Describe the causes, clinical features, diagnosis, management and prevention of Deficiency of Vitamin K                                       | K                 | KH                     | N           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | Biochemistry, Physiology, Pathology |                           |
| PE13.1  | Discuss the RDA, dietary sources of Iron and their role in health and disease   | K                 | K                      | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | Pathology, Biochemistry             |                           |
| PE13.2  | Describe the causes, diagnosis and management of Fe deficiency  | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | Pathology Biochemistry              |                           |
| PE13.3  | Identify the clinical features of dietary deficiency of Iron and make a diagnosis   | S                 | SH                     | Y           | Bed side clinics, Skill Lab             | Document in log book            |                                    | Pathology, Biochemistry             |                           |
| PE13.4  | Interpret hemogram and Iron Panel   | S                 | P                      | Y           | Bed side clinic, Small group discussion | Skill Assessment                | 5                                  | Pathology, Biochemistry             |                           |
| PE13.5  | Propose a management plan for Fe Deficiency Anaemia   | S                 | SH                     | Y           | Bed side clinics, Skill lab             | Skill Assessment                |                                    | Pathology, Pharmacology             |                           |
| PE21.2  | Enumerate the etio-pathogenesis, clinical features, complications and management of Acute post streptococcal Glomerular Nephritis in children | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | Pathology                           |                           |
| PE21.3  | Discuss the approach and referral criteria to a child with Proteinuria  | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                    | Pathology                           |                           |

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| PE21.5  | Enumerate the etio-pathogenesis clinical features, complications and management of Acute Renal Failure in children                    | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                           |                           |
| PE21.6  | Enumerate the etio-pathogenesis, clinical features, complications and management of Chronic renal Failure in Children                 | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                           |                           |
| PE21.7  | Enumerate the etio-pathogenesis clinical features, complications and management of Wilms Tumor  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                           |                           |
| PE21.11 | Perform and interpret the common analytes in a Urine examination  | S                 | SH                     | Y           | Bed side clinic Labs, Skill lab        | Skill assessment                |                                    | Biochemistry, Pathology             |                           |
| PE23.1  | Discuss the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases –VSD, ASD and PDA    | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology               |                           |
| PE23.2  | Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases – Fallot's Physiology | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology               |                           |
| PE23.3  | Discuss the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children                         | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology               |                           |
| PE23.4  | Discuss the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children                              | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology               |                           |
| PE23.5  | Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever                           | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology               |                           |
| PE23.6  | Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children                              | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology, Microbiology |                           |
| PE24.1  | Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children                 | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Microbiology             |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration    | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|-------------------------|---------------------------|
| PE24.2 | Discuss the classification and clinical presentation of various types of diarrheal dehydration   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Microbiology |                           |
| PE25.1 | Discuss the etio-pathogenesis, clinical presentation and management of Malabsorption in children and its causes including celiac disease   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology               |                           |
| PE26.1 | Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children   | K                 | KH                     | Y           | Lecture, Small group activity          | Written/ Viva voce              |                                    | Pathology, Microbiology |                           |
| PE26.2 | Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children   | K                 | KH                     | Y           | Lecture, Small group activity          | Written/ Viva voce              |                                    | Pathology, Microbiology |                           |
| PE26.3 | Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children  | K                 | KH                     | Y           | Lecture, Small group activity          | Written/ Viva voce              |                                    | Pathology, Microbiology |                           |
| PE26.4 | Discuss the etio-pathogenesis, clinical features and management of Portal Hypertension in children   | K                 | KH                     | Y           | Lecture, Small group activity          | Written/ Viva voce              |                                    | Pathology               |                           |
| PE26.9 | Interpret Liver Function Tests, viral markers, ultra sonogram report   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                    | Pathology               |                           |
| PE29.1 | Discuss the etio-pathogenesis, clinical features, classification and approach to a child with anaemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| PE29.2 | Discuss the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| PE29.3 | Discuss the etiopathogenesis, clinical features and management of VIT B12, Folate deficiency anaemia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |
| PE29.4 | Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic anaemia and hemolytic uremic syndrome | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology   |                           |

| Number                      | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration                  | Horizontal<br>Integration |
|-----------------------------|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|---------------------------------------|---------------------------|
| PE29.6                      | Discuss the cause of thrombocytopenia in children: describe the clinical features and management of Idiopathic Thrombocytopenic Purpura (ITP)    | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                             |                           |
| PE29.7                      | Discuss the etiology, classification, pathogenesis and clinical features of Hemophilia in children   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                             |                           |
| PE29.8                      | Discuss the etiology, clinical presentation and management of Acute Lymphoblastic Leukemia in children   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                             |                           |
| PE29.9                      | Discuss the etiology, clinical presentation and management of lymphoma in children   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                             |                           |
| <b>General Surgery</b>      |  |                   |                        |             |  |                                 |                                    |                                       |                           |
| SU2.1                       | Describe pathophysiology of shock, types of shock, principles of resuscitation including fluid replacement and monitoring                        | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology, Physiology                 |                           |
| SU3.1                       | Describe the indications and appropriate use of blood and blood products and complications of blood transfusion.                                 | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce.             |                                    | Pathology                             |                           |
| SU5.1                       | Describe normal wound healing and factors affecting healing.   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology                             |                           |
| SU9.1                       | Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Biochemistry, Microbiology, Pathology |                           |
| SU22.2                      | Describe the etiopathogenesis of thyroidal swellings   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Pathology,                            |                           |
| <b>Respiratory Medicine</b> |  |                   |                        |             |  |                                 |                                    |                                       |                           |
| CT2.1                       | Define and classify obstructive airway disease   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology                 |                           |
| CT2.2                       | Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                    | Physiology, Pathology                 |                           |

| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                              | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration    | Horizontal<br>Integration     |
|---------------------|--|-------------------|------------------------|-------------|---|---------------------------------|------------------------------------|-------------------------|-------------------------------|
| CT2.4               | Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnia   | K                 | KH                     | Y           | Lecture, Small group discussion                                     | Written/ Viva voce              |                                    | Physiology, Pathology   |                               |
| CT2.5               | Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema   | K                 | KH                     | N           | Lecture, Small group discussion                                     | Written/ Viva voce              |                                    | Physiology, Pathology   |                               |
| CT2.6               | Describe the role of the environment in the cause and exacerbation of obstructive airway disease   | K                 | KH                     | Y           | Lecture, Small group discussion                                     | Written/ Viva voce              |                                    | Pathology               |                               |
| CT2.7               | Describe and discuss allergic and non-allergic precipitants of obstructive airway disease  | K                 | KH                     | Y           | Lecture, Small group discussion                                     | Written/ Viva voce              |                                    | Pathology,              |                               |
| CT2.11              | Describe, discuss and interpret pulmonary function tests   | S                 | SH                     | Y           | Bed side clinic, DOAP session                                       | Skill assessment                |                                    | Physiology, Pathology   |                               |
| <b>Orthopaedics</b> |  |                   |                        |             |   |                                 |                                    |                         |                               |
| OR3.1               | Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections<br>a) Acute Osteomyelitis<br>b) Subacute osteomyelitis<br>c) Acute Suppurative arthritis<br>d) Septic arthritis & HIV infection<br>e) Spirochaetal infection<br>f) Skeletal Tuberculosis | K/S               | K/KH/S<br>H            | Y           | Lecture, Small group discussion, Video assisted lecture             | Written/ Viva voce/ OSCE        |                                    | Pathology, Microbiology | General surgery               |
| OR4.1               | Describe and discuss the clinical features, investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abscess and caries spine  | K                 | K/KH                   | Y           | Lecture, Small group discussion, Case discussion                    | Written/ Viva voce/ OSCE        |                                    | Pathology               | General surgery               |
| OR10.1              | Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures   | K                 | K/KH                   | Y           | Lecture, Small group discussion, Video assisted interactive lecture | Written/ Viva voce OSCE         |                                    | Pathology               | General surgery, Radiotherapy |
| <b>Radiotherapy</b> |  |                   |                        |             |   |                                 |                                    |                         |                               |



| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required to<br>certify P | Vertical integration | Horizontal<br>Integration                       |
|--------|--|-------------------|------------------------|-------------|--|---------------------------------|------------------------------------|----------------------|---|
| RT1.3  | Enumerate, describe and discuss classification and staging of cancer (AJCC, FIGO etc.)                 | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                    | Pathology            | General Surgery,<br>General<br>Medicine         |
| RT4.5  | Describe and discuss role of radiation in management of common malignancies in India (region specific) | K                 | KH                     | Y           | Lecture and Bed side clinic            | Written/ Viva voce              |                                    | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |
| RT4.6  | Describe and discuss radiotherapy for benign disease   | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                    | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |
| RT4.7  | Counsel patients regarding acute and late effects of radiation and supportive care                     | K/A/S             | KH                     | Y           | Bed side clinic, Group discussion      | Written/ Viva voce              |                                    | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |
| RT5.1  | Describe and discuss cancer prevention, screening, vaccination, cancer registry                        | K                 | K                      | Y           | Group discussion                       | Written/ Viva voce              |                                    | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |

# **MICROBIOLOGY (CODE: MI)**

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>MICROBIOLOGY</b>                             |  |                                     |                        |               |   |                                |                                       |                      |                           |
| <b>Topic: General Microbiology and Immunity</b> |  | <b>Number of competencies: (11)</b> |                        |               | <b>Number of procedures that require certification : (01)</b> |                                |                                       |                      |                           |
| MI1.1   | Describe the different causative agents of Infectious diseases+A208, the methods used in their detection, and discuss the role of microbes in health and disease                     | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| MI1.2   | Perform and identify the different causative agents of Infectious diseases by Gram Stain, ZN stain and stool routine microscopy  | S                                   | P                      | Y             | DOAP session  | Skill assessment               | 5                                     |                      |                           |
| MI1.3   | Describe the epidemiological basis of common infectious diseases   | K                                   | KH                     | Y             | Lecture   | Written/ Viva voce             |                                       |                      | Community Medicine        |
| MI1.4   | Classify and describe the different methods of sterilization and disinfection. Discuss the application of the different methods in the laboratory, in clinical and surgical practice | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | General Surgery      |                           |
| MI1.5   | Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice                          | K                                   | KH                     | Y             | Small group discussion, Case discussion                       | Written/Viva voce/<br>OSPE     |                                       | General Surgery      |                           |
| MI1.6   | Describe the mechanisms of drug resistance, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy  | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | Pharmacology              |
| MI1.7   | Describe the immunological mechanisms in health  | K                                   | KH                     | Y             | Lecture   | Written/ Viva voce             |                                       |                      | Pathology                 |
| MI1.8   | Describe the mechanisms of immunity and response of the host immune system to infections   | K                                   | KH                     | Y             | Lecture   | Written/ Viva voce             |                                       | Pediatrics           | Pathology                 |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| MI1.9   | Discuss the immunological basis of vaccines and describe the Universal Immunisation schedule  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Paediatrics          |                           |
| MI1.10  | Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection.                                      | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Paediatrics          |                           |
| MI1.11  | Describe the immunological mechanisms of transplantation and tumor immunity   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: CVS and Blood</b> <span style="margin-left: 200px;"><b>Number of competencies: (7)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| MI2.1   | Describe the etiologic agents in rheumatic fever and their diagnosis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pathology                 |
| MI2.2   | Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pathology                 |
| MI2.3   | Identify the microbial agents causing Rheumatic Heart Disease & infective Endocarditis  | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       | General Medicine     | Pathology                 |
| MI2.4   | List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pathology                 |
| MI2.5   | Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kalaazar, malaria, filariasis and other common parasites prevalent in India   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pathology                 |
| MI2.6   | Identify the causative agent of malaria and filariasis  | K/S               | SH                     | Y             | DOAP session                          | Skill assessment               |                                       | General Medicine     |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P             | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method                                 | Number<br>required<br>to certify<br>P | Vertical integration          | Horizontal<br>Integration |
|---|---|-------------------|------------------------------------|---------------|---------------------------------------|--|---------------------------------------|-------------------------------|---------------------------|
| MI2.7   | Describe the epidemiology, the etio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV                           | K                 | KH                                 | Y             | Lecture, Small group discussion       | Written/ Viva voce   |                                       | General Medicine              | Pathology                 |
| <b>Topic: Gastrointestinal and hepatobiliary system</b> |   |                   |                                    |               |                                       |  |                                       |                               |                           |
|   |   |                   | <b>Number of competencies: (8)</b> |               |                                       | <b>Number of procedures that require certification : (NIL)</b> |                                       |                               |                           |
| MI3.1   | Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents               | K                 | KH                                 | Y             | Lecture, Small group discussion       | Written/ Viva voce   |                                       | General Medicine, Paediatrics | Pathology                 |
| MI3.2   | Identify the common etiologic agents of diarrhea and dysentery  | S                 | SH                                 | Y             | DOAP session                          | Skill assessment   |                                       | General Medicine, Paediatrics |                           |
| MI3.3   | Describe the enteric fever pathogens and discuss the evolution of the clinical course and the laboratory diagnosis of the diseases caused by them   | K                 | KH                                 | Y             | Lecture, Small group discussion       | Written/ Viva voce   |                                       | General Medicine              | Pharmacology, Pathology   |
| MI3.4   | Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness  | S                 | KH                                 | Y             | DOAP session                          | Skill assessment   |                                       | General Medicine              | Pathology                 |
| MI3.5   | Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis   | K                 | KH                                 | Y             | Lecture, Small group discussion       | Written/ Viva voce   |                                       | General Medicine              | Pharmacology              |
| MI3.6   | Describe the etio-pathogenesis of Acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD                                       | K                 | KH                                 | Y             | Lecture, Small group discussion       | Written/ Viva voce   |                                       | General Medicine              | Pharmacology, Pathology   |
| MI3.7   | Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis | K                 | KH                                 | Y             | Lecture, Small group discussion       | Written/ Viva voce   |                                       | General Medicine              | Pathology                 |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration   | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--|---------------------------|
| MI3.8  | Choose the appropriate laboratory test in the diagnosis of viral hepatitis with emphasis on viral markers  | K                 | KH                     | Y             | Small group discussion, Case discussion | Written/<br>Viva voce/ OSPE    |                                       | General Medicine   | Pathology                 |
| <b>Topic: Musculoskeletal system skin and soft tissue infections</b> <span style="margin-left: 150px;"><b>Number of competencies: (3)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification : (NIL)</b></span> |  |                   |                        |               |   |                                |                                       |  |                           |
| MI4.1  | Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections | K                 | KH                     | Y             | Lecture                                 | Written/ Viva voce             |                                       | General Medicine   |                           |
| MI4.2  | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections   | K                 | KH                     | Y             | Lecture                                 | Written/ Viva voce             |                                       | Orthopaedics   |                           |
| MI4.3  | Describe the etio-pathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis  | K                 | KH                     | Y             | Lecture                                 | Written/ Viva voce             |                                       | Dermatology,<br>Venereology &<br>Leprosy, General<br>Surgery |                           |
| <b>Topic: Central Nervous System infections</b> <span style="margin-left: 150px;"><b>Number of competencies: (3)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification : (NIL)</b></span>                      |  |                   |                        |               |   |                                |                                       |  |                           |
| MI5.1  | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis  | K                 | KH                     | Y             | Lecture                                 | Written/ Viva voce             |                                       | General Medicine,<br>Pediatrics                              | Pathology                 |
| MI5.2  | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis  | K                 | KH                     | Y             | Lecture                                 | Written/ Viva voce             |                                       | General Medicine,<br>Pediatrics                              | Pathology                 |
| MI5.3  | Identify the microbial agents causing meningitis   | S                 | SH                     | Y             | DOAP session                            | Skill assessment               |                                       | General Medicine,<br>Pediatrics                              |                           |
| <b>Topic: Respiratory tract infections</b> <span style="margin-left: 150px;"><b>Number of competencies: (3)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification : (02)</b></span>                            |  |                   |                        |               |   |                                |                                       |  |                           |
| MI6.1  | Describe the etio-pathogenesis, laboratory diagnosis and prevention of Infections of upper and lower respiratory tract   | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | General Medicine   |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration   | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| MI6.2   | Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)  | S                 | P                      | Y             | DOAP session                          | Skill assessment               | 3                                     | General Medicine   |                           |
| MI6.3   | Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain)  | S                 | P                      | Y             | DOAP session                          | Skill assessment               | 3                                     | General Medicine   |                           |
| <b>Topic: Genitourinary &amp; Sexually transmitted infections</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span> |  |                   |                        |               |                                       |                                |                                       |  |                           |
| MI7.1   | Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery  |                           |
| MI7.2   | Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Dermatology, Venereology & Leprosy, Obstetrics & Gynaecology |                           |
| MI7.3   | Describe the etio-pathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of Urinary tract infections  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine   |                           |
| <b>Topic: Zoonotic diseases and miscellaneous</b> <span style="float: right;">Number of competencies: (16)</span> <span style="float: right;">Number of procedures that require certification : (01)</span>                 |  |                   |                        |               |                                       |                                |                                       |  |                           |
| MI8.1   | Enumerate the microbial agents and their vectors causing Zoonotic diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course, laboratory diagnosis and prevention | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine   |                           |
| MI8.2   | Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine   | Pathology                 |
| MI8.3   | Describe the role of oncogenic viruses in the evolution of virus associated malignancy   | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | General Medicine   | Pathology                 |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method    | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P   | Vertical integration                    | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|--|--------------------------------|---|---|---------------------------|
| MI8.4  | Describe the etiologic agents of emerging Infectious diseases.<br>Discuss the clinical course and diagnosis   | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |   | General Medicine,<br>Community Medicine |                           |
| MI8.5  | Define Healthcare Associated Infections (HAI) and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |   | General Medicine,<br>Community Medicine |                           |
| MI8.6  | Describe the basics of Infection control  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |   |   | Community Medicine        |
| MI8.7  | Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)   | S                 | P                      | Y             | DOAP session                             | Skill assessment               | 3 each in<br>(Hand<br>hygiene &<br>PPE) | General Surgery                         | Community Medicine        |
| MI8.8  | Describe the methods used and significance of assessing the microbial contamination of food, water and air  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |   |   |                           |
| MI8.9  | Discuss the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing infectious diseases     | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |   |   |                           |
| MI8.10 | Demonstrate the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing Infectious diseases | S                 | SH                     | Y             | DOAP session                             | Skill assessment               |   |   |                           |
| MI8.11 | Demonstrate respect for patient samples sent to the laboratory for performance of laboratory tests in the detection of microbial agents causing Infectious diseases | A                 | SH                     | Y             | DOAP session                             | Skill assessment               |   |   |                           |
| MI8.12 | Discuss confidentiality pertaining to patient identity in laboratory results  | A                 | KH                     | Y             | Lecture, Small group discussion          | Viva voce                      |   |   |                           |
| MI8.13 | Choose the appropriate laboratory test in the diagnosis of the infectious disease   | K                 | KH                     | Y             | Small group discussions, Case discussion | Written/<br>Viva voce/ OSPE    |   |   |                           |



| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                | Horizontal<br>Integration |
|---------------------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| MI8.14              | Demonstrate confidentiality pertaining to patient identity in laboratory results   | A                 | SH                     | Y             | DOAP session                            | Skill assessment               |                                       | AETCOM                              |                           |
| MI8.15              | Choose and Interpret the results of the laboratory tests used in diagnosis of the infectious diseases  | K/S               | SH                     | Y             | Small group discussion, Case discussion | Written/ Viva voce/ OSPE       |                                       |                                     |                           |
| MI8.16              | Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)  | K                 | K                      | Y             | Lecture                                 | Written/ Viva voce             |                                       |                                     | Community Medicine        |
|                     | *causative agents of Infectious diseases are inclusive of bacterial, viral, parasites and fungal agents causing various clinical conditions.   |                   |                        |               |   |                                |                                       |                                     |                           |
|                     | <b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br><b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br><b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br><b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b> |                   |                        |               |   |                                |                                       |                                     |                           |
| <b>Integration</b>  |  |                   |                        |               |   |                                |                                       |                                     |                           |
| <b>Biochemistry</b> |  |                   |                        |               |   |                                |                                       |                                     |                           |
| BI10.5              | Describe antigens and concepts involved in vaccine development.  | K                 | KH                     | Y             | Lectures, Small group discussion        | Written/ Viva voce             |                                       | Pathology, Pediatrics, Microbiology |                           |
| <b>Pathology</b>    |  |                   |                        |               |   |                                |                                       |                                     |                           |
| PA7.5               | Describe the immunology and the immune response to cancer  | K                 | KH                     | N             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                                     | Microbiology              |
| PA9.1               | Describe the principles and mechanisms involved in immunity  | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Pediatrics                          | Microbiology              |
| PA9.2               | Describe the mechanism of hypersensitivity reactions   | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                                     | Microbiology              |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration         | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|------------------------------|---------------------------|
| PA9.3  | Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                              | Microbiology              |
| PA9.6  | Define and describe the pathogenesis and pathology of HIV and AIDS  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |
| PA10.1 | Define and describe the pathogenesis and pathology of malaria   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |
| PA10.2 | Define and describe the pathogenesis and pathology of cysticercosis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |
| PA10.3 | Define and describe the pathogenesis and pathology of leprosy   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |
| PA10.4 | Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |
| PA22.5 | Enumerate and describe infections transmitted by blood transfusion  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                              | Microbiology              |
| PA26.1 | Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |
| PA26.2 | Describe the etiology, gross and microscopic appearance and complications of lung abscess   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |
| PA26.3 | Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive Airway Disease (OAD) and bronchiectasis | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, General Medicine | Microbiology              |
| PA26.4 | Define and describe the etiology, types, pathogenesis, stages, morphology, microscopic appearance and complications of tuberculosis                               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine             | Microbiology              |

| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                     | Horizontal<br>Integration |
|---------------------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| PA27.4              | Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine                         | Microbiology              |
| PA27.6              | Describe the etiology, pathophysiology, pathology, gross and microscopic, features diagnosis and complications of infective endocarditis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine                         | Microbiology              |
| PA27.10             | Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine                         | Microbiology              |
| PA33.1              | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Human Anatomy, Orthopaedics              | Microbiology              |
| PA35.1              | Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine                         | Microbiology              |
| PA35.3              | Identify the etiology of meningitis based on given CSF parameters  | S                 | P                      | Y             | DOAP session                          | Skill Assessment               | 1                                     | General Medicine                         | Microbiology              |
| <b>Pharmacology</b> |  |                   |                        |               |                                       |                                |                                       |  |                           |
| PH1.43              | Describe and discuss the rational use of antimicrobials including antibiotic stewardship program   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine<br>Pediatrics           | Microbiology              |
| PH1.45              | Describe the drugs used in MDR and XDR Tuberculosis  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Respiratory Medicine                     | Microbiology              |
| PH1.46              | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Dermatology,<br>Venereology &<br>Leprosy | Microbiology              |
| PH1.47              | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | General Medicine                         | Microbiology              |

| Number                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method              | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical integration                       | Horizontal<br>Integration |
|---------------------------|---|-------------------|------------------------|---------------|--|---|---------------------------------------|--|---------------------------|
| PH1.48                    | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV   | K                 | KH                     | Y             | Lecture  | Written/Viva voce                       |                                       |  | Microbiology              |
| <b>Community Medicine</b> |   |                   |                        |               |  |   |                                       |  |                           |
| CM3.3                     | Describe the aetiology and basis of water borne diseases/ jaundice/hepatitis/ diarrheal diseases  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session      | Written/ Viva voce                      |                                       | Microbiology, General Medicine, Pediatrics |                           |
| CM3.6                     | Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program   | K                 | KH                     | Y             | Lecture, Small group discussion                    | Written/ Viva voce                      |                                       | Microbiology                               |                           |
| CM3.7                     | Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures                                  | S                 | SH                     | Y             | Lecture, Small group discussion, DOAP session      | Written/ Viva voce/<br>Skill assessment |                                       | Microbiology                               |                           |
| CM5.7                     | Describe food hygiene   | K                 | KH                     | Y             | Lecture, Small group discussion                    | Written/ Viva voce                      |                                       |  | Microbiology              |
| CM7.7                     | Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures                    | S                 | SH                     | Y             | Small group discussion, DOAP sessions              | Written/ Skill assessment               |                                       | General Medicine                           | Microbiology              |
| CM8.1                     | Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases | K                 | KH                     | Y             | Small group discussion, Lecture                    | Written/ Viva voce                      |                                       | General Medicine, Pediatrics               | Microbiology, Pathology   |
| CM14.1                    | Define and classify hospital waste  | K                 | KH                     | Y             | Lecture, Small group discussion, visit to hospital | Written/ Viva voce                      |                                       |  | Microbiology              |
| CM14.2                    | Describe various methods of treatment of hospital waste   | K                 | KH                     | Y             | Lecture, Small group discussion, visit to hospital | Written/ Viva voce                      |                                       |  | Microbiology              |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration           |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|-------------------------------------|
| CM14.3  | Describe laws related to hospital waste management  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Microbiology                        |
| <b>Dermatology, Venereology &amp; Leprosy</b> |   |                   |                        |               |                                       |                                |                                       |                      |                                     |
| DR6.1   | Describe the etiology pathogenesis and diagnostic features of pediculosis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           | Microbiology                        |
| DR7.1   | Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of dermatophytes                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           | Microbiology                        |
| DR7.2   | Identify candida species in fungal scrapings and KOH mount  | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      | Microbiology                        |
| DR7.3   | Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy            | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Microbiology<br>,Pharmacology       |
| DR8.1   | Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           | Microbiology                        |
| DR9.1   | Classify, describe the epidemiology, etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of Leprosy   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Microbiology,<br>Community Medicine |
| DR10.1  | Identify and classify syphilis based on the presentation and clinical manifestations  | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       | General Medicine     | Microbiology                        |
| DR10.2  | Identify spirochete in a dark ground microscopy   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      | Microbiology                        |
| DR10.3  | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis            | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pharmacology,<br>Microbiology       |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration     |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|-------------------------------|
| DR10.6 | Describe the etiology, diagnostic and clinical features of non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Microbiology                  |
| DR10.7 | Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       | General Medicine     | Microbiology                  |
| DR10.8 | Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV) | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pharmacology, Microbiology    |
| DR11.1 | Describe the etiology, pathogenesis and clinical features of the dermatologic manifestations of HIV and its complications including opportunistic infections                                  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Microbiology                  |
| DR11.2 | Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       | General Medicine     | Microbiology                  |
| DR11.3 | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine     | Pharmacology<br>Microbiology  |
| DR12.7 | Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       | General Medicine     | Pathology,<br>Microbiology    |
| DR14.1 | Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Microbiology,<br>Pathology    |
| DR15.2 | Identify staphylococcus on a gram stain   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       |                      | Microbiology                  |
| DR15.3 | Enumerate the indications and describe the pharmacology, indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery      | Microbiology,<br>Pharmacology |

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|-------------------------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|--|---------------------------|
| <b>Dentistry</b>        |   |                   |                        |               |  |                                |                                       |  |                           |
| DE1.2                   | Discuss the role of causative microorganisms in the aetio-pathogenesis of dental caries   | K                 | KH                     | Y             | Lecture, Small group discussion        | Viva voce                      |                                       | Microbiology                           |                           |
| DE1.4                   | Discuss the role of dental caries as a focus of sepsis  | K                 | KH                     | Y             | Lecture, Small group discussion        | Viva voce                      |                                       | Microbiology, General Medicine         |                           |
| <b>General Medicine</b> |   |                   |                        |               |  |                                |                                       |  |                           |
| IM1.3                   | Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Pathology, Physiology, Microbiology    |                           |
| IM1.9                   | Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever   | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Microbiology                           |                           |
| IM1.22                  | Assist and demonstrate the proper technique in collecting specimen for blood culture  | S                 | SH                     | Y             | DOAP session                           | Skill assessment               |                                       | Microbiology                           |                           |
| IM1.27                  | Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease  | K                 | KH                     | Y             | Bedside clinic, Small group discussion | Written                        |                                       | Microbiology, Pharmacology             |                           |
| IM3.1                   | Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia   | K                 | K                      | Y             | Lecture, Small group discussion        | short note/ Viva voce          |                                       | Human Anatomy, Pathology, Microbiology |                           |
| IM3.2                   | Discuss and describe the aetiology of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host  | K                 | K                      | Y             | Lecture, Small group discussion        | short note/ Viva voce          |                                       | Microbiology                           |                           |
| IM3.3                   | Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia   | K                 | KH                     | Y             | Lecture , Small group discussion       | short note/ Viva voce          |                                       | Pathology, Microbiology                |                           |

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|--------|---|-------------------|------------------------|---------------|---------------------------------------|---|---------------------------------------|------------------------------|---------------------------|
| IM3.7  | Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill assessment                        |                                       | Radiodiagnosis, Microbiology |                           |
| IM3.10 | Demonstrate the correct technique in a mannequin and interpret results of a blood culture   | S                 | SH                     | Y             | DOAP session                          | Skill assessment                        |                                       | Microbiology                 |                           |
| IM3.11 | Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing  | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill assessment                        |                                       | Radiodiagnosis, Microbiology |                           |
| IM3.12 | Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum  | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill Assessment/<br>Written/ Viva voce |                                       | Pharmacology, Microbiology   |                           |
| IM3.13 | Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum.   | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill assessment/<br>Written/ Viva voce |                                       | Pharmacology, Microbiology   |                           |
| IM3.14 | Perform and interpret a sputum gram stain and AFB   | S                 | P                      | Y             | DOAP session                          | Skill assessment                        |                                       | Microbiology                 |                           |
| IM3.19 | Discuss, describe and enumerate the indications and communicate to patients on pneumococcal and influenza vaccines  | S/C               | K                      | Y             | Lecture, Small group discussion       | Short note/ Viva voce                   |                                       | Microbiology                 |                           |
| IM4.1  | Describe and discuss the febrile response and the influence of host immune status, risk factors and co-morbidities on the febrile response  | K                 | K                      | Y             | Lecture, Small group discussion       | Written                                 |                                       | Microbiology                 |                           |
| IM4.2  | Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel  | K                 | K                      | Y             | Lecture, Small group discussion       | Written                                 |                                       | Microbiology                 |                           |



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|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| IM4.3  | Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g. Dengue, Chikungunya, Typhus)  | K                 | K                      | Y             | Lecture, Small group discussion       | Written                        |                                       | Microbiology,<br>Community Medicine |                           |
| IM4.4  | Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written                        |                                       | Microbiology                        |                           |
| IM4.5  | Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written                        |                                       | Pathology,<br>Microbiology          |                           |
| IM4.6  | Discuss and describe the pathophysiology and manifestations of malaria  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written                        |                                       | Microbiology                        |                           |
| IM4.8  | Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host, neutropenic host, nosocomial host and a host with HIV disease  | K                 | K                      | Y             | Lecture, Small group discussion       | Written                        |                                       | Microbiology                        |                           |
| IM4.9  | Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use   | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill assessment               |                                       | Microbiology                        |                           |
| IM4.12 | Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC | K                 | SH                     | Y             | Bedside clinic, Skill assessment      | Skill assessment               |                                       | Pathology,<br>Microbiology          |                           |
| IM4.13 | Perform and interpret a sputum gram stain   | S                 | SH                     | Y             | DOAP session                          | Log book documentation         |                                       | Microbiology                        |                           |
| IM4.14 | Perform and interpret a sputum AFB  | S                 | SH                     | Y             | DOAP session                          | Log book documentation         |                                       | Microbiology                        |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method     | Suggested<br>Assessment method                 | Number<br>required<br>to certify<br>P | Vertical integration          | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---|--|---------------------------------------|-------------------------------|---------------------------|
| IM4.15 | Perform and interpret a malarial smear  | S                 | SH                     | Y             | DOAP session                              | Log book<br>documentation/ Skill<br>assessment |                                       | Microbiology                  |                           |
| IM4.19 | Assist in the collection of blood and wound cultures  | S                 | SH                     | Y             | DOAP session                              | Log book/<br>documentation                     |                                       | Microbiology                  |                           |
| IM4.20 | Interpret a PPD (Mantoux)   | S                 | SH                     | Y             | DOAP session                              | Log book/<br>documentation                     |                                       | Microbiology                  |                           |
| IM4.23 | Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs          | S                 | SH                     | Y             | Small group<br>discussion                 | Skill assessment                               |                                       | Microbiology,<br>Pharmacology |                           |
| IM4.26 | Counsel the patient on malarial prevention  | C                 | SH                     | Y             | DOAP session                              | Skill assessment                               |                                       | Microbiology,<br>Pharmacology |                           |
| IM5.4  | Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis     | K                 | K                      | Y             | Lecture, Small group<br>discussion        | Written/ Viva voce                             |                                       | Pathology,<br>Microbiology    |                           |
| IM5.14 | Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology | S                 | SH                     | Y             | Bedside clinic, Small<br>group discussion | Viva voce/ Written                             |                                       | Pathology,<br>Microbiology    |                           |
| IM5.17 | Enumerate the indications precautions and counsel patients on vaccination for hepatitis                                   | K/C               | SH                     | Y             | written Small group<br>discussion         | Written/ Viva voce                             |                                       | Microbiology                  |                           |
| IM6.1  | Describe and discuss the symptoms and signs of acute HIV seroconversion   | K                 | KH                     | Y             | Lecture, Small group<br>discussion        | Short notes/ Viva voce                         |                                       | Microbiology                  |                           |
| IM6.2  | Define and classify HIV AIDS based on the CDC criteria  | K                 | KH                     | Y             | Lecture, Small group<br>discussion        | Short notes/ Viva voce                         |                                       | Microbiology                  |                           |
| IM6.3  | Describe and discuss the relationship between CDC count and the risk of opportunistic infections                          | K                 | KH                     | Y             | Lecture, Small group<br>discussion        | Short notes/ Viva voce                         |                                       | Microbiology                  |                           |
| IM6.4  | Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections     | K                 | KH                     | Y             | Lecture, Small group<br>discussion        | Written/ Viva voce                             |                                       | Microbiology                  |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical integration       | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|--|---|---------------------------------------|----------------------------|---------------------------|
| IM6.10  | Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC      | K                 | KH                     | Y             | Bedside clinic, DOAP session, Small group discussion | Written/ Skill assessment               |                                       | Pathology, Microbiology    |                           |
| IM6.13  | Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea                             | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Pharmacology, Microbiology |                           |
| IM6.14  | Perform and interpret a gram stain of the sputum  | S                 | P                      | Y             | DOAP session   | Skill assessment                        |                                       | Microbiology               |                           |
| IM6.17  | Describe and discuss the principles of HAART, the classes of antiretroviral used, adverse reactions and interactions                          | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Microbiology, Pharmacology |                           |
| IM6.18  | Describe and discuss the principles and regimens used in post exposure prophylaxis  | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Microbiology, Pharmacology |                           |
| IM6.19  | Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections                        | K/C               | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Pathology, Microbiology    |                           |
| IM13.3  | Describe the relationship between infection and cancers   | K                 | K                      | Y             | Lecture, Small group discussion                      | Short notes/ Viva voce                  |                                       | Pathology, Microbiology    | General Surgery           |
| IM15.15 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Pharmacology, Microbiology |                           |
| IM16.1  | Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non-infectious causes                               | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Microbiology               |                           |
| IM6.13  | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial, viral and other types of diarrhea     | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Pharmacology, Microbiology |                           |
| IM16.8  | Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination                   | S                 | SH                     | Y             | Bedside clinic, Skills lab, Small group discussion   | Skill assessment/ Short note/ Viva voce |                                       | Microbiology, Pathology    |                           |
| IM16.9  | Identify common parasitic causes of diarrhea under the microscope in a stool specimen   | S                 | SH                     | Y             | DOAP session   | Skill assessment                        |                                       | Microbiology               |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method  | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| IM16.10 | Identify Vibrio cholera in a hanging drop specimen   | S                 | SH                     | Y             | DOAP session                           | Skill Assessment               |                                       | Microbiology                        |                           |
| IM16.11 | Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea  | K                 | KH                     | Y             | Lectures, Small group discussion       | Written/ Viva voce             |                                       | Microbiology                        |                           |
| IM16.13 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea  | K                 | K                      | Y             | Lectures, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology,<br>Microbiology       |                           |
| IM17.7  | Enumerate the indications and describe the findings in the CSF in patients with meningitis   | K                 | K                      | Y             | Small group discussion, Bedside clinic | Skill Assessment               |                                       | Microbiology,<br>Pathology          |                           |
| IM17.8  | Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture  | S                 | SH                     | Y             | DOAP session                           | Skill assessment               |                                       | Microbiology,<br>Pathology          |                           |
| IM17.9  | Interpret the CSF findings when presented with various parameters of CSF fluid analysis  | S                 | SH                     | Y             | Small group discussion, Bedside clinic | Skill assessment               |                                       | Microbiology,<br>Pathology          |                           |
| IM25.1  | Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic disease (eg. Leptospirosis, Rabies) and non febrile infectious disease (eg. Tetanus) | K                 | K                      | Y             | Lecture, Small group discussion        | Written                        |                                       | Microbiology,<br>Community Medicine |                           |
| IM25.2  | Describe and discuss the common causes pathophysiology and manifestations of these diseases  | K                 | K                      | Y             | Lecture, Small group discussion        | Written                        |                                       | Microbiology,<br>Community Medicine |                           |
| IM25.3  | Describe and discuss the pathophysiology and manifestations of these diseases  | K                 | KH                     | Y             | Lecture, Small group discussion        | Written                        |                                       | Microbiology                        |                           |
| IM25.9  | Assist in the collection of blood and other specimen cultures  | S                 | SH                     | Y             | DOAP session                           | Log book documentation         |                                       | Microbiology                        |                           |
| IM25.11 | Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis   | C                 | SH                     | Y             | DOAP session                           | Skill assessment               |                                       | Microbiology                        |                           |

| Number            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                | Horizontal<br>Integration |
|-------------------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| <b>Pediatrics</b> |   |                   |                        |               |                                       |                                |                                       |                                     |                           |
| PE19.1            | Explain the components of the Universal immunization Program and the sub National Immunization Programs   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology    |                           |
| PE19.2            | Explain the epidemiology of Vaccine preventable diseases  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology    |                           |
| PE19.3            | Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology    |                           |
| PE19.4            | Define cold chain and discuss the methods of safe storage and handling of vaccines  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology    |                           |
| PE19.5            | Discuss immunization in special situations – HIV positive children, immunodeficiency, preterm, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travellers | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology    |                           |
| PE21.1            | Enumerate the etio-pathogenesis clinical features, complications and management of Urinary Tract infection in children  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Microbiology                        |                           |
| PE23.6            | Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology, Microbiology |                           |
| PE24.1            | Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Microbiology             |                           |
| PE24.2            | Discuss the classification and clinical presentation of various types of diarrheal dehydration  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology, Microbiology             |                           |
| PE24.5            | Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti- emetics in acute diarrheal diseases  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology, Microbiology          |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method    | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration          | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-------------------------------|---------------------------|
| PE24.6  | Discuss the causes, clinical presentation and management of persistent diarrhoea in children                           | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology                  |                           |
| PE24.8  | Discuss the causes, clinical presentation and management of dysentery in children                                      | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Pharmacology,<br>Microbiology |                           |
| PE24.12 | Perform and interpret stool examination including Hanging Drop   | S                 | P                      | N             | Bed side clinics,<br>Skills lab          | log book                       | 2                                     | Microbiology                  |                           |
| PE26.1  | Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children                         | K                 | KH                     | Y             | Lecture, Small group activity            | Written/ Viva voce             |                                       | Pathology,<br>Microbiology    |                           |
| PE26.2  | Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children               | K                 | KH                     | Y             | Lecture, Small group activity            | Written/ Viva voce             |                                       | Pathology,<br>Microbiology    |                           |
| PE26.3  | Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children                  | K                 | KH                     | Y             | Lecture, Small group activity            | Written/ Viva voce             |                                       | Pathology,<br>Microbiology    |                           |
| PE26.12 | Discuss the prevention of Hep B infection – Universal precautions and Immunisation                                     | K                 | KH                     | Y             | Lecture, Small group discussion activity | Written/ Viva voce             |                                       | Microbiology                  |                           |
| PE30.1  | Discuss the etio-pathogenesis, clinical features, complications, management and prevention of meningitis in children   | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology                  |                           |
| PE30.2  | Distinguish bacterial, viral and tuberculous meningitis  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology                  |                           |
| PE30.13 | Discuss the etio-pathogenesis, clinical features, management and prevention of Poliomyelitis in children               | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology                  |                           |
| PE30.21 | Interpret and explain the findings in a CSF analysis   | S                 | SH                     | Y             | Small group discussion                   | Log book                       |                                       | Microbiology                  | Respiratory Medicine      |
| PE34.1  | Discuss the epidemiology, clinical features, clinical types, complications of Tuberculosis in Children and Adolescents | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology                  | Respiratory Medicine      |

| Number                 | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method    | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                                | Horizontal<br>Integration |
|------------------------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|---|---------------------------|
| PE34.2                 | Discuss the various diagnostic tools for childhood tuberculosis   | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology  | Respiratory Medicine      |
| PE34.3                 | Discuss the various regimens for management of Tuberculosis as per National Guidelines                                | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology,<br>Community Medicine<br>Pharmacology | Respiratory Medicine      |
| PE34.4                 | Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology,<br>Community Medicine<br>Pharmacology | Respiratory Medicine      |
| PE34.6                 | Identify a BCG scar   | S                 | P                      | Y             | Bed side clinics,<br>Skills lab          | Skill Assessment               | 3                                     | Microbiology  | Respiratory Medicine      |
| PE34.7                 | Interpret a Mantoux test  | S                 | P                      | Y             | Bed side clinics<br>Skills lab           | Skill assessment               | 3                                     | Microbiology  | Respiratory Medicine      |
| PE34.9                 | Interpret blood tests in the context of laboratory evidence for tuberculosis  | S                 | SH                     | N             | Bed side clinics, Small group discussion | Log book                       |                                       | Microbiology  | Respiratory Medicine      |
| PE34.10                | Discuss the various samples for demonstrating the organism eg Gastric Aspirate, Sputum, CSF, FNAC                     | K                 | KH                     | Y             | Bed side clinics, Small group discussion | Written/ Viva voce             |                                       | Microbiology  | Respiratory Medicine      |
| PE34.11                | Perform AFB staining  | S                 | P                      | Y             | DOAP session                             | Log book/journal               | 3                                     | Microbiology  | Respiratory Medicine      |
| PE34.12                | Enumerate the indications and Discuss the limitation of methods of culturing M.Tuberculi                              | K                 | KH                     | Y             | Small group discussion                   | Written/ Viva voce             |                                       | Microbiology  |                           |
| <b>General Surgery</b> |   |                   |                        |               |  |                                |                                       |   |                           |
| SU6.1                  | Define and describe the aetiology and pathogenesis of surgical infections   | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Microbiology  |                           |

| Number                      | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                  | Horizontal<br>Integration |
|-----------------------------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|---------------------------------------|---------------------------|
| SU9.1                       | Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient   | K                 | KH                     | Y             | Lecture, Small group discussion                         | Written/ Viva voce             |                                       | Biochemistry, Microbiology, Pathology |                           |
| SU13.1                      | Describe the immunological basis of organ transplantation  | K                 | KH                     | Y             | Lecture, Small group discussion                         | Written/ Viva voce             |                                       | Microbiology                          |                           |
| SU13.2                      | Discuss the Principles of immunosuppressive therapy.Enumerate Indications, describe surgical principles, management of organ transplantation   | K                 | KH                     | Y             | Lecture, Small group discussion                         | Written/ Viva voce             |                                       | Microbiology, Pharmacology            |                           |
| SU14.1                      | Describe aseptic techniques, sterilization and disinfection  | K                 | KH                     | Y             | Lecture, Small group discussion                         | Written/ Viva voce             |                                       | Microbiology                          |                           |
| SU15.1                      | Describe Classification of hospital waste and appropriate methods of disposal  | K                 | KH                     | Y             | Lecture, Small group discussion                         | Written/ Viva voce             |                                       | Microbiology                          |                           |
| SU29.3                      | Describe the Clinical features, Investigations and principles of management of urinary tract infections  | K                 | KH                     | Y             | Lecture, Small group discussion                         | Written/ Viva voce             |                                       | Microbiology                          |                           |
| <b>Orthopaedics</b>         |  |                   |                        |               |   |                                |                                       |                                       |                           |
| OR3.1                       | Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections<br>a) Acute Osteomyelitis<br>b) Subacute osteomyelitis<br>c) Acute Suppurative arthritis<br>d) Septic arthritis & HIV infection<br>e) Spirochaetal infection<br>f) Skeletal Tuberculosis | K/S               | K/KH/SH                | Y             | Lecture, Small group discussion, Video assisted lecture | Written/ Viva voce/ OSCE       |                                       | Pathology, Microbiology               |                           |
| <b>Respiratory Medicine</b> |  |                   |                        |               |   |                                |                                       |                                       |                           |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/SH/<br>P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                           | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| CT1.2  | Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS). | K                 | KH                     | Y             | Lecture, Small group discussion       | Written                        |                                       | Microbiology                                   |                           |
| CT1.3  | Discuss and describe the impact of confection with HIV and other co-morbid conditions like diabetes on the natural history of tuberculosis  | K                 | K                      | Y             | Lecture, Small group discussion       | Written                        |                                       | Microbiology                                   |                           |
| CT1.4  | Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology, Pharmacology |                           |
| CT1.7  | Perform and interpret a PPD (Mantoux) and describe and discuss the indications and pitfalls of the test   | S                 | P                      | Y             | DOAP session                          | Maintenance of log book        |                                       | Microbiology                                   |                           |
| CT1.10 | Perform and interpret an AFB stain  | S                 | P                      | Y             | DOAP session                          | Skill assessment               | 1                                     | Microbiology                                   |                           |
| CT1.12 | Enumerate the indications for tests including: serology, special cultures and polymerase chain reaction and sensitivity testing   | K                 | KH                     | Y             | Small group discussion, Lecture       | Short note/ Viva voce          |                                       | Microbiology                                   |                           |
| CT1.13 | Describe and discuss the origins, indications, technique of administration, efficacy and complications of the BCG vaccine   | K                 | KH                     | Y             | Lecture, Small group discussion       | Short note/ Viva voce          |                                       | Microbiology                                   |                           |

**FORENSIC MEDICINE INCLUDING TOXICOLOGY (CODE: FM)**

| Number                                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>FORENSIC MEDICINE &amp; TOXICOLOGY</b> |   |                                     |                        |               |   |                                |                                       |                      |                           |
| <b>Topic: General Information</b>         |   | <b>Number of competencies: (11)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| FM1.1                                     | Demonstrate knowledge of basics of Forensic Medicine like definitions of Forensic medicine, Clinical Forensic Medicine, Forensic Pathology, State Medicine, Legal Medicine and Medical Jurisprudence  | K                                   | KH                     | N             | Lecture, Small Group Discussion                               | Written/ Viva voce             |                                       |                      |                           |
| FM1.2                                     | Describe history of Forensic Medicine   | K                                   | KH                     | N             | Lecture, Small Group Discussion                               | Written/ Viva voce             |                                       |                      |                           |
| FM1.3                                     | Describe legal procedures including Criminal Procedure Code, Indian Penal Code, Indian Evidence Act, Civil and Criminal Cases, Inquest (Police Inquest and Magistrate's Inquest), Cognizable and Non-cognizable offences  | K                                   | KH                     | N             | Lecture, Small Group Discussion                               | Written/ Viva voce             |                                       |                      |                           |
| FM1.4                                     | Describe Courts in India and their powers: Supreme Court, High Court, Sessions court, Magistrate's Court, Labour Court, Family Court, Executive Magistrate Court and Juvenile Justice Board   | K                                   | KH                     | N             | Lecture, Small Group Discussion                               | Written/ Viva voce             |                                       |                      |                           |
| FM1.5                                     | Describe Court procedures including issue of Summons, conduct money, types of witnesses, recording of evidence oath, affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence & conduct of doctor in witness box | K                                   | KH                     | N             | Lecture, Small Group Discussion, Moot Court                   | Written/ Viva voce             |                                       |                      |                           |
| FM1.6                                     | Describe Offenses in Court including Perjury; Court strictures vis-a-vis Medical Officer  | K                                   | KH                     | N             | Lecture, Small Group Discussion                               | Written/ Viva voce             |                                       |                      |                           |
| FM1.7                                     | Describe Dying Declaration & Dying Deposition   | K                                   | KH                     | Y             | Lecture, Small Group Discussion                               | Written/ Viva voce             |                                       |                      |                           |
| FM1.8                                     | Describe the latest decisions/notifications/resolutions/circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc.   | K                                   | KH                     | Y             | Lecture, Small Group Discussion                               | Written/ Viva voce             |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---|---------------------------|
| FM1.9   | Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports especially<br>- maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres.<br>- maintenance of medico-legal register like accident register.<br>- documents of issuance of wound certificate<br>- documents of issuance of drunkenness certificate.<br>- documents of issuance of sickness and fitness certificate.<br>- documents for issuance of death certificate. -documents of Medical Certification of Cause of Death - Form Number4 and 4A<br>- documents for estimation of age by physical, dental and radiological examination and issuance of certificate | K                 | KH                     | Y             | Lecture, Small Group Discussion       | Written/ Viva voce             |                                       | Radiodiagnosis, General Surgery, General Medicine, Pediatrics |                           |
| FM1.10  | Select appropriate cause of death in a particular scenario by referring ICD 10 code  | K                 | KH                     | Y             | Lecture, Small Group Discussion       | Written/ Viva voce             |                                       |   |                           |
| FM1.11  | Write a correct cause of death certificate as per ICD 10 document  | S                 | SH                     | Y             | Lecture, Small Group Discussion       | Written/ Viva voce             |                                       |   |                           |
| <b>Topic: Forensic Pathology</b> <span style="margin-left: 200px;"><b>Number of competencies: (35)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |  |                   |                        |               |                                       |                                |                                       |   |                           |
| FM2.1   | Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical Death and Brainstem Death  | K                 | KH                     | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | Pathology   |                           |
| FM2.2   | Describe and discuss natural and unnatural deaths  | K                 | KH                     | Y             | Lecture, Small Group Discussion       | Written/ Viva voce             |                                       | Pathology   |                           |
| FM2.3   | Describe and discuss issues related to sudden natural deaths   | K                 | KH                     | Y             | Lecture, Small Group Discussion       | Written/ Viva voce             |                                       | Pathology   |                           |
| FM2.4   | Describe salient features of the Organ Transplantation and The Human Organ Transplant (Amendment) Act 2011 and discuss ethical issues regarding organ donation   | K                 | KH                     | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | AETCOM  |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                  | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-----------------------|---------------------------|
| FM2.5  | Discuss moment of death, modes of death - coma, asphyxia and syncope  | K                 | KH                     | Y             | Lecture, Small Group Discussion                        | Written/ Viva voce             |                                       | Psychiatry, Pathology |                           |
| FM2.6  | Discuss presumption of death and survivorship   | K                 | KH                     | Y             | Lecture, Small Group Discussion                        | Written/ Viva voce             |                                       |                       |                           |
| FM2.7  | Describe and discuss suspended animation  | K                 | KH                     | Y             | Lecture, Small group discussion                        | Written/ Viva voce             |                                       |                       |                           |
| FM2.8  | Describe and discuss postmortem changes including signs of death, cooling of body, post-mortem lividity, rigor mortis, cadaveric spasm, cold stiffening and heat stiffening   | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       |                       |                           |
| FM2.9  | Describe putrefaction, mummification, adipocere and maceration  | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       |                       |                           |
| FM2.10 | Discuss estimation of time since death  | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       |                       |                           |
| FM2.11 | Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination                       | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       | Pathology             |                           |
| FM2.12 | Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination   | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       | Pathology             |                           |
| FM2.13 | Describe and discuss obscure autopsy  | K                 | KH                     | Y             | Lecture, Small group discussion                        | Written/ Viva voce             |                                       | Pathology             |                           |
| FM2.14 | Describe and discuss examination of clothing, preservation of viscera on post-mortem examination for chemical analysis and other medico-legal purposes, post-mortem artefacts | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       |                       |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                  | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration               | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|------------------------------------|---------------------------|
| FM 2.15 | Describe special protocols for conduction of medico-legal autopsies in cases of death in custody or following violation of human rights as per National Human Rights Commission Guidelines  | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       |                                    |                           |
| FM2.16  | Describe and discuss examination of mutilated bodies or fragments, charred bones and bundle of bones  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session          | Written/ Viva voce/ OSPE       |                                       |                                    |                           |
| FM2.17  | Describe and discuss exhumation   | K                 | KH                     | Y             | Lecture, Small group discussion                        | Written/ Viva voce             |                                       |                                    |                           |
| FM2.18  | Crime Scene Investigation:-<br>Describe and discuss the objectives of crime scene visit, the duties & responsibilities of doctors on crime scene and the reconstruction of sequence of events after crime scene investigation   | K                 | KH                     | Y             | Lecture, Small group discussion                        | Written/ Viva voce             |                                       |                                    |                           |
| FM2.19  | Investigation of anaesthetic, operative deaths:<br>Describe and discuss special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences   | K                 | KH                     | Y             | Lecture, Small group discussion                        | Written/ Viva voce             |                                       | Anesthesiology,<br>General Surgery |                           |
| FM2.20  | Mechanical asphyxia:<br>Define, classify and describe asphyxia and medico-legal interpretation of post-mortem findings in asphyxial deaths  | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session | Written/ Viva voce/ OSPE       |                                       |                                    |                           |
| FM2.21  | Mechanical asphyxia:<br>Describe and discuss different types of hanging and strangulation including clinical findings, causes of death, post-mortem findings and medico-legal aspects of death due to hanging and strangulation including examination, preservation and dispatch of ligature material | K                 | KH                     | Y             | Lecture/Small group discussion, Autopsy DOAP session   | Written/ Viva voce/ OSPE       |                                       |                                    |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration      | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|---------------------------|---------------------------|
| FM2.22 | Mechanical asphyxia:<br>Describe and discuss patho-physiology, clinical features, post-mortem findings and medico-legal aspects of traumatic asphyxia, obstruction of nose & mouth, suffocation and sexual asphyxia  | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session               | Written/ Viva voce/ OSPE             |                                       |                           |                           |
| FM2.23 | Describe and discuss types, patho-physiology, clinical features, post-mortem findings and medico-legal aspects of drowning, diatom test and, gettler test.   | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session               | Written/ Viva voce/ OSPE             |                                       |                           |                           |
| FM2.24 | Thermal deaths: Describe the clinical features, post-mortem finding and medicolegal aspects of injuries due to physical agents like heat (heat-hyper-pyrexia, heat stroke, sun stroke, heat exhaustion/prostration, heat cramps [miner's cramp] or cold (systemic and localized hypothermia, frostbite, trench foot, immersion foot) | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session               | Written/ Viva voce                   |                                       |                           |                           |
| FM2.25 | Describe types of injuries, clinical features, patho-physiology, post-mortem findings and medico-legal aspects in cases of burns, scalds, lightning, electrocution and radiations  | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session               | Written/ Viva voce/ OSPE             |                                       | General Surgery           |                           |
| FM2.26 | Describe and discuss clinical features, post-mortem findings and medico-legal aspects of death due to starvation and neglect   | K                 | KH                     | Y             | Lecture/Small group discussion                                       | Written/ Viva voce                   |                                       |                           |                           |
| FM2.27 | Define and discuss infanticide, foeticide and stillbirth   | K                 | KH                     | Y             | Lecture, Small group discussion                                      | Written/ Viva voce                   |                                       | Pediatrics                |                           |
| FM2.28 | Describe and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP session of ossification centres, Hydrostatic test, Sudden Infants Death syndrome and Munchausen's syndrome by proxy  | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session               | Written/Viva voce / OSCE             |                                       | Pediatrics, Human Anatomy |                           |
| FM2.29 | Demonstrate respect to the directions of courts, while appearing as witness for recording of evidence under oath or affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence  | A and C           | SH                     | Y             | Lecture, Small group discussion, Moot Court, Court visits, Role Play | Role Play during internal assessment |                                       |                           |                           |

| Number                                   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method      | Number<br>required<br>to certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|--|--|------------------------------------|------------------------|---------------|---|-------------------------------------|---------------------------------------|--------------------------|---------------------------|
| FM2.30                                   | Have knowledge/awareness of latest decisions/notifications/resolutions/circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc  | A                                  | K                      | Y             | Lecture/Small group discussion                                | Written/ Viva voce                  |                                       |                          |                           |
| FM2.31                                   | Demonstrate ability to work in a team for conduction of medico-legal autopsies in cases of death following alleged negligence medical dowry death, death in custody or following violation of human rights as per National Human Rights Commission Guidelines on exhumation          | A                                  | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session        | Written/ Viva voce/ OSPE            |                                       |                          |                           |
| FM2.32                                   | Demonstrate ability to exchange information by verbal, or nonverbal communication to the peers, family members, law enforcing agency and judiciary   | A and C                            | KH                     | Y             | Lecture, Small group discussion, DOAP session                 | Written/ Viva voce                  |                                       | AETCOM                   |                           |
| FM2.33                                   | Demonstrate ability to use local resources whenever required like in mass disaster situations  | A and C                            | KH                     | Y             | Lecture/Small group discussion                                | Written/ Viva voce                  |                                       | Community Medicine       |                           |
| FM2.34                                   | Demonstrate ability to use local resources whenever required like in mass disaster situations  | A and C                            | KH                     | Y             | Lecture/Small group discussion                                | Written/ Viva voce                  |                                       | General Medicine, AETCOM |                           |
| FM2.35                                   | Demonstrate professionalism while conducting autopsy in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences   | A and C                            | KH/SH                  |               | Lecture, small group discussions, DOAP session                | Written/ Viva voce/ OSPE            |                                       | AETCOM                   |                           |
| <b>Topic: Clinical Forensic Medicine</b> |  | <b>Number of competencies:(33)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b>  |                                     |                                       |                          |                           |
| FM3.1                                    | IDENTIFICATION<br>Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, stature, age determination using morphology, teeth-eruption, decay, bite marks, bones-ossification centres, medico-legal aspects of age | K                                  | KH                     | Y             | Lecture, Small group discussion, Bedside clinic, DOAP session | Written/Viva voce/ skill assessment |                                       | Human Anatomy            |                           |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                            | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------------------|---------------------------|
| FM3.2  | IDENTIFICATION<br>Describe and discuss identification of criminals, unknown persons, dead bodies from the remains-hairs, fibers, teeth, anthropometry, dactylography, foot prints, scars, tattoos, poroscopy and superimposition  | K                 | KH                     | Y             | Lecture, Small group discussion                                  | Written/ Viva voce             |                                       |                                  |                           |
| FM3.3  | Mechanical injuries and wounds:<br>Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds and their medico-legal aspects  | K                 | KH                     | Y             | Lecture, Small group discussion<br>Bed side clinic, DOAP session | Written/ Viva voce/<br>OSCE    |                                       | General Surgery                  |                           |
| FM3.4  | Mechanical injuries and wounds:<br>Define injury, assault & hurt. Describe IPC pertaining to injuries   | K                 | KH                     | Y             | Lecture, Small group discussion                                  | Written/ Viva voce             |                                       | General Surgery                  |                           |
| FM3.5  | Mechanical injuries and wounds:<br>Describe accidental, suicidal and homicidal injuries. Describe simple, grievous and dangerous injuries. Describe ante-mortem and post-mortem injuries  | K                 | K/KH                   | Y             | Lecture/Small group discussion                                   | Written/ Viva voce             |                                       |                                  |                           |
| FM3.6  | Mechanical injuries and wounds:<br>Describe healing of injury and fracture of bones with its medico-legal importance  | K                 | K/KH                   | Y             | Lecture/Small group discussion                                   | Written/ Viva voce             |                                       | General Surgery                  |                           |
| FM3.7  | Describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death: Primary and Secondary   | K                 | K/KH                   | Y             | Lecture/Small group discussion                                   | Written/ Viva voce             |                                       | General Surgery,<br>Orthopaedics |                           |
| FM3.8  | Mechanical injuries and wounds:<br>Describe and discuss different types of weapons including dangerous weapons and their examination  | K                 | K/KH                   | Y             | Lecture/Small group discussion                                   | Written/ Viva voce             |                                       | General Surgery,<br>Orthopaedics |                           |
| FM3.9  | Firearm injuries:<br>Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking | K                 | K/KH                   | Y             | Lecture/Small group discussion                                   | Written/ Viva voce             |                                       | General Surgery,<br>Orthopaedics |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method   | Number<br>required<br>to certify<br>P | Vertical Integration                       | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|----------------------------------|---------------------------------------|--|---------------------------|
| FM3.10 | Firearm injuries:<br>Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session                  | Written/Viva voce/<br>OSCE       |                                       | General Surgery,<br>Orthopaedics           |                           |
| FM3.11 | Regional Injuries:<br>Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton  | K                 | K/KH                   | Y             | Lecture, Small group discussion,<br>Bed side clinic or<br>autopsy, DOAP session | Written/ Viva voce/<br>OSCE/OSPE |                                       | General Surgery,<br>Orthopaedics           |                           |
| FM3.12 | Regional Injuries<br>Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session       | Written/ Viva voce/<br>OSCE/OSPE |                                       | General Surgery,<br>Orthopaedics           |                           |
| FM3.13 | Describe different types of sexual offences. Describe various sections of IPC regarding rape including definition of rape (Section 375 IPC), Punishment for Rape (Section 376 IPC) and recent amendments notified till date  | K                 | K/KH                   | Y             | Lecture, Small group discussion   | Written/ Viva voce/<br>OSCE/OSPE |                                       | Obstetrics &<br>Gynaecology                |                           |
| FM3.14 | SEXUAL OFFENCES<br>Describe and discuss the examination of the victim of an alleged case of rape, and the preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session                  | Written/ Viva voce/<br>OSCE      |                                       | Obstetrics &<br>Gynaecology,<br>Psychiatry |                           |
| FM3.15 | SEXUAL OFFENCES<br>Describe and discuss examination of accused and victim of sodomy, preparation of report, framing of opinion, preservation and despatch of trace evidences in such cases   | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session                  | Written/ Viva voce/<br>OSCE      |                                       | Obstetrics &<br>Gynaecology,<br>Psychiatry |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                       | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| FM3.16 | SEXUAL OFFENCES<br>Describe and discuss adultery and unnatural sexual offences- sodomy, incest, lesbianism, buccal coitus, bestiality, indecent assault and preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases | K                 | K/KH                   | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Psychiatry       |                           |
| FM3.17 | Describe and discuss the sexual perversions fetishism, transvestism, voyeurism, sadism, necrophagia, masochism, exhibitionism, frotteurism, Necrophilia   | K                 | K/KH                   | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Psychiatry       |                           |
| FM3.18 | Describe anatomy of male and female genitalia, hymen and its types. Discuss the medico-legal importance of hymen. Define virginity, defloration, legitimacy and its medicolegal importance  | K                 | K/KH                   | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                   |                           |
| FM3.19 | Discuss the medicolegal aspects of pregnancy and delivery, signs of pregnancy, precipitate labour superfoetation, superfecundation and signs of recent and remote delivery in living and dead   | K                 | K/KH                   | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                   |                           |
| FM3.20 | Discuss disputed paternity and maternity  | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                   |                           |
| FM3.21 | Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC&PNDT) - Prohibition of Sex Selection Act 2003 and Domestic Violence Act 2005   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, AETCOM           |                           |
| FM3.22 | Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female   | K                 | K/KH                   | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Medicine |                           |
| FM3.23 | Discuss Sterilization of male and female, artificial insemination, Test Tube Baby, surrogate mother, hormonal replacement therapy with respect to appropriate national and state laws   | K                 | K/KH                   | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                   |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| FM3.24 | Discuss the relative importance of surgical methods of contraception (vasectomy and tubectomy) as methods of contraception in the National Family Planning Programme  | K                 | K/KH                   | N             | Lecture, Small group discussion       | Written                        |                                       | Obstetrics & Gynaecology            |                           |
| FM3.25 | Discuss the major results of the National Family Health Survey  | K                 | K/KH                   | N             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology            |                           |
| FM3.26 | Discuss the national Guidelines for accreditation, supervision & regulation of ART Clinics in India   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written                        |                                       | Obstetrics & Gynaecology            |                           |
| FM3.27 | Define, classify and discuss abortion, methods of procuring MTP and criminal abortion and complication of abortion. MTP Act 1971  | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, AETCOM    |                           |
| FM3.28 | Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Pathology |                           |
| FM3.29 | Describe and discuss child abuse and battered baby syndrome   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics                          |                           |
| FM3.30 | Describe and discuss issues relating to torture, identification of injuries caused by torture and its sequelae, management of torture survivors   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                                     |                           |
| FM3.31 | Torture and Human rights<br>Describe and discuss guidelines and Protocols of National Human Rights Commission regarding torture   | K                 | K/KH                   | N             | Lecture/Small group discussion        | Written/ Viva voce             |                                       |                                     |                           |
| FM3.32 | Demonstrate the professionalism while preparing reports in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences | A and C           | SH                     | Y             | Lecture, Small group discussion       | OSPE/Viva voce                 |                                       | AETCOM                              |                           |
| FM3.33 | Should be able to demonstrate the professionalism while dealing with victims of torture and human right violations, sexual assaults- psychological consultation, rehabilitation                                   | A and C           | K/KH/S<br>H            | Y             | Lecture/Small group discussion        | Written/ Viva voce             |                                       | AETCOM                              |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-------------------------|---------------------------|
| <b>Topic: Medical Jurisprudence (Medical Law and ethics)</b> |   | <b>Number of competencies: (30)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                         |                           |
| FM4.1  | Describe Medical Ethics and explain its historical emergence  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.2  | Describe the Code of Medical Ethics 2002 conduct, Etiquette and Ethics in medical practice and unethical practices & the dichotomy                              | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.3  | Describe the functions and role of Medical Council of India and State Medical Councils  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.4  | Describe the Indian Medical Register  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.5  | Rights/privileges of a medical practitioner, penal erasure, infamous conduct, disciplinary Committee, disciplinary procedures, warning notice and penal erasure | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.6  | Describe the Laws in Relation to medical practice and the duties of a medical practitioner towards patients and society   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.7  | Describe and discuss the ethics related to HIV patients   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.8  | Describe the Consumer Protection Act-1986 (Medical Indemnity Insurance, Civil Litigations and Compensations), Workman's Compensation Act & ESI Act              | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.9  | Describe the medico - legal issues in relation to family violence, violation of human rights, NHRC and doctors  | K                                   | KH                     | N             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.10   | Describe communication between doctors, public and media  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.11   | Describe and discuss euthanasia   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-------------------------|---------------------------|
| FM4.12 | Discuss legal and ethical issues in relation to stem cell research  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |
| FM4.13 | Describe social aspects of Medico-legal cases with respect to victims of assault, rape, attempted suicide, homicide, domestic violence, dowry- related cases  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.14 | Describe & discuss the challenges in managing medico-legal cases including development of skills in relationship management – Human behaviour, communication skills, conflict resolution techniques   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.15 | Describe the principles of handling pressure – definition, types, causes, sources and skills for managing the pressure while dealing with medico-legal cases by the doctor  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.16 | Describe and discuss Bioethics  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.17 | Describe and discuss ethical Principles: Respect for autonomy, non-maleficence, beneficence & justice   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |
| FM4.18 | Describe and discuss medical negligence including civil and criminal negligence, contributory negligence, corporate negligence, vicarious liability, Res Ipsa Loquitor, prevention of medical negligence and defenses in medical negligence litigations | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.19 | Define Consent. Describe different types of consent and ingredients of informed consent. Describe the rules of consent and importance of consent in relation to age, emergency situation, mental illness and alcohol intoxication                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.20 | Describe therapeutic privilege, Malingering, Therapeutic Misadventure, Professional Secrecy, Human Experimentation  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | AETCOM                  |                           |

| Number                            | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|-----------------------------------|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|-------------------------|---------------------------|
| FM4.21                            | Describe Products liability and Medical Indemnity Insurance  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.22                            | Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath.   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |
| FM4.23                            | Describe the modified Declaration of Geneva and its relevance  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |
| FM4.24                            | Enumerate rights, privileges and duties of a Registered Medical Practitioner. Discuss doctor- patient relationship: professional secrecy and privileged communication                    | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.25                            | Clinical research & Ethics<br>Discuss human experimentation including clinical trials  | K                                   | KH                     | N             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |
| FM4.26                            | Discuss the constitution and functions of ethical committees   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |
| FM4.27                            | Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals  | K                                   | KH                     | N             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM,<br>Pharmacology |                           |
| FM4.28                            | Demonstrate respect to laws relating to medical practice and Ethical code of conduct prescribed by Medical Council of India and rules and regulations prescribed by it from time to time | A and C                             | SH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.29                            | Demonstrate ability to communicate appropriately with media, public and doctors  | A and C                             | KH/SH                  | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM                  |                           |
| FM4.30                            | Demonstrate ability to conduct research in pursuance to guidelines or research ethics  | A and C                             | KH/SH                  | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | AETCOM                  |                           |
| <b>Topic: Forensic Psychiatry</b> |  | <b>Number of competencies: (06)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                         |                           |
| FM5.1                             | Classify common mental illnesses including post-traumatic stress disorder (PTSD)   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Psychiatry              |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|---------------------------------|---------------------------|
| FM5.2   | Define, classify and describe delusions, hallucinations, illusion, lucid interval and obsessions with exemplification   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Psychiatry                      |                           |
| FM5.3   | Describe Civil and criminal responsibilities of a mentally ill person   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Psychiatry                      |                           |
| FM5.4   | Differentiate between true insanity from feigned insanity   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Psychiatry                      |                           |
| FM5.5   | Describe & discuss Delirium tremens   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Psychiatry,<br>General Medicine |                           |
| FM5.6   | Describe the Indian Mental Health Act, 1987 with special reference to admission, care and discharge of a mentally ill person  | K                                   | K/KH                   | N             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Psychiatry                      |                           |
| <b>Topic: Forensic Laboratory investigation in medical legal practice</b> |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                                 |                           |
| FM6.1   | Describe different types of specimen and tissues to be collected both in the living and dead: Body fluids (blood, urine, semen, faeces saliva), Skin, Nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting.<br>Describe Locard's Exchange Principle | K                                   | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pathology                       |                           |
| FM6.2   | Describe the methods of sample collection, preservation, labelling, dispatch, and interpretation of reports   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                                 |                           |
| FM6.3   | Demonstrate professionalism while sending the biological or trace evidences to Forensic Science laboratory, specifying the required tests to be carried out, objectives of preservation of evidences sent for examination, personal discussions on interpretation of findings   | A and C                             | KH/SH                  | Y             | Lecture, Small group discussions, DOAP sessions               | Viva voce / OSPE               |                                       |                                 |                           |



| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>Topic: Emerging technologies in Forensic Medicine</b> |  | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b>   |                                |                                       |                      |                           |
| FM7.1  | Enumerate the indications and describe the principles and appropriate use for:<br>- DNA profiling<br>Facial reconstruction<br>- Polygraph (Lie Detector)<br>- Narcoanalysis,<br>- Brain Mapping,<br>- Digital autopsy,<br>- Virtual Autopsy,<br>- Imaging technologies | K                                   | K/KH                   | N             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Toxicology: General Toxicology</b>             |  | <b>Number of competencies: (10)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>  |                                |                                       |                      |                           |
| FM8.1  | Describe the history of Toxicology   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Pharmacology         |                           |
| FM8.2  | Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Pharmacology         |                           |
| FM8.3  | Describe the various types of poisons, Toxicokinetics, and Toxicodynamics and diagnosis of poisoning in living and dead  | K                                   | K/KH                   | Y             | Lecture, Small group discussion                                | Written/viva voce              |                                       | Pharmacology         |                           |
| FM8.4  | Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons  | K                                   | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Pharmacology         |                           |
| FM8.5  | Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis   | K                                   | K/KH                   | Y             | Lecture, Small group discussion, Autopsy, DOAP session         | Written/ Viva voce/ OSPE       |                                       | Pharmacology         |                           |
| FM8.6  | Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India   | K                                   | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology         |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration           | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--------------------------------|---------------------------|
| FM8.7   | Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids   | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session          | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM8.8   | Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination   | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session          | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM8.9   | Describe the procedure of intimation of suspicious cases or actual cases of foul play to the police, maintenance of records, preservation and despatch of relevant samples for laboratory analysis.   | K                 | K/KH                   | Y             | Lecture, Small group discussion   | Written/ Viva voce             |                                       |                                |                           |
| FM8.10  | Describe the general principles of Analytical Toxicology and give a brief description of analytical methods available for toxicological analysis: Chromatography – Thin Layer Chromatography, Gas Chromatography, Liquid Chromatography and Atomic Absorption Spectroscopy  | K                 | K/KH                   | Y             | Lecture, Small group discussion   | Written/ Viva voce             |                                       |                                |                           |
| <b>Topic: Toxicology : Chemical Toxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (06)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |   |                   |                        |               |   |                                |                                       |                                |                           |
| FM9.1   | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic-Carbolic Acid (phenol), Oxalic and acetylsalicylic acids | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM9.2   | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration           | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--------------------------------|---------------------------|
| FM9.3  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium   | K                                   | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM9.4  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol   | K                                   | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM9.5  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide     | K                                   | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| FM9.6  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases | K                                   | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| <b>Topic: Toxicology : Pharmaceutical Toxicology</b> |  | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b>          |                                |                                       |                                |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration           | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--------------------------------|---------------------------|
| FM10.1   | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to:<br>i. Antipyretics – Paracetamol, Salicylates<br>ii. Anti-Infectives (Common antibiotics – an overview)<br>iii. Neuropsychotoxicology Barbiturates, benzodiazepins phenytoin, lithium, haloperidol, neuroleptics, tricyclics<br>iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants<br>v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis<br>vi. Gastro-Intestinal and Endocrinal Drugs – Insulin | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE       |                                       | Pharmacology, General Medicine |                           |
| <b>Topic: Toxicology : Biotoxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>            |   |                   |                        |               |   |                                |                                       |                                |                           |
| FM11.1   | Describe features and management of Snake bite, scorpion sting, bee and wasp sting and spider bite  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Autopsy                                | Written/ Viva voce             |                                       | General Medicine               |                           |
| <b>Topic: Toxicology : Sociomedical Toxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>  |   |                   |                        |               |   |                                |                                       |                                |                           |
| FM12.1   | Describe features and management of abuse/poisoning with following camicals: Tobacco, cannabis, amphetamines, cocaine, hallucinogens, designer drugs & solvent  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Autopsy                                | Written/ Viva voce             |                                       | General Medicine               |                           |
| <b>Topic: Toxicology : Environmental Toxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (02)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |   |                   |                        |               |   |                                |                                       |                                |                           |
| FM13.1   | Describe toxic pollution of environment, its medico-legal aspects & toxic hazards of occupation and industry  | K                 | K/KH                   | Y             | Lecture, Small group discussion   | Written/ Viva voce             |                                       | General Medicine               |                           |
| FM13.2   | Describe medico-legal aspects of poisoning in Workman's Compensation Act  | K                 | K/KH                   | Y             | Lecture, Small group discussion   | Written/ Viva voce             |                                       |                                |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N)                       | Suggested Teaching<br>Learning method                  | Suggested<br>Assessment method               | Number<br>required<br>to certify<br>P                         | Vertical Integration  | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------------------------------|--|--|---|-----------------------|---------------------------|
| <b>Topic: Skills in Forensic Medicine &amp; Toxicology</b> |  |                   |                        |                                     |  |  |   |                       |                           |
|  |  |                   |                        | <b>Number of competencies: (22)</b> |  |  | <b>Number of procedures that require certification: (NIL)</b> |                       |                           |
| FM14.1   | Examine and prepare Medico-legal report of an injured person with different etiologies in a simulated/ supervised environment  | S                 | SH/P                   | Y                                   | Bedside clinic (ward/casualty), Small group discussion | Log book/ Skill station/<br>Viva voce / OSCE |   |                       |                           |
| FM14.2   | Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment      | S                 | SH                     | Y                                   | Bedside clinic (ward/casualty), Small Group discussion | Log book/ Skill station/<br>Viva voce / OSCE |   | General Medicine      |                           |
| FM14.3   | Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination | S                 | SH                     | Y                                   | Bedside clinic, Small Group discussion, DOAP session   | Skill lab/ Viva voce                         |   | General Medicine      |                           |
| FM14.4   | Conduct and prepare report of estimation of age of a person for medico-legal and other purposes & prepare medico-legal report in a simulated/ supervised environment | S                 | KH                     | Y                                   | Small group discussion, Demonstration                  | Log book/ Skill station/<br>Viva voce / OSCE |   |                       |                           |
| FM14.5   | Conduct & prepare post-mortem examination report of varied etiologies (at least 15) in a simulated/ supervised environment   | S                 | KH                     | Y                                   | Small group discussion, Autopsy, DOAP session          | Log book/ Skill station/<br>Viva voce / OSCE |   |                       |                           |
| FM14.6   | Demonstrate and interpret medico-legal aspects from examination of hair (human & animal) fibre, semen & other biological fluids                                      | S                 | KH                     | Y                                   | Small group discussion, Lecture                        | Log book/ Skill station/<br>Viva voce / OSCE |   |                       |                           |
| FM14.7   | Demonstrate & identify that a particular stain is blood and identify the species of its origin   | S                 | KH                     | Y                                   | Small group discussion, Lecture                        | Log book/Skill station/Viva voce             |   | Pathology, Physiology |                           |
| FM14.8   | Demonstrate the correct technique to perform and identify ABO & RH blood group of a person   | S                 | SH                     | Y                                   | Small group discussion, DOAP session                   | Log book/Skill station/Viva voce             |   | Pathology, Physiology |                           |
| FM14.9   | Demonstrate examination of & present an opinion after examination of skeletal remains in a simulated/ supervised environment   | S                 | SH                     | Y                                   | Small group discussion, DOAP session                   | Log book/Skill station/Viva voce             |   |                       |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                 | Suggested<br>Assessment method               | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---|--|---------------------------------------|----------------------|---------------------------|
| FM14.10 | Demonstrate ability to identify & prepare medicolegal inference from specimens obtained from various types of injuries e.g. contusion, abrasion, laceration, firearm wounds, burns, head injury and fracture of bone   | S                 | KH                     | Y             | Small group discussion, DOAP session                  | Log book/Skill station/<br>Viva voce/ OSPE   |                                       |                      |                           |
| FM14.11 | To identify & describe weapons of medicolegal importance which are commonly used e.g. lathi, knife, kripa, axe, gandasa, gupta, farsha, dagger, bhalla, razor & stick.<br>Able to prepare report of the weapons brought by police and to give opinion regarding injuries present on the person as described in injury report/ PM report so as to connect weapon with the injuries. (Prepare injury report/ PM report must be provided to connect the weapon with the injuries) | S                 | KH                     | Y             | Small group discussion, DOAP session                  | Log book/Skill station/<br>Viva voce/ OSPE   |                                       |                      |                           |
| FM14.12 | Describe the contents and structure of bullet and cartridges used & to provide medico-legal interpretation from these  | S                 | KH                     | Y             | Small group discussion, DOAP session                  | Log book/ Skill station/Viva voce            |                                       |                      |                           |
| FM14.13 | To estimate the age of foetus by post-mortem examination   | S                 | KH                     | Y             | Small group discussion, DOAP session                  | Theory/ Clinical assessment/ Viva voce       |                                       |                      |                           |
| FM14.14 | To examine & prepare report of an alleged accused in rape/unnatural sexual offence in a simulated/ supervised environment  | S                 | KH                     | Y             | Small group discussion, DOAP session                  | Log book/ Skill station/<br>Viva voce / OSCE |                                       |                      |                           |
| FM14.15 | To examine & prepare medico-legal report of a victim of sexual offence/unnatural sexual offence in a simulated/ supervised environment   | S                 | KH                     | Y             | Small group discussion, DOAP session                  | Log book/ Skill station/<br>Viva voce / OSCE |                                       |                      |                           |
| FM14.16 | To examine & prepare medico-legal report of drunk person in a simulated/ supervised environment  | S                 | KH                     | Y             | Small group discussion, Bed side clinic, DOAP session | Log book/ Skill station/<br>Viva voce / OSCE |                                       |                      |                           |
| FM14.17 | To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.  | S                 | KH                     | Y             | Small group discussion, DOAP session                  | Log book/ Viva voce                          |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                  | Suggested<br>Assessment method               | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|--|---------------------------------------|----------------------|---------------------------|
| FM14.18   | To examine & prepare medico-legal report of a person in police, judicial custody or referred by Court of Law and violation of human rights as requirement of NHRC, who has been brought for medical examination  | S                 | KH                     | Y             | Small group discussion, DOAP session                                   | Log book/ Skill station/<br>Viva voce / OSCE |                                       |                      |                           |
| FM14.19   | To identify & prepare medico-legal inference from histo-pathological slides of Myocardial Infarction, pneumonitis, tuberculosis, brain infarct, liver cirrhosis, brain haemorrhage, bone fracture, Pulmonary oedema, brain oedema, soot particles, diatoms & wound healing | S                 | KH                     | Y             | Small group discussion, DOAP session                                   | Log book/ Skill station/<br>Viva voce        |                                       |                      |                           |
| FM14.20   | To record and certify dying declaration in a simulated/ supervised environment   | S                 | KH                     | Y             | Small group discussion, Role Play, Bed side clinic DOAP session        | Log book/ Skill station/<br>Viva voce /OSCE  |                                       |                      |                           |
| FM14.21   | To collect, preserve, seal and dispatch exhibits for DNA-Finger printing using various formats of different laboratories.  | S                 | KH                     | Y             | Small group discussion, Lecture  | Log book/ Skill station/Viva voce            |                                       |                      |                           |
| FM14.22   | To give expert medical/ medico-legal evidence in Court of law  | S                 | KH                     | Y             | Small group discussion, Lecture, DOAP session, role play, Court Visits | Log book/<br>Viva voce/OSCE                  |                                       |                      |                           |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |  |                   |                        |               |  |  |                                       |                      |                           |
| <b>Integration</b>  |  |                   |                        |               |  |  |                                       |                      |                           |
| <b>Human Anatomy</b>  |  |                   |                        |               |  |  |                                       |                      |                           |
| AN14.3  | Describe the importance of ossification of lower end of femur & upper end of tibia   | K                 | KH                     | Y             | Lecture  | Viva voce/Practicals                         |                                       | Forensic Medicine    |                           |

| Number                  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration                        | Horizontal<br>Integration |
|-------------------------|--|-------------------|------------------------|---------------|---------------------------------------|---|---------------------------------------|---|---------------------------|
| <b>Pharmacology</b>     |  |                   |                        |               |                                       |   |                                       |   |                           |
| PH1.22                  | Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce                       |                                       | Psychiatry                                  | Forensic Medicine         |
| PH5.7                   | Demonstrate an understanding of the legal and ethical aspects of prescribing drugs   | K                 | KH                     | Y             | Small group discussion                | short note/Viva voce                    |                                       |   | Forensic Medicine         |
| <b>Radiodiagnosis</b>   |  |                   |                        |               |                                       |   |                                       |   |                           |
| RD1.13                  | Describe the components of the PC & PNDT act and its medicolegal implications  | K                 | KH                     | Y             | Lecture, Small group discussion       |   |                                       | Obstetrics & Gynaecology, Forensic Medicine |                           |
| <b>Psychiatry</b>       |  |                   |                        |               |                                       |   |                                       |   |                           |
| PS19.3                  | Describe and discuss the basic legal and ethical issues in psychiatry  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | Forensic Medicine<br>AETCOM                 |                           |
| <b>General Medicine</b> |  |                   |                        |               |                                       |   |                                       |   |                           |
| IM20.1                  | Enumerate the poisonous snakes of your area and describe the distinguishing marks of each  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | Forensic Medicine,<br>Pharmacology          |                           |
| IM20.2                  | Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient with a snake bite in the field | S                 | SH                     | Y             | DOAP session                          | Skill assessment/<br>Written/ Viva voce |                                       | Forensic Medicine                           |                           |
| IM20.3                  | Describe the initial approach to the stabilisation of the patient who presents with snake bite   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | Forensic Medicine                           |                           |
| IM20.4                  | Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite                                  | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment                        |                                       | Forensic Medicine                           |                           |



| Number                              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|-------------------------------------|--|-------------------|------------------------|---------------|---|--------------------------------------|---------------------------------------|---------------------------------|---------------------------|
| IM21.2                              | Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification                     | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.3                              | Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.4                              | Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy                               | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.5                              | Observe and describe the functions and role of a poison center in suspected poisoning  | S                 | KH                     | Y             | DOAP session                                  | document in log book                 |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.6                              | Describe the medico legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico legal report on a suspected poisoning | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.7                              | Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy  | A/C               | SH                     | Y             | DOAP session                                  | Skill assessment                     |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.8                              | Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture                      | K                 | KH                     | Y             | DOAP session                                  | Skill assessment                     |                                       | Forensic Medicine, Psychiatry   |                           |
| <b>Obstetrics &amp; Gynaecology</b> |  |                   |                        |               |   |                                      |                                       |                                 |                           |
| OG1.3                               | Define and Discuss still birth and abortion  | K                 | KH                     | Y             | Lecture, Small group discussions              | Short notes                          |                                       | Forensic Medicine               |                           |
| OG9.2                               | Describe the steps and observe/ assist in the performance of an MTP evacuation   | S                 | SH                     | Y             | DOAP session, Bedside clinic                  | Viva voce                            |                                       | Forensic Medicine               |                           |

| Number                 | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|------------------------|--|-------------------|------------------------|---------------|---|---|---------------------------------------|------------------------------|---------------------------|
| OG20.1                 | Enumerate the indications and describe and discuss the legal aspects, indications, methods for first and second trimester MTP; complications and management of complications of medical termination of pregnancy | K                 | KH                     | Y             | Lecture, Small group discussions              | Written/ Viva voce                      |                                       | Forensic Medicine            |                           |
| OG20.2                 | In a simulated environment administer informed consent to a person wishing to undergo medical termination of pregnancy   | S/A/C             | SH                     | Y             | DOAP session                                  | Skill assessment                        |                                       | Forensic Medicine            |                           |
| OG20.3                 | Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC& PNDT) Act 1994 & its amendments  | K                 | K/KH                   | Y             | Lecture, Small group discussions              | Written/ Viva voce                      |                                       | Forensic Medicine            |                           |
| <b>General Surgery</b> |  |                   |                        |               |   |   |                                       |                              |                           |
| SU8.1                  | Describe the principles of Ethics as it pertains to surgery  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce/<br>skill assessment |                                       | Forensic Medicine,<br>AETCOM |                           |
| SU8.2                  | Demonstrate Professionalism and empathy to the patient undergoing surgery  | A/C               | SH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce/<br>skill assessment |                                       | Forensic Medicine,<br>AETCOM |                           |
| SU8.3                  | Discuss Medico legal issues in surgical practice   | A/C               | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce/<br>skill assessment |                                       | Forensic Medicine,<br>AETCOM |                           |

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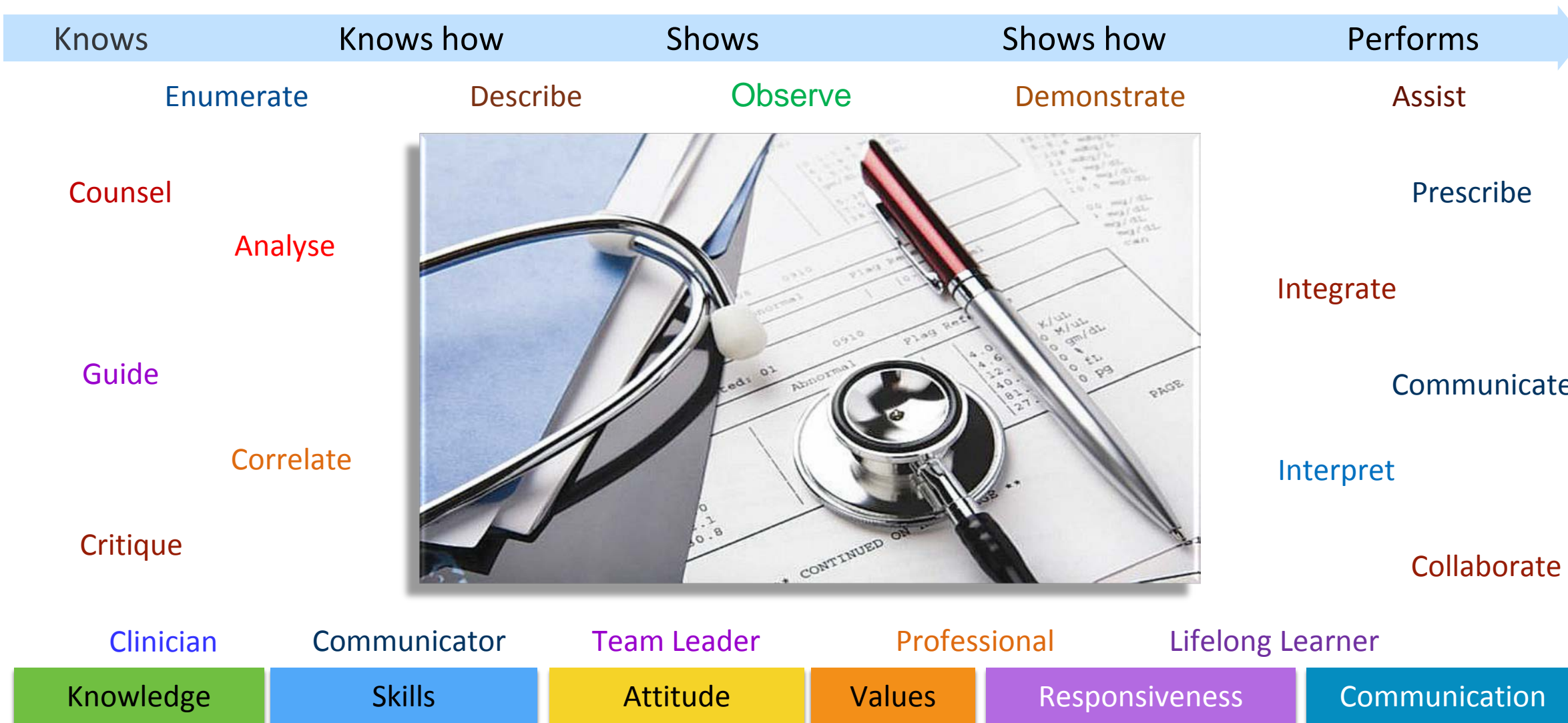
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# MEDICAL COUNCIL OF INDIA

## COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE



**COMPETENCY BASED UNDERGRADUATE CURRICULUM  
FOR THE  
INDIAN MEDICAL GRADUATE**

**2018**



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### BOARD OF GOVERNORS IN SUPERSESSION OF MEDICAL COUNCIL OF INDIA

#### FOREWORD

The Medical Council of India, aware of its responsibilities in creation of trained health manpower, has been engaged for the past few years in updating the medical curriculum for undergraduates and postgraduates to be in consonance with the changing health needs of the country. The task of updating and reorganization of the postgraduate curriculum in nearly 50 broad specialty disciplines to the competency pattern was accomplished by the Academic Cell of the Council with the help of subject experts and members of its Reconciliation Board and have been uploaded on the Council Website for use of the medical fraternity.

The Council visualized that the Indian Medical Graduate, at the end of the undergraduate training program, should be able to recognize "health for all" as a national goal and should be able to fulfill his/her societal obligations towards the realization of this goal. To fulfill the mandate of the undergraduate medical curriculum which is to produce a clinician, who understands and is able to provide preventive, promotive, curative, palliative and holistic care to his patients, the curriculum must enunciate clearly the competencies the student must be imparted and must have learnt, with clearly defined teaching-learning strategies and effective methods of assessment. The student should be trained to effectively communicate with patients and their relatives in a manner respectful of the patient's preferences, values, beliefs, confidentiality and privacy and to this purpose, a book on Attitude, Ethics & Communication was prepared by the Medical Council of India; the teaching faculty of medical colleges have been receiving training on this module since 2015.

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-2-

Competency based Medical Education provides an effective outcome-based strategy where various domains of teaching including teaching learning methods and assessment form the framework of competencies. Keeping this objective as the core ingredient, the Medical Council of India with the help of panel of experts drawn from across the country, laid the basic framework for the revised undergraduate medical curriculum. Over the past four years, a group of highly committed medical professionals working as Members of the MCI Reconciliation Board developed this information into a document incorporating appropriate teaching-learning strategies, tools and techniques of teaching, and modes of assessment which have culminated in the current competency based undergraduate curriculum. We understand that maximum efforts were made to encourage integrated teaching between traditional subject areas using a problem-based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both the understanding and resolution of the problem. All efforts have been made to de-emphasize compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases. We are proud of their work accomplishment and congratulate them in the onerous task accomplished.

It gives us great satisfaction to state that the '**competency based undergraduate curriculum**' that has been prepared by the Medical Council of India would definitely serve the cause of medical education and in creating a competent Indian Medical Graduate to serve the community.

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# **COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE**

## **Preamble**

The new Graduate Medical Education Regulations attempts to stand on the shoulder of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to take the learner to provide health care to the evolving needs of the nation and the world.

More than twenty years have passed since the existing Regulations on Graduate Medical Education, 1997 was notified, necessitating a relook at all aspects of the various components in the existing regulations and adapt them to the changing demography, socio-economic context, perceptions, values and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration. The strong and forward looking fundamentals enshrined in the Regulations on Graduate Medical Education, 1997 has made this job easier. A comparison between the 1997 Regulations and proposed Graduate Medical Education Regulations, 2018 will reveal that the 2018 Regulations have evolved from several key principles enshrined in the 1997 Regulations.

The thrust in the new regulations is continuation and evolution of thought in medical education making it more learner-centric, patient-centric, gender-sensitive, outcome -oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using “broad competencies”; instead, the reports have written end of phase subject (sub) competencies. These “sub-competencies” can be mapped to the global competencies in the Graduate Medical Education Regulations.

A significant attempt has been made in the outcome driven undergraduate curriculum to provide the orientation and the skills necessary for life-long learning to enable proper care of the patient. In particular, the curriculum provides for early clinical exposure, electives and longitudinal care. Skill acquisition is an indispensable component of the learning process in medicine. The curriculum reinforces this aspect by necessitating certification of certain essential skills. The experts and the writing group have factored in patient availability, access, consent, number of students in a class etc. in suggesting skill acquisition and assessment methods; use of skills labs, simulated and guided environments are encouraged. In the pre-internship years,- the highest level of skill acquisition is a show how (SH) in a simulated or guided environment; few skills require independent performance and certification - these are marked with P (for performance). Opportunity to 'perform' these skills will be available during internship.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated curriculum time in the form of a longitudinal program based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter-disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought, social and economic position and gender.

In addition to the above, an attempt has been made to allow students from diverse educational streams and backgrounds to transition appropriately through a Foundation Course. Dedicated time has been allotted for self directed learning and co-curricular activities.

Formative and internal assessments have been streamlined to achieve the objectives of the curriculum. Minor tweaks to the summative assessment have been made to reflect evolving thought and regulatory requirements. Curricular governance and support have been strengthened, increasing the involvement of Curriculum Committee and Medical Education Departments/Units.

The curriculum document in conjunction with the new Graduate Medical Education Regulations (GMR), when notified, must be seen as a "living document" that should evolve as stakeholder requirements and aspirations change. We hope that the current GMR does just that. The Medical Council of India is

grateful to all the teachers, subject experts, process experts, patients, students and trainees who have contributed through invaluable inputs, intellectual feedbacks and valuable time spent to make this possible. This document would not have been possible without the dedicated and unstinting intellectual, mental and time-consuming efforts of the members of the Reconciliation Board of the Council and the Academic Cell of MCI.

## How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created by subject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. They must be used with reference to and in the context of the Regulations.

### Section 1

#### Competencies for the Indian Medical Graduate

**Section 1** - provides the global competencies extracted from the Graduate Medical Education Regulations, 2018. The global competencies identified as defining the roles of the **Indian Medical Graduate** are the broad competencies that the learner has to aspire to achieve; teachers and curriculum planners must ensure that the learning experiences are aligned to this Manual.

#### Extract from the Graduate Medical Education Regulations, 2018

##### 2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an “Indian Medical Graduate” (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed:-

## **2.1. National Goals**

At the end of undergraduate program, the Indian Medical Graduate should be able to:

- (a) recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.
- (b) learn every aspect of National policies on health and devote herself/himself to its practical implementation.
- (c) achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- (d) develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- (e) become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

## **2.2. Institutional Goals**

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should:

- (a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.
- (b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
- (c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.
- (d) be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.



- (e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
- (f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:
  - (i) Family Welfare and Maternal and Child Health (MCH);
  - (ii) Sanitation and water supply;
  - (iii) Prevention and control of communicable and non-communicable diseases;
  - (iv) Immunization;
  - (v) Health Education;
  - (vi) Indian Public Health Standards (IPHS) at various level of service delivery;
  - (vii) Bio-medical waste disposal; and
  - (viii) Organizational and or institutional arrangements.
- (g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.
- (h) be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
- (i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
- (j) be competent to work in a variety of health care settings.
- (k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed in Table 11 Certifiable procedural skills – A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate, as given in the Graduate Medical Education Regulations, 2018

### **2.3. Goals for the Learner**

In order to fulfil this goal, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

- 2.3.1. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- 2.3.2. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.
- 2.3.3. Communicator with patients, families, colleagues and community.
- 2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.
- 2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

### **3. Competency Based Training Programme of the Indian Medical Graduate**

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

#### **3.1. *Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion***

- 3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- 3.1.2. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
- 3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

- 3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- 3.1.5. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.6. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- 3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- 3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- 3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- 3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- 3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
  - i) Disease prevention,
  - ii) Health promotion and cure,
  - iii) Pain and distress alleviation, and
  - iv) Rehabilitation and palliation.

- 3.1.13 Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.
- 3.1.14 Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.
- 3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

**3.2. *Leader and member of the health care team and system***

- 3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- 3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- 3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- 3.2.4 Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- 3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- 3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

**3.3. *Communicator with patients, families, colleagues and community***

- 3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- 3.3.2 Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- 3.3.3 Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making.

**3.4. Lifelong learner committed to continuous improvement of skills and knowledge**

3.4.1. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4. Demonstrate ability to search (including through electronic means), and critically reevaluate the medical literature and apply the information in the care of the patient.

3.4.5. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

**3.5. *Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession***

3.5.1. Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2. Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3. Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4. Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5. Demonstrate a commitment to the growth of the medical profession as a whole.

## Section 2

### Subject-wise outcomes

Section 2 contains subject-wise outcomes so called “sub-competencies” that must be achieved at the end of instruction in that subject. These are organised in tables and have two parts. The core subject outcomes are in first part. The second part in the same document (titled Integration) contains outcomes/competencies in other subjects which have been identified by experts in those subjects as requiring alignment or integration with the core subject.

Outcomes (competencies) in each subject are grouped according to topics number-wise. It is important to review the individual outcomes (competencies) in the light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified. The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’ indicates independent performance without supervision and is required rarely in the pre-internship period. The outcome is a core (Y - must achieve) or a non-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under the section “definitions used in this document”. The suggested number of times a skill must be performed independently for certification in the learner’s log book is also given. Last two columns indicate subjects within the same phase and other phases with which the topic can be taught - together - aligned (temporal coordination), shared, correlated or nested.

The number of topics and competencies in each subject are given below:

## **Topics & outcomes in Pre-clinical & Para-clinical subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                           | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|---|-------------------------|---------------------------|
| 1.             | <b>Human Anatomy</b>                      | 82                      | 409                       |
| 2.             | <b>Physiology</b>                         | 11                      | 137                       |
| 3.             | <b>Biochemistry</b>                       | 11                      | 89                        |
| 4.             | <b>Pharmacology</b>                       | 05                      | 85                        |
| 5.             | <b>Pathology</b>                          | 36                      | 182                       |
| 6.             | <b>Microbiology</b>                       | 08                      | 54                        |
| 7.             | <b>Forensic Medicine &amp; Toxicology</b> | 14                      | 162                       |
|                | <b>Total</b>                              | <b>167</b>              | <b>1118</b>               |

## **Topics & outcomes in Medicine and Allied subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                               | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|---|-------------------------|---------------------------|
| <b>1.</b>      | <b>Community Medicine</b>                     | 20                      | 107                       |
| <b>2.</b>      | <b>General Medicine</b>                       | 26                      | 506                       |
| <b>3.</b>      | <b>Respiratory Medicine</b>                   | 02                      | 47                        |
| <b>4.</b>      | <b>Pediatrics</b>                             | 35                      | 406                       |
| <b>5.</b>      | <b>Psychiatry</b>                             | 19                      | 117                       |
| <b>6.</b>      | <b>Dermatology, Venereology &amp; Leprosy</b> | 18                      | 73                        |
| <b>7.</b>      | <b>Physical Medicine &amp; Rehabilitation</b> | 09                      | 43                        |
|                | <b>Total</b>                                  | <b>129</b>              | <b>1299</b>               |



## **Topics & outcomes in Surgery and Allied subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                     | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|-------------------------------------|-------------------------|---------------------------|
| <b>1.</b>      | <b>General Surgery</b>              | 30                      | 133                       |
| <b>2.</b>      | <b>Ophthalmology</b>                | 09                      | 60                        |
| <b>3.</b>      | <b>Otorhinolaryngology</b>          | 04                      | 76                        |
| <b>4.</b>      | <b>Obstetrics &amp; Gynaecology</b> | 38                      | 126                       |
| <b>5.</b>      | <b>Orthopedics</b>                  | 14                      | 39                        |
| <b>6.</b>      | <b>Anesthesiology</b>               | 10                      | 46                        |
| <b>7.</b>      | <b>Radiodiagnosis</b>               | 01                      | 13                        |
| <b>8.</b>      | <b>Radiotherapy</b>                 | 05                      | 16                        |
| <b>9.</b>      | <b>Dentistry</b>                    | 05                      | 23                        |
|                | <b>Total</b>                        | <b>116</b>              | <b>532</b>                |

## **Section 3**

### **Sample topics used for alignment & integration**

Section 3 contains a sample selection of topics that run across the phases which can be used for alignment and integration. These are suggestions and institutions can select their own set of topics which can run across phases.

It is important to design the curriculum with a view to ensure with several broad outcomes in mind: a) achievement of the broad competencies by the learner at the end of the MBBS program, b) retain the subject - wise character of learning and assessment and ensure that phase-wise subject outcomes are met and assessed, c) teaching topics that are similar together thereby reducing redundancy and allowing the learner to integrate the concept as the most important step in integration (alignment or temporal coordination) (see document on integration), and d) align learning and assessment experiences to the outcome and the level of achievement specified.

## **Understanding the competencies table**

## Understanding the competencies table

| A  | B   | C      | D         | E    | F                                  | G                           | H                           | I                    | J                      |
|--|---|--------|-----------|------|------------------------------------|-----------------------------|-----------------------------|----------------------|------------------------|
| No.                                      | Competencies  | Domain | K/KH/SH/P | Core | Suggested Teaching Learning Method | Suggested Assessment method | No. required to certify (P) | Vertical Integration | Horizontal Integration |
| <b>Physiology</b>                        |   |        |           |      |                                    |                             |                             |                      |                        |
| <b>Summary</b>                           |   |        |           |      |                                    |                             |                             |                      |                        |
| Name of Topic: <b>General Physiology</b> |   |        |           |      |                                    |                             |                             |                      |                        |
| Number of Competencies: <b>(08)</b>      |   |        |           |      |                                    |                             |                             |                      |                        |
| PY1.1                                    | Describe the structure and functions of a                                     | K      | KH        | Y    | Lectures, Small group discussion   | Written/Viva                |                             |                      | Biochemistry           |
| IM15.4                                   | Elicit <i>document</i> and present a medical history that helps delineate the | S      | SH        | Y    | Bed Side clinic, DOAP              | Skill assessment            |                             | Community Medicine   |                        |

Unique number of the competency. First two alphabets represent the subject (see list); number following alphabet reflects topic number, following period is a running number.

Description of competency

Identifies the domain or domains addressed  
 K - Knowledge  
 S - Skill  
 A - Attitude  
 C - Communication

Identifies the level of competency required based on the Miller's pyramid  
 K - Knows  
 KH - Knows How  
 S - Skill  
 SH - Show How  
 P - Perform independently

Identifies if the competency is core or desirable.  
 Y indicates Core;  
 N-non-core

Identifies the suggested learning method.  
 DOAP - Demonstrate (by Student) Observe, Assist Perform)

Identifies the suggested assessment method  
 Skill assessment - Clinics, Skills lab, Practicals etc.

no of times a skill needs to be done independently to be certified for independent performance;  
 Rarely used in UG

Subject (s) in other phases with which the competency can be vertically integrated to increase relevance or improve basic understanding

Subject (s) in the same phase with which the competency can be horizontally integrated or aligned to allow a more wholesome understanding

**\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

## **Deriving learning objectives from competencies**

## Deriving learning objectives from competencies

|    |   |  |
|----|---|--|
| K  | Knows   | A knowledge attribute – Usually enumerates or describes  |
| KH | Knows how                                     | A higher level of knowledge – is able to discuss or analyse  |
| S  | Shows   | A skill attribute: is able to identify or demonstrate the steps  |
| SH | Shows how                                     | A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour   |
| P  | Performs (under supervision or independently) | Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results |

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

|         |  |
|---------|--|
| PA42.1* | At the end of the session the <b>phase II student</b> must be able to enumerate the most common causes of meningitis correctly                                 |
| PA42.2* | At the end of the session the <b>phase II student</b> must be able to enumerate the components of CSF analysis correctly                                       |
| PA42.3* | At the end of the session the <b>phase II student</b> must be able to <b>describe</b> the CSF features for a given etiology of meningitis <b>accurately</b>    |
| PA42.4* | At the end of the session the <b>phase II student</b> must be able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> |

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

**\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

## **Deriving learning methods from competencies**

## Deriving learning methods from competencies

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|         |   |  |
|---------|---|--|
| PA42.1* | At the end of the session the <b>Phase II student</b> must be able to enumerate the most common causes of meningitis <b>correctly</b>                           | Lecture → small group discussion                             |
| PA42.2* | At the end of the session the <b>Phase II student</b> must be able to enumerate the components of a CSF analysis <b>correctly</b>                               | Related objectives can be combined into one teaching session |
| PA42.3* | At the end of the session the <b>Phase II student</b> must be able to <b>describe</b> the CSF features for a given etiologic of meningitis <b>accurately</b>    |  |
| PA42.4* | At the end of the session the <b>Phase II student</b> must the able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> | small group discussion, practical session                    |

\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents



## **Deriving assessment methods from competencies**

## Deriving assessment methods from competencies-1

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|         |  |   |
|---------|--|---|
| PA42.1* | At the end of the session the <del>Phase I</del> <b>Phase II student</b> must be able to enumerate the most common causes of meningitis correctly              | Short note or part of structured essay: Enumerate 5 causes of meningitis based on their prevalence in India   |
| PA42.2* | At the end of the session the <b>Phase II student</b> must be able to enumerate the components of a CSF analysis correctly                                     | Short note or part of structured essay: Enumerate the components tested in a CSF analysis   |
| PA42.3* | At the end of the session the <b>Phase II student</b> must be able to <b>describe</b> the CSF features for a given aetiology of meningitis <b>accurately</b>   | Short note or part of structured essay:<br>Describe the CSF findings that are characteristic of tuberculous meningitis  |
| PA42.4* | At the end of the session the <b>Phase II student</b> must be able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> | Short note / part of the structured essay/ Skill station/ Viva voce<br>Review the CSF findings in the following patient and identify (write or vocalise) the most likely etiology |

\* Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document

## Deriving assessment methods from competencies-2

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|        |  |   |    |   |                                    |                       |          |           |
|--------|--|---|----|---|------------------------------------|-----------------------|----------|-----------|
| MI2.4* | List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia. | K | KH | Y | Didactic<br>Small group discussion | Written/<br>Viva voce | Medicine | Pathology |
|--------|--|---|----|---|------------------------------------|-----------------------|----------|-----------|

↓  
**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|        |  |
|--------|--|
| MI2.1* | Enumerate the common microbial agents causing anaemia                                  |
| MI2.2* | Describe the morphology of agent (1,2 etc)   |
| MI2.3* | Describe the mode of infection of agent in humans                                      |
| MI2.4* | Discuss the pathogenesis of anemia caused by agent                                     |
| MI2.5* | Describe the clinical course of infection by agent                                     |
| MI2.6* | Enumerate the diagnostic tests to identify the aetiology of agent as a cause of anemia |
| MI2.7* | Discuss the methods to prevent infection by agent                                      |
| MI2.8* | Describe the treatment of infection by agent   |

↑  
Integrate concept - not necessarily teachers  
Plan session with teachers of both subjects -teachers from both subjects usually not needed. Ensure redundancy and duplication by reviewing both subjects

↔  
Horizontally aligned and integrated with pathology

↕  
Vertically integrated with General Medicine

↓  
Integrate concept - not necessarily teachers Plan session with teachers from both phases. Make a decision on how much of the information needs to be brought down to this phase to make it relevant. Consider how a competency can ascend over phases: for eg. - can be at a KH -( know how) in phase II but becomes SH in phase III. For vertical integration with clinical subjects, use of a case to link the concept (a well written paper, case is sufficient). Using teachers from both phases is rarely required

# The concept of integration

## Concept of integration used in the Manual

*Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application.* The GMR 2018 applies these principles to the extent that will retain the strengths of silo - based education and assessment while providing experiences that will allow learners to integrate concepts.

Keeping this in mind, the Regulations recommend temporal coordination as described by Harden (called alignment in this document) as the major method to be followed allowing similar topics in different subjects to be thought separately but during the same time frame (Figure 1a ).

In a small proportion - not to exceed 20% of the total curriculum an attempt can be made to Share (Figure 1b) topics or Correlate (Figure 1c) topics by using an integration session. The integration session most preferred will be a case based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed. Care must be taken to ensure that achievement phase - based objectives are given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary.

As much as possible the necessary correlates from other phases must also be introduced while discussing a topic in a given subject - Nesting (Figure 1d) (Harden). Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year.

Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the learner has internalized and integrated the concept and its application.

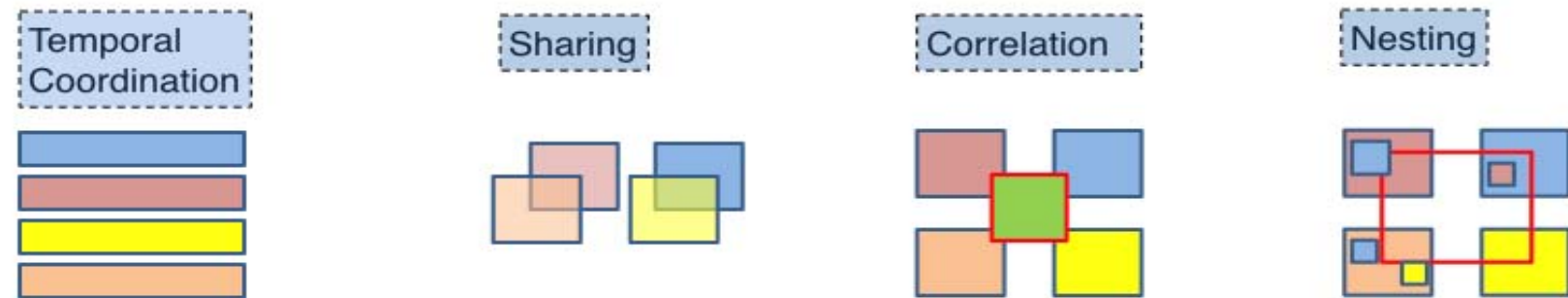


Figure 1 : Integration concepts framed in the GMR. Coloured boxes represent subjects. 1 a. Temporal coordination: The timetable is adjusted so that topics within the subjects or disciplines which are related, are scheduled at the same time. b. Sharing: Two disciplines may agree to plan and jointly implement a teaching program c. Correlation: the emphasis remains on disciplines or subjects with subject-based courses taking up most of the curriculum time. Within this framework, an integrated teaching session or course is introduced in addition to the subject-based teaching (green box with red border) d. Nesting: the teacher targets, within a subject-based course, skills relating to other subjects. Adapted from Harden R Med Edu 2000. 34; 551

## Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve.

In other words: Where do you want to go? or What do you want to become?

2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.

In other words: What should you have? or What should have changed?

3. **Objective:** Statement of what a learner should be able to do at the end of a specific learning experience.

In other words: What the Indian Medical Graduate should know, do, or behave.

### Action Verbs used in this manual

| Knowledge     | Skill                     | Attitude/communicate         |
|---------------|---------------------------|------------------------------|
| Enumerate     | Identify                  | Counsel                      |
| List          | Demonstrate               | Inform                       |
| Describe      | Perform under supervision | Demonstrate understanding of |
| Discuss       | Perform independently     |                              |
| Differentiate | Document                  |                              |
| Define        | Present                   |                              |
| Classify      | Record                    |                              |
| Choose        | Interpret                 |                              |
| Elicit        |                           |                              |
| Report        |                           |                              |

**Note:**

1. Specified essential competencies only will be required to be performed independently at the end of the final year MBBS.
2. The word 'perform' or 'do' is used ONLY if the task has to be done on patients or in laboratory practical in the pre/para- clinical phases.
3. Most tasks that require performance during undergraduate years will be performed under supervision.
4. If a certification to perform independently has been done, then the number of times the task has to be performed under supervision will be indicated in the last column.

## Explanation of terms used in this manual

|  |   |
|--|---|
| Lecture  | Any instructional large group method including traditional lecture and interactive lecture  |
| Small group discussion                                       | Any instructional method involving small groups of students in an appropriate learning context  |
| DOAP (Demonstration- Observation - Assistance - Performance) | A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently                              |
| Skill assessment   | A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands |
| Core   | A competency that is necessary in order to complete the requirements of the subject (traditional must know)   |
| Non-Core   | A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know)   |
| National Guidelines  | Health programs as relevant to the competency that are part of the National Health Program  |

### Domains of learning

|   |               |
|---|---------------|
| K | Knowledge     |
| S | Skill         |
| A | Attitude      |
| C | Communication |

### Levels of competency

|    |   |  |
|----|---|--|
| K  | Knows   | A knowledge attribute - Usually enumerates or describes  |
| KH | Knows how                                     | A higher level of knowledge - is able to discuss or analyze  |
| S  | Shows   | A skill attribute: is able to identify or demonstrate the steps  |
| SH | Shows how                                     | A skill attribute: is able to interpret/ demonstrate a complex procedure requiring thought, knowledge and behavior   |
| P  | Performs (under supervision or independently) | Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results |

**Note:**

In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able to SH - Show how - an informed consent is obtained - it is presumed that the preceding steps - the knowledge, the analytical skills, the skill of communicating have all been obtained.

It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified.



## **Volume II**

# **Competency based Undergraduate Curriculum in Medicine and Allied subjects**

**COMMUNITY MEDICINE (CODE: CM)**

| Number                                      | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method                        | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------------------------|------------------------|-------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>COMMUNITY MEDICINE</b>                   |  |                                     |                        |             |  |                                |                                       |                      |                           |
| <b>Topic: Concept of Health and Disease</b> |  | <b>Number of competencies: (10)</b> |                        |             | <b>Number of procedures that require certification:(NIL)</b> |                                |                                       |                      |                           |
| CM1.1                                       | Define and describe the concept of Public Health   | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.2                                       | Define health; describe the concept of holistic health including concept of spiritual health and the relativeness & determinants of health | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.3                                       | Describe the characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease    | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.4                                       | Describe and discuss the natural history of disease  | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.5                                       | Describe the application of interventions at various levels of prevention  | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.6                                       | Describe and discuss the concepts, the principles of Health promotion and Education, IEC and Behavioral change communication (BCC)         | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.7                                       | Enumerate and describe health indicators   | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.8                                       | Describe the Demographic profile of India and discuss its impact on health   | K                                   | KH                     | Y           | Lecture, Small group discussion                              | Written / Viva voce            |                                       |                      |                           |
| CM1.9                                       | Demonstrate the role of effective Communication skills in health in a simulated environment  | S                                   | SH                     | Y           | DOAP sessions  | Skill Assessment               |                                       | AETCOM               |                           |
| CM1.10                                      | Demonstrate the important aspects of the doctor patient relationship in a simulated environment  | S                                   | SH                     | Y           | DOAP sessions  | Skill Assessment               |                                       | AETCOM               |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method         | Suggested<br>Assessment method           | Number<br>required<br>to certify<br>P | Vertical Integration                       | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|---|--|---------------------------------------|--|---------------------------|
| <b>Topic: Relationship of social and behavioural to health and disease</b> <b>Number of competencies: (5)</b> <b>Number of procedures that require certification: (NIL)</b> |  |                   |                        |             |   |  |                                       |  |                           |
| CM2.1   | Describe the steps and perform clinico socio-cultural and demographic assessment of the individual, family and community   | S                 | SH                     | Y           | Lecture, Small group discussion, DOAP session | Written / Viva voce/<br>Skill assessment |                                       |  |                           |
| CM2.2   | Describe the socio-cultural factors, family (types), its role in health and disease & demonstrate in a simulated environment the correct assessment of socio-economic status             | S                 | SH                     | Y           | Lecture, Small group discussion, DOAP session | Written / Viva voce/<br>Skill assessment |                                       |  |                           |
| CM2.3   | Describe and demonstrate in a simulated environment the assessment of barriers to good health and health seeking behavior  | S                 | SH                     | Y           | Lecture, Small group discussion, DOAP session | Written / Viva voce/<br>Skill assessment |                                       |  |                           |
| CM2.4   | Describe social psychology, community behaviour and community relationship and their impact on health and disease  | K                 | KH                     | Y           | Lecture, Small group discussion               | Written / Viva voce                      |                                       |  |                           |
| CM2.5   | Describe poverty and social security measures and its relationship to health and disease   | K                 | KH                     | Y           | Lecture, Small group discussion               | Written / Viva voce                      |                                       |  |                           |
| <b>Topic: Environmental Health Problems</b> <b>Number of competencies: (8)</b> <b>Number of procedures that require certification: (NIL)</b>                                |  |                   |                        |             |   |  |                                       |  |                           |
| CM3.1   | Describe the health hazards of air, water, noise, radiation and pollution  | K                 | KH                     | Y           | Lecture, Small group discussion               | Written / Viva voce                      |                                       | General Medicine, ENT                      |                           |
| CM3.2   | Describe concepts of safe and wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting | K                 | KH                     | Y           | Lecture, Small group discussion, DOAP session | Written / Viva voce                      |                                       |  |                           |
| CM3.3   | Describe the aetiology and basis of water borne diseases /jaundice/hepatitis/ diarrheal diseases   | K                 | KH                     | Y           | Lecture, Small group discussion, DOAP session | Written / Viva voce                      |                                       | Microbiology, General Medicine, Pediatrics |                           |
| CM3.4   | Describe the concept of solid waste, human excreta and sewage disposal   | K                 | KH                     | Y           | Lecture, Small group discussion               | Written / Viva voce                      |                                       |  |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method                         | Suggested<br>Assessment method           | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|-------------|---|--|---------------------------------------|---------------------------------|---------------------------|
| CM3.5  | Describe the standards of housing and the effect of housing on health   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce                      |                                       |                                 |                           |
| CM3.6  | Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce                      |                                       | Microbiology                    |                           |
| CM3.7  | Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures                              | S                                   | SH                     | Y           | Lecture, Small group discussion, DOAP session                 | Written / Viva voce/<br>Skill assessment |                                       | Microbiology                    |                           |
| CM3.8  | Describe the mode of action, application cycle of commonly used insecticides and rodenticides   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce                      |                                       | Pharmacology                    |                           |
| <b>Topic: Principles of health promotion and education</b> |   | <b>Number of competencies: (3)</b>  |                        |             | <b>Number of procedures that require certification: (NIL)</b> |  |                                       |                                 |                           |
| CM4.1  | Describe various methods of health education with their advantages and limitations  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce                      |                                       |                                 |                           |
| CM4.2  | Describe the methods of organizing health promotion and education and counselling activities at individual family and community settings                      | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce                      |                                       |                                 |                           |
| CM4.3  | Demonstrate and describe the steps in evaluation of health promotion and education program  | S                                   | SH                     | Y           | Small group session, DOAP session                             | Written / Viva voce/<br>Skill assessment |                                       |                                 |                           |
| <b>Topic: Nutrition</b>                                    |   | <b>Number of competencies: (08)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |  |                                       |                                 |                           |
| CM5.1  | Describe the common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions               | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce                      |                                       | General Medicine,<br>Pediatrics |                           |
| CM5.2  | Describe and demonstrate the correct method of performing a nutritional assessment of individuals, families and the community by using the appropriate method | S                                   | SH                     | Y           | DOAP sessions   | Skill Assessment                         |                                       | General Medicine,<br>Pediatrics |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method          | Suggested<br>Assessment method           | Number<br>required<br>to certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|--|---------------------------------------|------------------------------|---------------------------|
| CM5.3   | Define and describe common nutrition related health disorders (including macro-PEM, Micro-iron, Zn, iodine, Vit. A), their control and management                  | K                 | KH                     | Y           | Lecture, Small group discussion                | Written / Viva voce                      |                                       | General Medicine, Pediatrics |                           |
| CM5.4   | Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment       | S                 | SH                     | Y           | DOAP sessions                                  | Skill Assessment                         |                                       | General Medicine, Pediatrics |                           |
| CM5.5   | Describe the methods of nutritional surveillance, principles of nutritional education and rehabilitation in the context of socio-cultural factors.                 | K                 | KH                     | Y           | Lecture, Small group discussion                | Written / Viva voce                      |                                       | General Medicine, Pediatrics |                           |
| CM5.6   | Enumerate and discuss the National Nutrition Policy, important national nutritional Programs including the Integrated Child Development Services Scheme (ICDS) etc | K                 | KH                     | Y           | Lecture, Small group discussion                | Written / Viva voce                      |                                       | Pediatrics                   |                           |
| CM5.7   | Describe food hygiene  | K                 | KH                     | Y           | Lecture, Small group discussion                | Written / Viva voce                      |                                       |                              | Microbiology              |
| CM5.8   | Describe and discuss the importance and methods of food fortification and effects of additives and adulteration  | K                 | KH                     | Y           | Lecture, Small group discussion                | Written / Viva voce                      |                                       | Pediatrics                   |                           |
| <b>Topic: Basic statistics and its applications</b> <span style="margin-left: 150px;"><b>Number of competencies: (04)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |             |  |  |                                       |                              |                           |
| CM6.1   | Formulate a research question for a study  | K                 | KH                     | Y           | Small group discussion, Lecture, DOAP sessions | Written / Viva voce/<br>Skill assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.2   | Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data       | S                 | SH                     | Y           | Small group, Lecture, DOAP sessions            | Written / Viva voce/<br>Skill assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.3   | Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs                        | S                 | SH                     | Y           | Small group discussion, Lecture, DOAP sessions | Written / Viva voce/<br>Skill assessment |                                       | General Medicine, Pediatrics |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method          | Suggested<br>Assessment method           | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|--|---------------------------------------|---------------------------------|---------------------------|
| CM6.4  | Enumerate, discuss and demonstrate Common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion | S                 | SH                     | Y           | Small group discussion, Lecture, DOAP sessions | Written / Viva voce/<br>Skill assessment |                                       | General Medicine,<br>Pediatrics |                           |
| <b>Topic: Epidemiology</b> <span style="margin-left: 200px;"><b>Number of competencies: (09)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |             |  |  |                                       |                                 |                           |
| CM7.1  | Define Epidemiology and describe and enumerate the principles, concepts and uses   | K                 | KH                     | Y           | Small group discussion, Lecture                | Written / Viva voce                      |                                       | General Medicine                |                           |
| CM7.2  | Enumerate, describe and discuss the modes of transmission and measures for prevention and control of communicable and non-communicable diseases                | K                 | KH                     | Y           | Small group discussion, Lecture                | Written / Viva voce                      |                                       | General Medicine                |                           |
| CM7.3  | Enumerate, describe and discuss the sources of epidemiological data  | K                 | KH                     | Y           | Small group discussion, Lecture                | Written / Viva voce                      |                                       | General Medicine                |                           |
| CM7.4  | Define, calculate and interpret morbidity and mortality indicators based on given set of data  | S                 | SH                     | Y           | Small group, DOAP sessions                     | Written/ Skill assessment                |                                       | General Medicine                |                           |
| CM7.5  | Enumerate, define, describe and discuss epidemiological study designs  | K                 | KH                     | Y           | Small group discussion, Lecture                | Written / Viva voce                      |                                       | General Medicine                |                           |
| CM7.6  | Enumerate and evaluate the need of screening tests   | S                 | SH                     | Y           | Small group discussion, DOAP sessions          | Written/ Skill assessment                |                                       | General Medicine                |                           |
| CM7.7  | Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures                 | S                 | SH                     | Y           | Small group discussion, DOAP sessions          | Written/ Skill assessment                |                                       | General Medicine                | Microbiology              |
| CM7.8  | Describe the principles of association, causation and biases in epidemiological studies  | K                 | KH                     | Y           | Small group discussion, Lecture                | Written / Viva voce                      |                                       | General Medicine                |                           |
| CM7.9  | Describe and demonstrate the application of computers in epidemiology  | S                 | KH                     | Y           | Small group discussion, DOAP sessions          | Written                                  |                                       |                                 |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                 | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|-------------|---|--------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| <b>Topic: Epidemiology of communicable and non- communicable diseases</b> |   | <b>Number of competencies:(7)</b>   |                        |             | <b>Number of procedures that require certification:(NIL)</b>  |                                |                                       |                                      |                           |
| CM8.1   | Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases   | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | General Medicine, Pediatrics         | Microbiology, Pathology   |
| CM8.2   | Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for Non Communicable diseases (diabetes, Hypertension, Stroke, obesity and cancer etc.) | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | General Medicine                     |                           |
| CM8.3   | Enumerate and describe disease specific National Health Programs including their prevention and treatment of a case   | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | General Medicine, Pediatrics         |                           |
| CM8.4   | Describe the principles and enumerate the measures to control a disease epidemic  | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | General Medicine, Pediatrics         |                           |
| CM8.5   | Describe and discuss the principles of planning, implementing and evaluating control measures for disease at community level bearing in mind the public health importance of the disease  | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | General Medicine, Pediatrics         |                           |
| CM8.6   | Educate and train health workers in disease surveillance, control & treatment and health education  | S                                   | SH                     | Y           | DOAP sessions   | Skill assessment               |                                       |                                      |                           |
| CM8.7   | Describe the principles of management of information systems  | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                                      |                           |
| <b>Topic: Demography and vital statistics</b>                             |   | <b>Number of competencies: (07)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                                      |                           |
| CM9.1   | Define and describe the principles of Demography, Demographic cycle, Vital statistics   | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                                      |                           |
| CM9.2   | Define, calculate and interpret demographic indices including birth rate, death rate, fertility rates   | S                                   | SH                     | Y           | Lecture, Small group discussion, DOAP sessions                | Skill assessment               |                                       | Obstetrics & Gynaecology, Pediatrics |                           |



| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                 | Horizontal<br>Integration |
|--|---|------------------------------------|------------------------|-------------|---|--------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| CM9.3  | Enumerate and describe the causes of declining sex ratio and its social and health implications                                       | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                                      |                           |
| CM9.4  | Enumerate and describe the causes and consequences of population explosion and population dynamics of India.                          | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                                      |                           |
| CM9.5  | Describe the methods of population control  | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | Obstetrics & Gynaecology             |                           |
| CM9.6  | Describe the National Population Policy   | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                                      |                           |
| CM9.7  | Enumerate the sources of vital statistics including census, SRS, NFHS, NSSO etc   | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                                      |                           |
| <b>Topic: Reproductive maternal and child health</b> |   | <b>Number of competencies:(09)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                                      |                           |
| CM10.1   | Describe the current status of Reproductive, maternal, newborn and Child Health   | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.2   | Enumerate and describe the methods of screening high risk groups and common health problems   | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | Pediatrics, Obstetrics & Gynaecology |                           |
| CM10.3   | Describe local customs and practices during pregnancy, childbirth, lactation and child feeding practices                              | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | Pediatrics, Obstetrics & Gynaecology |                           |
| CM10.4   | Describe the reproductive, maternal, newborn & child health (RMCH); child survival and safe motherhood interventions                  | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.5   | Describe Universal Immunization Program; Integrated Management of Neonatal and Childhood Illness (IMNCI) and other existing Programs. | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       | Pediatrics                           |                           |
| CM10.6   | Enumerate and describe various family planning methods, their advantages and shortcomings   | K                                  | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                                      |                           |

| Number                            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-----------------------------------|---|-------------------------------------|------------------------|-------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| CM10.7                            | Enumerate and describe the basis and principles of the Family Welfare Program including the organization, technical and operational aspects | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| CM10.8                            | Describe the physiology, clinical management and principles of adolescent health including ARSH   | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| CM10.9                            | Describe and discuss gender issues and women empowerment  | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| <b>Topic: Occupational Health</b> |   | <b>Number of competencies: (05)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| CM11.1                            | Enumerate and describe the presenting features of patients with occupational illness including agriculture                                  | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| CM11.2                            | Describe the role, benefits and functioning of the employees state insurance scheme   | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| CM11.3                            | Enumerate and describe specific occupational health hazards, their risk factors and preventive measures                                     | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| CM11.4                            | Describe the principles of ergonomics in health preservation  | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| CM11.5                            | Describe occupational disorders of health professionals and their prevention & management   | K                                   | KH                     | Y           | Small group discussion, Lecture                               | Written / Viva voce            |                                       |                      |                           |
| <b>Topic: Geriatric services</b>  |   | <b>Number of competencies: (04)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| CM12.1                            | Define and describe the concept of Geriatric services   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       | General Medicine     |                           |
| CM12.2                            | Describe health problems of aged population   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       | General Medicine     |                           |
| CM12.3                            | Describe the prevention of health problems of aged population   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       | General Medicine     |                           |

| Number  | COMPETENCY<br>The student should be able to                        | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method              | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                 | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|--------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| CM12.4  | Describe National program for elderly                              | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | General Medicine                     |                           |
| <b>Topic: Disaster Management</b> <span style="float: right;">Number of competencies: (04)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>       |  |                   |                        |             |  |                                |                                       |                                      |                           |
| CM13.1  | Define and describe the concept of Disaster management             | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | General Surgery,<br>General Medicine |                           |
| CM13.2  | Describe disaster management cycle                                 | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | General Surgery,<br>General Medicine |                           |
| CM13.3  | Describe man made disasters in the world and in India              | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | General Surgery,<br>General Medicine |                           |
| CM13.4  | Describe the details of the National Disaster management Authority | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | General Surgery,<br>General Medicine |                           |
| <b>Topic: Hospital waste management</b> <span style="float: right;">Number of competencies: (03)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |             |  |                                |                                       |                                      |                           |
| CM14.1  | Define and classify hospital waste                                 | K                 | KH                     | Y           | Lecture, Small group discussion, visit to hospital | Written / Viva voce            |                                       |                                      | Microbiology              |
| CM14.2  | Describe various methods of treatment of hospital waste            | K                 | KH                     | Y           | Lecture, Small group discussion, visit to hospital | Written / Viva voce            |                                       |                                      | Microbiology              |
| CM14.3  | Describe laws related to hospital waste management                 | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       |                                      | Microbiology              |
| <b>Topic: Mental Health</b> <span style="float: right;">Number of competencies: (03)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>             |  |                   |                        |             |  |                                |                                       |                                      |                           |
| CM15.1  | Define and describe the concept of mental Health                   | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | Psychiatry                           |                           |
| CM15.2  | Describe warning signals of mental health disorder                 | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | Psychiatry                           |                           |
| CM15.3  | Describe National Mental Health program                            | K                 | KH                     | Y           | Lecture, Small group discussion                    | Written / Viva voce            |                                       | Psychiatry                           |                           |



| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                         | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|-------------|---|--------------------------------|---------------------------------------|--|---------------------------|
| <b>Topic: Essential Medicine</b>   |   | <b>Number of competencies: (3)</b>  |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |  |                           |
| CM19.1   | Define and describe the concept of Essential Medicine List (EML)  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       |  | Pharmacology              |
| CM19.2   | Describe roles of essential medicine in primary health care   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       |  | Pharmacology              |
| CM19.3   | Describe counterfeit medicine and its prevention  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       |  | Pharmacology              |
| <b>Topic: Recent advances in Community Medicine</b>  |   | <b>Number of competencies: (04)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |  |                           |
| CM20.1   | List important public health events of last five years  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       |  |                           |
| CM20.2   | Describe various issues during outbreaks and their prevention   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       |  |                           |
| CM 20.3  | Describe any event important to Health of the Community   | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       |  |                           |
| CM 20.4  | Demonstrate awareness about laws pertaining to practice of medicine such as Clinical establishment Act and Human Organ Transplantation Act and its implications | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written / Viva voce            |                                       |  |                           |
| <b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br><b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br><b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br><b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b> |   |                                     |                        |             |   |                                |                                       |  |                           |
| <b>Intergration</b>  |   |                                     |                        |             |   |                                |                                       |  |                           |
| <b>Physiology</b>  |   |                                     |                        |             |   |                                |                                       |  |                           |
| PY9.6  | Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages   | K                                   | KH                     | Y           | Lectures, Small group discussion                              | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Community Medicine |                           |

| Number              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                             | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|-------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| <b>Biochemistry</b> |   |                   |                        |             |                                       |                                |                                       |  |                           |
| BI8.5               | Summarize the nutritional importance of commonly used items of food including fruits and vegetables.(macro-molecules & its importance)  | K                 | KH                     | Y           | Lectures, Small group discussions     | Written/ Viva voce             |                                       | Community Medicine, General Medicine, Pediatrics |                           |
| <b>Pathology</b>    |   |                   |                        |             |                                       |                                |                                       |  |                           |
| PA12.1              | Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       |  | Community Medicine        |
| PA26.5              | Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine, Community Medicine             |                           |
| PA26.7              | Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma             | K                 | KH                     | N           | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine, Community Medicine             |                           |
| <b>Microbiology</b> |   |                   |                        |             |                                       |                                |                                       |  |                           |
| MI1.3               | Describe the epidemiological basis of common infectious diseases  | K                 | KH                     | Y           | Lecture                               | Written/ Viva voce             |                                       |  | Community Medicine        |
| MI8.4               | Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | General Medicine, Community Medicine             | Community Medicine        |
| MI8.5               | Define Healthcare Associated Infections (HAI) and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention                 | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine, Community Medicine             |                           |
| MI8.6               | Describe the basics of Infection control  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       |  |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P   | Vertical Integration | Horizontal<br>Integration           |
|---|--|-------------------|------------------------|-------------|---------------------------------------|--------------------------------|---|----------------------|-------------------------------------|
| MI8.7   | Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)  | S                 | P                      | Y           | DOAP session                          | Skill assessment               | 3 each in<br>(Hand<br>hygiene &<br>PPE) | General Surgery      | Community Medicine                  |
| MI8.16  | Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)  | K                 | K                      | Y           | Lecture                               | Written / Viva voce            |   |                      |                                     |
| <b>Pharmacology</b>                           |  |                   |                        |             |                                       |                                |   |                      |                                     |
| PH1.55  | Describe and discuss the following National Health programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filariasis, Kala Azar, Diarrhoeal diseases, Anaemia & nutritional disorders, Blindness, Non-communicable diseases, Cancer and Iodine deficiency | K                 | KH                     | Y           | Lecture                               | Written / Viva voce            |   |                      | Community Medicine                  |
| <b>Forensic Medicine &amp; Toxicology</b>     |  |                   |                        |             |                                       |                                |   |                      |                                     |
| FM2.33  | Demonstrate ability to use local resources whenever required like in mass disaster situations  | A & C             | KH                     | Y           | Lecture, Small group discussions      | Written/ Viva voce             |   | Community Medicine   |                                     |
| <b>Dermatology, Venereology &amp; Leprosy</b> |  |                   |                        |             |                                       |                                |   |                      |                                     |
| DR9.1   | Classify, describe the epidemiology, etiology, microbiology pathogenesis and clinical presentations and diagnostic features of Leprosy   | K                 | KH                     | Y           | Lecture, Small group discussions      | Written / Viva voce            |   | General Medicine     | Microbiology,<br>Community Medicine |
| DR9.5   | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines  | K                 | KH                     | Y           | Lecture, Small group discussions      | Written / Viva voce            |   | General Medicine     | Pharmacology,<br>Community Medicine |
| DR9.6   | Describe the treatment of Leprosy based on the WHO guidelines  | K                 | KH                     | Y           | Lecture, Small group discussions      | Written / Viva voce            |   | General Medicine     | Pharmacology,<br>Community Medicine |
| <b>Ophthalmology</b>                          |  |                   |                        |             |                                       |                                |   |                      |                                     |
| OP9.4   | Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020)   | K                 | KH                     | Y           | Lecture, Small group discussions      | Written / Viva voce            |   |                      | Community Medicine                  |

| Number                  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                      | Horizontal<br>Integration |
|-------------------------|--|-------------------|------------------------|-------------|---------------------------------------|--------------------------------|---------------------------------------|---|---------------------------|
| <b>Psychiatry</b>       |  |                   |                        |             |                                       |                                |                                       |   |                           |
| PS19.1                  | Describe the relevance, role and status of community psychiatry  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                        |                           |
| PS19.2                  | Describe the objectives strategies and contents of the of the National Mental Health Programme   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                        |                           |
| PS19.4                  | Enumerate and describe the salient features of the prevalent mental health laws in India   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                        |                           |
| PS19.5                  | Describe the concept and principles of preventive psychiatry and mental health promotion (positive mental health); and community education   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                        |                           |
| <b>General Medicine</b> |  |                   |                        |             |                                       |                                |                                       |   |                           |
| IM2.1                   | Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Pathology, Physiology, Community Medicine |                           |
| IM4.3                   | Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g. Dengue, Chikungunya, Typhus) | K                 | K                      | Y           | Lecture, Small group discussion       | Written                        |                                       | Microbiology, Community Medicine          |                           |
| IM9.15                  | Describe the national programs for anemia prevention   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Pharmacology, Community Medicine          |                           |
| IM12.12                 | Describe and discuss the iodisation programs of the government of India  | K                 | KH                     | Y           | Lecture, Bedside clinic               | short note                     |                                       | Community Medicine                        |                           |
| IM14.4                  | Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity  | K                 | K                      | Y           | Lectures, Small group discussions     | short note/ Viva voce          |                                       | Pathology, Community Medicine             |                           |
| IM24.18                 | Describe the impact of the demographic changes in ageing on the population   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                        |                           |



| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                    | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|---------------------------------------|--------------------------------|---------------------------------------|---|---------------------------|
| IM25.1  | Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis, Rabies) and non-febrile infectious disease (e.g. Tetanus) | K                 | K                      | Y           | Lecture, Small group discussion       | Written                        |                                       | Microbiology,<br>Community Medicine     |                           |
| IM25.2  | Discuss and describe the common causes, pathophysiology and manifestations of these diseases  | K                 | K                      | Y           | Lecture, Small group discussion       | Written                        |                                       | Microbiology,<br>Community Medicine     |                           |
| IM25.4  | Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel  | S                 | SH                     | Y           | Bedside clinic, DOAP session          | Skill assessment               |                                       | Community Medicine                      |                           |
| IM25.13 | Counsel the patient and family on prevention of various infections due to environmental issues  | C                 | SH                     | Y           | DOAP session                          | Skill assessment               |                                       | Community Medicine,<br>General Medicine |                           |

**Obstetrics & Gynaecology**

|        |  |       |    |   |   |  |  |                    |            |
|--------|--|-------|----|---|---|--|--|--------------------|------------|
| OG1.1  | Define and discuss birth rate, maternal mortality and morbidity  | K     | KH | Y | Lecture, Small group discussions                  | Short notes                              |  | Community Medicine |            |
| OG1.2  | Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and morbidity audit  | K     | KH | Y | Lecture, Small group discussions                  | Short notes                              |  | Community Medicine | Pediatrics |
| OG8.1  | Enumerate describe and discuss the objectives of antenatal care, assessment of period of gestation; screening for high-risk factors  | K     | KH | Y | Small group discussions, Bedside clinics, Lecture | Written / Viva voce/<br>Skill assessment |  | Community Medicine |            |
| OG19.2 | Counsel in a simulated environment, contraception and puerperal sterilisation  | S/A/C | SH | Y | DOAP session                                      | Skill assessment                         |  | Community Medicine |            |
| OG21.1 | Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including OC, male contraception, emergency contraception and IUCD | K     | KH | Y | Lecture, Small group discussions, Bedside clinics | Written / Viva voce/<br>Skill assessment |  | Community Medicine |            |
| OG33.3 | Describe and demonstrate the screening for cervical cancer in a simulated environment  | K/S   | SH | Y | DOAP session                                      | Skill assessment                         |  | Community Medicine |            |

**Pediatrics**

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|-------------|---|--------------------------------|---------------------------------------|----------------------------------|---------------------------|
| PE3.5  | Discuss the role of the child developmental unit in management of developmental delay  | K                 | K                      | N           | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Community Medicine               |                           |
| PE3.7  | Visit a Child Developmental unit and observe its functioning   | S                 | KH                     | Y           | Lecture, Small group discussion         | Log book Entry                 |                                       | Community Medicine               |                           |
| PE8.1  | Define the term Complementary Feeding  | K                 | K                      | Y           | Lecture, Small group discussion         | Written/ Viva voce             |                                       | Community Medicine               |                           |
| PE8.2  | Discuss the principles the initiation, attributes , frequency, techniques and hygiene related to complementary feeding including | K                 | KH                     | Y           | Lecture, Small group discussion         | Written / Viva voce            |                                       | Community Medicine               |                           |
| PE8.3  | Enumerate the common complimentary foods   | K                 | K                      | Y           | Lecture, Small group discussion         | Written / Viva voce            |                                       | Community Medicine               |                           |
| PE8.4  | Elicit history on the Complementary Feeding habits   | S                 | SH                     | Y           | Bedside clinics, Skills lab             | Skill Assessment               |                                       | Community Medicine               |                           |
| PE8.5  | Counsel and educate mothers on the best practices in Complimentary Feeding   | A/C               | SH                     | Y           | DOAP session                            | Document in Log Book           |                                       | Community Medicine               |                           |
| PE9.1  | Describe the age related nutritional needs of infants, children and adolescents including micronutrients and vitamins            | K                 | KH                     | Y           | Lecture, Small group discussion         | Written / Viva voce            |                                       | Community Medicine, Biochemistry |                           |
| PE9.2  | Describe the tools and methods for Assessment and classification of Nutritional status of infants, children and adolescents      | K                 | KH                     | Y           | Lecture, Small group discussion,        | Written / Viva voce            |                                       | Community Medicine               |                           |
| PE9.4  | Elicit, Document and present an appropriate nutritional history and perform a dietary recall                                     | S                 | SH                     | Y           | Bedside clinic, Skill Lab               | Skill Assessment               |                                       | Community Medicine               |                           |
| PE9.5  | Calculate the age related Calorie requirement in Health and Disease and identify gap   | S                 | SH                     | Y           | Bedside clinics, Small group discussion | Skill assessment               |                                       | Community Medicine               |                           |
| PE9.6  | Assess and classify the nutrition status of infants, children and adolescents and recognize deviations                           | S                 | SH                     | Y           | Bedside clinic, Small group discussion  | Skill Assessment               |                                       | Community Medicine               |                           |
| PE9.7  | Plan an appropriate diet in Health and disease   | S                 | SH                     | N           | Bedside clinic, Small group discussion  | Document in logbook            |                                       | Community Medicine               |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|-------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------------------|---------------------------|
| PE10.4 | Identify children with under nutrition as per IMNCI criteria and plan referral  | S                 | SH                     | Y           | DOAP session                          | Document in log book           |                                       | Community Medicine               |                           |
| PE17.1 | State the vision and outline the goals, strategies and plan of action of NHM and other important national programs pertaining to maternal and child health including RMNCH A+, RBSK, RKSK, JSSK mission Indradhanush and ICDS | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine               |                           |
| PE17.2 | Analyse the outcomes and appraise the monitoring and evaluation of NHM  | K                 | KH                     | Y           | Debate                                | Written/ Viva voce             |                                       | Community Medicine               |                           |
| PE18.1 | List and explain the components, plans, outcomes of Reproductive child health (RCH) program and appraise the monitoring and evaluation  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine               | Obstetrics & Gynaecology  |
| PE18.2 | Explain preventive interventions for Child survival and safe motherhood   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine               | Obstetrics & Gynaecology  |
| PE18.3 | Conduct Antenatal examination of women independently and apply at-risk approach in antenatal care   | S                 | SH                     | Y           | Bedside clinics                       | Skill station                  |                                       | Community Medicine               | Obstetrics & Gynaecology  |
| PE18.4 | Provide intra-natal care and conduct a normal Delivery in a simulated environment   | S                 | SH                     | Y           | DOAP session, Skills lab              | Document in Log Book           |                                       | Community Medicine               | Obstetrics & Gynaecology  |
| PE18.6 | Perform Postnatal assessment of newborn and mother, provide advice on breast feeding, weaning and on family planning  | S                 | SH                     | Y           | Bedside clinics, Skill Lab            | Skill Assessment               |                                       | Community Medicine               | Obstetrics & Gynaecology  |
| PE18.8 | Observe the implementation of the program by Visiting the Rural Health Centre   | S                 | KH                     | Y           | Bedside clinics, Skill Lab            | Document in log book           |                                       | Community Medicine               | Obstetrics & Gynaecology  |
| PE19.1 | Explain the components of the Universal immunization Program and the sub National Immunization Programs   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology |                           |
| PE19.2 | Explain the epidemiology of Vaccine preventable diseases  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology |                           |
| PE19.3 | Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine, Microbiology |                           |
| PE19.4 | Define cold chain and discuss the methods of safe storage and handling of vaccines  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine, Microbiology |                           |

| Number                      | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                           | Horizontal<br>Integration |
|-----------------------------|--|-------------------|------------------------|-------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| PE19.5                      | Discuss immunization in special situations – HIV positive children, immunodeficiency, preterm , organ transplants, those who received blood and blood products, splenectomised children, Adolescents, travellers | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine, Microbiology               |                           |
| PE19.8                      | Demonstrate willingness to participate in the National and sub national immunisation days  | A                 | SH                     | Y           | Lecture, Small group discussion       | Document in Log Book           |                                       | Community Medicine                             |                           |
| PE19.12                     | Observe the Administration the UIP vaccines  | S                 | SH                     | Y           | DOAP session                          | Document in Log Book           |                                       | Community Medicine                             |                           |
| PE29.5                      | Discuss the National anaemia Control program   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                             |                           |
| PE34.3                      | Discuss the various regimens for management of Tuberculosis as per National Guidelines   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Microbiology, Community Medicine, Pharmacology | Respiratory Medicine      |
| PE34.4                      | Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Microbiology, Community Medicine, Pharmacology | Respiratory Medicine      |
| <b>General Surgery</b>      |  |                   |                        |             |                                       |                                |                                       |  |                           |
| SU7.1                       | Describe the Planning and conduct of Surgical audit  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                             |                           |
| SU7.2                       | Describe the principles and steps of clinical research in surgery  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                             |                           |
| <b>Respiratory Medicine</b> |  |                   |                        |             |                                       |                                |                                       |  |                           |
| CT1.1                       | Describe and discuss the epidemiology of tuberculosis and its impact on the work, life and economy of India  | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine                             |                           |
| CT1.4                       | Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs   | K                 | KH                     | Y           | Lecture, Small group discussion       | Written / Viva voce            |                                       | Community Medicine, Microbiology, Pharmacology |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>learning method           | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|-------------|---|--------------------------------|---------------------------------------|----------------------------------|---------------------------|
| CT1.15 | Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and co-morbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS) | K                 | SH                     | Y           | Bedside clinic, Small group discussion, Lecture | Skill assessment               |                                       | Pharmacology, Community Medicine |                           |
| CT1.16 | Describe the appropriate precautions, screening, testing and indications for chemoprophylaxis for contacts and exposed health care workers  | K                 | KH                     | Y           | Bedside clinic, Small group discussion          | Written                        |                                       | Community Medicine               |                           |
| CT1.18 | Educate health care workers on national programs of Tuberculosis and administering and monitoring the DOTS program  | C                 | SH                     | Y           | DOAP session                                    | Skill assessment               |                                       | Community Medicine               |                           |
| CT2.24 | Recognise the impact of OAD on patient's quality of life, well being, work and family   | A                 | KH                     | Y           | Small group discussion, Bedside clinic          | Observation by faculty         |                                       | Community Medicine               |                           |
| CT2.25 | Discuss and describe the impact of OAD on the society and workplace   | K                 | KH                     | Y           | Lecture, Small group discussion                 | Written / Viva voce            |                                       | Community Medicine               |                           |
| CT2.26 | Discuss and describe preventive measures to reduce OAD in workplaces  | K                 | KH                     | Y           | Lecture, Small group discussion                 | Written / Viva voce            |                                       | Community Medicine               |                           |
| CT2.27 | Demonstrate an understanding of patient's inability to change working, living and environmental factors that influence progression of airway disease  | A                 | KH                     | Y           | Small group discussion, Bedside clinic          | Observation by faculty         |                                       | Community Medicine               |                           |

**GENERAL MEDICINE (CODE: IM)**

| Number                      | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                 | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|-----------------------------|---|-------------------------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| <b>GENERAL MEDICINE</b>     |   |                                     |                        |              |   |                                 |                                       |                                     |                           |
| <b>Topic: Heart Failure</b> |   | <b>Number of competencies: (30)</b> |                        |              | <b>Number of procedures that require certification : (01)</b> |                                 |                                       |                                     |                           |
| IM1.1                       | Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology               |                           |
| IM1.2                       | Describe and discuss the genetic basis of some forms of heart failure   | K                                   | KH                     | N            | Lecture, Small group discussion                               | Written                         |                                       | Pathology, Physiology               |                           |
| IM1.3                       | Describe and discuss the aetiology microbiology pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology, Microbiology |                           |
| IM1.4                       | Stage heart failure   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology               |                           |
| IM1.5                       | Describe ,discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology               |                           |
| IM1.6                       | Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations  | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology               |                           |
| IM1.7                       | Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias, anemia, thyrotoxicosis, dietary factors drugs etc.   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology               |                           |
| IM1.8                       | Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation  | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology               |                           |
| IM1.9                       | Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Microbiology             |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM1.10 | Elicit document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including: presenting complaints, precipitating and exacerbating factors, risk factors exercise tolerance, changes in sleep patterns, features suggestive of infective endocarditis   | S                 | SH                     | Y            | Bedside clinic                                  | Skill assessment                |                                       |                      |                           |
| IM1.11 | Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation | S                 | SH                     | Y            | Bedside clinic, DOAP session                    | Skill assessment                |                                       |                      |                           |
| IM1.12 | Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure   | S                 | SH                     | Y            | Bedside clinic, DOAP session                    | Skill assessment                |                                       |                      |                           |
| IM1.13 | Measure the blood pressure accurately, recognise and discuss alterations in blood pressure in valvular heart disease and other causes of heart failure and cardiac tamponade  | S                 | SH                     | Y            | Bedside clinic, DOAP session                    | Skill assessment                |                                       |                      |                           |
| IM1.14 | Demonstrate and measure jugular venous distension   | S                 | SH                     | Y            | Bedside clinic, DOAP session                    | Skill assessment                |                                       |                      |                           |
| IM1.15 | Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations  | S                 | SH                     | Y            | Bedside clinic, DOAP session                    | Skill assessment                |                                       |                      |                           |
| IM1.16 | Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis   | K                 | KH                     | Y            | Bedside clinic, Small group discussion          | Skill assessment                |                                       |                      |                           |
| IM1.17 | Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures  | K                 | SH                     | Y            | Bedside clinic, DOAP session                    | Skill assessment                |                                       |                      |                           |
| IM1.18 | Perform and interpret a 12 lead ECG   | S                 | P                      | Y            | Bedside clinic, DOAP session                    | Skill assessment                | 3                                     |                      |                           |
| IM1.19 | Enumerate the indications for and describe the findings of heart failure with the following conditions including: 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram   | S                 | KH                     | N            | Lecture, Small group discussion, Bedside clinic | Skill assessment                |                                       | Radiodiagnosis       |                           |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                            | Suggested Assessment<br>methods          | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|--|--|---------------------------------------|----------------------------|---------------------------|
| IM1.20 | Determine the severity of valvular heart disease based on the clinical and laboratory and imaging features and determine the level of intervention required including surgery   | C                 | SH                     | Y            | Small group discussion, Lecture, Bedside clinic          | Written/ Skill assessment                |                                       |                            |                           |
| IM1.21 | Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy   | K                 | KH/SH                  | Y            | Bedside clinic, Small group discussion, Lecture          | Skill assessment                         |                                       |                            |                           |
| IM1.22 | Assist and demonstrate the proper technique in collecting specimen for blood culture  | S                 | SH                     | Y            | DOAP session   | Skill assessment                         |                                       | Microbiology               |                           |
| IM1.23 | Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations   | S/C               | SH                     | Y            | Lecture, Small group discussion                          | Skill assessment                         |                                       |                            |                           |
| IM1.24 | Describe and discuss the pharmacology of drugs including indications, contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides                                 | K                 | KH                     | Y            | Lecture, Small group discussion                          | Viva voce/written                        |                                       | Pharmacology               |                           |
| IM1.25 | Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation  | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinic          | Viva voce/written                        |                                       |                            |                           |
| IM1.26 | Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology   | S                 | SH                     | Y            | Bedside clinic, Skill assessment, Small group discussion | Bedside clinic/ Skill assessment/written |                                       |                            |                           |
| IM1.27 | Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease  | K                 | KH                     | Y            | Bedside clinic, Small group discussion                   | Written                                  |                                       | Microbiology, Pharmacology |                           |
| IM1.28 | Enumerate the causes of adult presentations of congenital heart disease and describe the distinguishing features between cyanotic and acyanotic heart disease   | K                 | KH                     | Y            | Bedside clinic, Small group discussion                   | Bedside clinic/ Skill assessment/written |                                       |                            |                           |
| IM1.29 | Elicit document and present an appropriate history, demonstrate correctly general examination, relevant clinical findings and formulate document and present a management plan for an adult patient presenting with a common form of congenital heart disease | K                 | KH                     | Y            | Bedside clinic, Small group discussion                   | Skill assessment/ written                |                                       |                            |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods       | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration  | Horizontal<br>Integration |  |
|--|---|-------------------|------------------------|--------------|-------------------------------------|--------------------------------------|---------------------------------------|---|---------------------------|--|
| IM1.30   | Administer an intramuscular injection with an appropriate explanation to the patient  | S                 | SH                     | Y            | Bedside clinic, Skill assessment    | Log book documentation of completion |                                       | Pharmacology  |                           |  |
| <b>Topic: Acute Myocardial Infarction/ IHD</b> |   |                   |                        |              |                                     |                                      |                                       |   |                           |  |
|  |   |                   |                        |              | <b>Number of competencies: (24)</b> |                                      |                                       | <b>Number of procedures that require certification : (02)</b> |                           |  |
| IM2.1  | Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease  | K                 | KH                     | Y            | Lecture, Small group discussion     | Written/ Viva voce                   |                                       | Pathology, Physiology, Community Medicine                     |                           |  |
| IM2.2  | Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD   | K                 | KH                     | Y            | Lecture, Small group discussion     | Written/ Viva voce                   |                                       | Pathology, Physiology   |                           |  |
| IM2.3  | Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis  | K                 | KH                     | Y            | Lecture, Small group discussion     | Written/ Viva voce                   |                                       | Physiology, Biochemistry                                      |                           |  |
| IM2.4  | Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD   | K                 | KH                     | Y            | Lecture, Small group discussion     | Written/ Viva voce                   |                                       | Pathology, Physiology   |                           |  |
| IM2.5  | Define the various acute coronary syndromes and describe their evolution, natural history and outcomes  | K                 | KH                     | Y            | Lecture, Small group discussion     | Written/ Viva voce                   |                                       | Pathology   |                           |  |
| IM2.6  | Elicit document and present an appropriate history that includes onset evolution, presentation risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes | S                 | SH                     | Y            | Bedside clinic, DOAP session        | Skill assessment                     |                                       |   |                           |  |
| IM2.7  | Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation   | S                 | SH                     | Y            | Bedside clinic, DOAP session        | Skill assessment                     |                                       |   |                           |  |
| IM2.8  | Generate document and present a differential diagnosis based on the clinical presentation and prioritise based on "cannot miss", most likely diagnosis and severity   | S                 | SH                     | Y            | Bedside clinic, DOAP session        | Skill assessment                     |                                       |   |                           |  |
| IM2.9  | Distinguish and differentiate between stable and unstable angina and AMI based on the clinical presentation   | S                 | SH                     | Y            | Bedside clinic, DOAP session        | Skill assessment                     |                                       |   |                           |  |
| IM2.10   | Order, perform and interpret an ECG   | S                 | P                      | Y            | Bedside clinic, DOAP session        | Skill assessment                     | 3                                     |   |                           |  |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|-------------------------------|---------------------------|
| IM2.11 | Order and interpret a Chest X-ray and markers of acute myocardial infarction   | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                               |                           |
| IM2.12 | Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context  | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       | Biochemistry                  |                           |
| IM2.13 | Discuss and enumerate the indications for and findings on echocardiogram, stress testing and coronary angiogram  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                               |                           |
| IM2.14 | Discuss and describe the indications for admission to a coronary care unit and supportive therapy for a patient with acute coronary syndrome   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                               |                           |
| IM2.15 | Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology                  |                           |
| IM2.16 | Discuss and describe the indications for acute thrombolysis, PTCA and CABG   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                               |                           |
| IM2.17 | Discuss and describe the indications and methods of cardiac rehabilitation   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                               |                           |
| IM2.18 | Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology,<br>Biochemistry |                           |
| IM2.19 | Discuss and describe the pathogenesis, recognition and management of complications of acute coronary syndromes including arrhythmias, shock, LV dysfunction, papillary muscle rupture and pericarditis | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                               |                           |
| IM2.20 | Discuss and describe the assessment and relief of pain in acute coronary syndromes   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology                  |                           |
| IM2.21 | Observe and participate in a controlled environment an ACLS program  | S                 | KH                     | N            | DOAP session                    | NA                              |                                       |                               |                           |
| IM2.22 | Perform and demonstrate in a mannequin BLS   | S                 | P                      | Y            | DOAP session                    | Skill assessment                | 1                                     |                               |                           |

| Number                  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                 | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                   | Horizontal<br>Integration |
|-------------------------|---|-------------------------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|--|---------------------------|
| IM2.23                  | Describe and discuss the indications for nitrates, anti platelet agents, gpIIb IIIa inhibitors, beta blockers, ACE inhibitors etc in the management of coronary syndromes   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pharmacology                           |                           |
| IM2.24                  | Counsel and communicate to patients with empathy lifestyle changes in atherosclerosis / post coronary syndromes   | C/A                                 | SH                     | Y            | DOAP session  | Skill assessment                |                                       | AETCOM                                 |                           |
| <b>Topic: Pneumonia</b> |   | <b>Number of competencies: (19)</b> |                        |              | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                       |  |                           |
| IM3.1                   | Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia   | K                                   | K                      | Y            | Lecture, Small group discussion                               | Short note/ Viva voce           |                                       | Human Anatomy, Pathology, Microbiology |                           |
| IM3.2                   | Discuss and describe the aetiologies of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host  | K                                   | K                      | Y            | Lecture, Small group discussion                               | Short note/ Viva voce           |                                       | Microbiology                           |                           |
| IM3.3                   | Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia   | K                                   | K                      | Y            | Lecture, Small group discussion                               | Short note/ Viva voce           |                                       | Pathology, Microbiology                |                           |
| IM3.4                   | Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk  | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                  | Skill assessment                |                                       |  |                           |
| IM3.5                   | Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of disease                               | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                  | Skill assessment                |                                       |  |                           |
| IM3.6                   | Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation   | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                  | Skill assessment                |                                       |  |                           |
| IM3.7                   | Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                  | Skill assessment                |                                       | Radiodiagnosis, Microbiology           |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|--------------|---------------------------------|---|---------------------------------------|---------------------------------|---------------------------|
| IM3.8  | Demonstrate in a mannequin and interpret results of an arterial blood gas examination  | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                        |                                       |                                 |                           |
| IM3.9  | Demonstrate in a mannequin and interpret results of a pleural fluid aspiration   | S                 | SH                     | Y            | DOAP session                    | Skill assessment                        |                                       |                                 |                           |
| IM3.10 | Demonstrate the correct technique in a mannequin and interpret results of a blood culture  | S                 | SH                     | Y            | DOAP session                    | Skill assessment                        |                                       | Microbiology                    |                           |
| IM3.11 | Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing   | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                        |                                       | Radiodiagnosis,<br>Microbiology |                           |
| IM3.12 | Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum | S                 | SH                     | Y            | Bed side clinic, DOAP session   | Skill Assessment/<br>Written/ Viva voce |                                       | Pharmacology,<br>Microbiology   |                           |
| IM3.13 | Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum.      | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment/<br>Written/ Viva voce |                                       | Pharmacology,<br>Microbiology   |                           |
| IM3.14 | Perform and interpret a sputum gram stain and AFB  | S                 | P                      | Y            | DOAP session                    | Skill assessment                        |                                       | Microbiology                    |                           |
| IM3.15 | Describe and enumerate the indications for hospitalisation in patients with pneumonia  | K                 | K                      | Y            | Lecture, Small group discussion | Short note/ Viva voce                   |                                       |                                 |                           |
| IM3.16 | Describe and enumerate the indications for isolation and barrier nursing in patients with pneumonia  | K                 | K                      | Y            | Lecture, Small group discussion | Short note/ Viva voce                   |                                       |                                 |                           |
| IM3.17 | Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and indications for ventilation                                    | K                 | K                      | Y            | Lecture, Small group discussion | Short note/ Viva voce                   |                                       |                                 |                           |
| IM3.18 | Communicate and counsel patient on family on the diagnosis and therapy of pneumonia  | C/A               | SH                     | Y            | DOAP session                    | Skill assessment                        |                                       |                                 |                           |
| IM3.19 | Discuss, describe, enumerate the indications and communicate to patients on pneumococcal and influenza vaccines  | S/C               | K                      | Y            | Lecture, Small group discussion | Short note/ Viva voce                   |                                       | Microbiology                    |                           |

**Topic: Fever and febrile syndromes**

**Number of competencies: (26)**

**Number of procedures that require certification : (NIL)**

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| IM4.1  | Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile response   | K                 | K                      | Y            | Lecture, Small group discussion | Written                         |                                       | Microbiology                        |                           |
| IM4.2  | Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel  | K                 | K                      | Y            | Lecture, Small group discussion | Written                         |                                       | Microbiology                        |                           |
| IM4.3  | Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g.Dengue, Chikungunya, Typhus)   | K                 | K                      | Y            | Lecture, Small group discussion | Written                         |                                       | Microbiology,<br>Community Medicine |                           |
| IM4.4  | Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever   | K                 | KH                     | Y            | Lecture, Small group discussion | Written                         |                                       | Microbiology                        |                           |
| IM4.5  | Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies  | K                 | KH                     | Y            | Lecture, Small group discussion | Written                         |                                       | Pathology,<br>Microbiology          |                           |
| IM4.6  | Discuss and describe the pathophysiology and manifestations of malaria  | K                 | KH                     | Y            | Lecture, Small group discussion | Written                         |                                       | Microbiology                        |                           |
| IM4.7  | Discuss and describe the pathophysiology and manifestations of the sepsis syndrome  | K                 | K                      | Y            | Lecture, Small group discussion | Written                         |                                       |                                     |                           |
| IM4.8  | Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host, neutropenic host, nosocomial host and a host with HIV disease  | K                 | K                      | Y            | Lecture, Small group discussion | Written                         |                                       | Microbiology                        |                           |
| IM4.9  | Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       | Microbiology                        |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods      | Suggested Assessment<br>methods                 | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|------------------------------------|---|---------------------------------------|----------------------------|---------------------------|
| IM4.10 | Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)  | S                 | SH                     | Y            | Bedside clinic, DOAP session       | Skill assessment                                |                                       |                            |                           |
| IM4.11 | Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes   | K                 | SH                     | Y            | Bedside clinic, DOAP session       | Written/ Viva voce                              |                                       |                            |                           |
| IM4.12 | Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC | K                 | SH                     | Y            | Bedside clinic, Skill assessment   | Skill assessment                                |                                       | Pathology,<br>Microbiology |                           |
| IM4.13 | Perform and interpret a sputum gram stain   | S                 | SH                     | Y            | DOAP session                       | Log book/<br>documentation                      |                                       | Microbiology               |                           |
| IM4.14 | Perform and interpret a sputum AFB  | S                 | SH                     | Y            | DOAP session                       | Log book/<br>documentation                      |                                       | Microbiology               |                           |
| IM4.15 | Perform and interpret a malarial smear  | S                 | SH                     | Y            | DOAP session                       | Log book/<br>documentation/ Skill<br>assessment |                                       | Microbiology               |                           |
| IM4.16 | Enumerate the indications and describe the findings in tests of inflammation and specific rheumatologic tests, serologic testing for pathogens including HIV, bone marrow aspiration and biopsy   | K                 | KH                     | N            | Lecture, Small group<br>discussion | Written   |                                       | Pathology                  |                           |
| IM4.17 | Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment   | S                 | SH                     | N            | Skills lab                         | Log book/<br>documentation/ DOAP<br>session     |                                       | Pathology                  |                           |
| IM4.18 | Enumerate the indications for use of imaging in the diagnosis of febrile syndromes  | K                 | KH                     | N            | Lecture, Small group<br>discussion | Written/ Viva voce                              |                                       |                            |                           |
| IM4.19 | Assist in the collection of blood and wound cultures  | S                 | SH                     | Y            | DOAP session                       | Log book/<br>documentation                      |                                       | Microbiology               |                           |

| Number                      | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|-----------------------------|---|-------------------------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|-------------------------------|---------------------------|
| IM4.20                      | Interpret a PPD (Mantoux)   | S                                   | SH                     | Y            | DOAP session   | Log book/ documentation         |                                       | Microbiology                  |                           |
| IM4.21                      | Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner | K                                   | KH                     | Y            | Bedside clinic, Skill assessment                               | Skill assessment                |                                       |                               |                           |
| IM4.22                      | Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance                       | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pharmacology                  |                           |
| IM4.23                      | Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs  | S                                   | SH                     | Y            | Small group discussion   | Skill assessment                |                                       | Microbiology,<br>Pharmacology |                           |
| IM4.24                      | Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis                            | C                                   | SH                     | Y            | DOAP session   | Skill assessment                |                                       |                               |                           |
| IM4.25                      | Communicate to the patient and family the diagnosis and treatment   | C                                   | SH                     | Y            | DOAP session   | Skill assessment                |                                       | AETCOM                        |                           |
| IM4.26                      | Counsel the patient on malarial prevention  | C                                   | SH                     | Y            | DOAP session   | Skill assessment                |                                       | Microbiology,<br>Pharmacology |                           |
| <b>Topic: Liver disease</b> |   | <b>Number of competencies: (18)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                 |                                       |                               |                           |
| IM5.1                       | Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written/Viva voce               |                                       | Pathology, Physiology         |                           |
| IM5.2                       | Describe and discuss the aetiology and pathophysiology of liver injury  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pathology, Physiology         |                           |
| IM5.3                       | Describe and discuss the pathologic changes in various forms of liver disease   | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pathology                     |                           |
| IM5.4                       | Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis                                   | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pathology,<br>Microbiology    |                           |
| IM5.5                       | Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pathology                     |                           |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods          | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|----------------------------|---------------------------|
| IM5.6  | Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy               | K                 | K                      | Y            | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology                  |                           |
| IM5.7  | Enumerate and describe the causes and pathophysiology of drug induced liver injury  | K                 | K                      | Y            | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology,<br>Pharmacology |                           |
| IM5.8  | Describe and discuss the pathophysiology, clinical evolution and complications cholelithiasis and cholecystitis   | K                 | K                      | Y            | Lecture, Small group discussion        | Written/ Viva voce              |                                       | General Surgery            |                           |
| IM5.9  | Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history         | S                 | SH                     | Y            | Bedside clinic, DOAP session           | Skill assessment                |                                       |                            |                           |
| IM5.10 | Perform a systematic examination that establishes the diagnosis and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of portosystemic hypertension and hepatic encephalopathy | S                 | SH                     | Y            | Bedside clinic, DOAP session           | Skill assessment                |                                       |                            |                           |
| IM5.11 | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom  | K                 | KH                     | Y            | Bedside clinic, DOAP session           | Skill assessment/ Viva voce     |                                       |                            |                           |
| IM5.12 | Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases.   | S                 | KH                     | Y            | Bedside clinic, DOAP session           | Skill assessment                |                                       | Pathology                  |                           |
| IM5.13 | Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease   | K                 | K                      | Y            | Bedside clinic, Small group discussion | Viva voce/ Written              |                                       | Radiodiagnosis             | General Surgery           |
| IM5.14 | Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology   | S                 | SH                     | Y            | Bedside clinic, Small group discussion | Viva voce/ Written              |                                       | Pathology,<br>Microbiology |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--|---|-------------------|------------------------|--------------|---------------------------------|---|---------------------------------------|----------------------------|---------------------------|
| IM5.15   | Assist in the performance and interpret the findings of an ascitic fluid analysis   | S                 | KH                     | Y            | DOAP session                    | documentation in log book               |                                       |                            |                           |
| IM5.16   | Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy   | K                 | KH                     | Y            | Written, Small group discussion | Skill assessment/<br>Written/ Viva voce |                                       | Pharmacology               | General Surgery           |
| IM5.17   | Enumerate the indications, precautions and counsel patients on vaccination for hepatitis  | K/C               | SH                     | Y            | Written, Small group discussion | Written/ Viva voce                      |                                       | Microbiology               |                           |
| IM5.18   | Enumerate the indications for hepatic transplantation   | K                 | K                      | Y            | Written, Small group discussion | Written/ Viva voce                      |                                       |                            | General Surgery           |
| <b>Topic: HIV</b> <span style="margin-left: 200px;"><b>Number of competencies: (23)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |   |                   |                        |              |                                 |   |                                       |                            |                           |
| IM6.1  | Describe and discuss the symptoms and signs of acute HIV seroconversion   | K                 | KH                     | Y            | Lecture, Small group discussion | Short note/ Viva voce                   |                                       | Microbiology               |                           |
| IM6.2  | Define and classify HIV AIDS based on the CDC criteria  | K                 | KH                     | Y            | Lecture, Small group discussion | Short notes/ Viva voce                  |                                       | Microbiology               |                           |
| IM6.3  | Describe and discuss the relationship between CDC count and the risk of opportunistic infections  | K                 | KH                     | Y            | Lecture, Small group discussion | Short notes/ Viva voce                  |                                       | Microbiology               |                           |
| IM6.4  | Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections   | K                 | KH                     | Y            | Lecture, Small group discussion | Short notes/ Viva voce                  |                                       | Microbiology               |                           |
| IM6.5  | Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies   | K                 | KH                     | Y            | Lecture, Small group discussion | Short notes/ Viva voce                  |                                       | Pathology,<br>Microbiology |                           |
| IM6.6  | Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions  | K                 | KH                     | Y            | Lecture, Small group discussion | Short notes/ Viva voce                  |                                       | Pathology,<br>Microbiology |                           |
| IM6.7  | Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                        |                                       |                            |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                        | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|----------------------------|---------------------------|
| IM6.8  | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom  | S                 | SH                     | Y            | Bedside clinic, DOAP session, Small group discussion | Skill assessment                |                                       |                            |                           |
| IM6.9  | Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC  | K                 | KH                     | Y            | Bedside clinic, DOAP session, Small group discussion | Written/ Skill assessment       |                                       | Pathology, Microbiology    |                           |
| IM6.10 | Choose and interpret appropriate diagnostic tests to diagnose opportunistic infections including CBC, sputum examination and cultures, blood cultures, stool analysis, CSF analysis and Chest radiographs | S                 | KH                     | Y            | Bedside clinic, DOAP session, Small group discussion | Written/ Skill assessment       |                                       |                            |                           |
| IM6.11 | Enumerate the indications and describe the findings for CT of the chest and brain and MRI   | K                 | K                      | N            | Small group discussion, Lecture, Bedside clinic      | Written/ Viva voce              |                                       | Radiodiagnosis             |                           |
| IM6.12 | Enumerate the indications for and interpret the results of: pulse oximetry, ABG, Chest Radiograph   | K                 | KH                     | Y            | Bedside clinic, DOAP session, Small group discussion | Written/ Skill assessment       |                                       |                            |                           |
| IM6.13 | Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea   | K                 | K                      | Y            | Lecture, Small group discussion                      | Written/ Viva voce              |                                       | Pharmacology, Microbiology |                           |
| IM6.14 | Perform and interpret AFB sputum  | S                 | P                      | Y            | DOAP session   | Skill assessment                |                                       | Microbiology               |                           |
| IM6.15 | Demonstrate in a model the correct technique to perform a lumbar puncture   | S                 | SH                     | Y            | Simulation   | Skill assessment                |                                       | Microbiology               |                           |
| IM6.16 | Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions   | K                 | K                      | Y            | Lecture, Small group discussion                      | Written/ Viva voce              |                                       | Microbiology, Pharmacology |                           |
| IM6.17 | Discuss and describe the principles and regimens used in post exposure prophylaxis  | K                 | K                      | Y            | Lecture, Small group discussion                      | Written/ Viva voce              |                                       | Microbiology, Pharmacology |                           |
| IM6.18 | Enumerate the indications and discuss prophylactic drugs used to prevent HIV related opportunistic infections   | K/C               | K                      | Y            | Lecture, Small group discussion                      | Written/ Viva voce              |                                       | Pathology, Microbiology    |                           |

| Number                               | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                 | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------------------------------------|---|-------------------------------------|------------------------|--------------|---|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| IM6.19                               | Counsel patients on prevention of HIV transmission  | C                                   | SH                     | Y            | DOAP session  | Skills assessment                    |                                       | AETCOM               |                           |
| IM6.20                               | Communicate diagnosis, treatment plan and subsequent follow up plan to patients   | C                                   | SH                     | Y            | DOAP session  | Skills assessment                    |                                       | AETCOM               |                           |
| IM6.21                               | Communicate with patients on the importance of medication adherence   | C                                   | SH                     | Y            | DOAP session  | Skills assessment                    |                                       | AETCOM               |                           |
| IM6.22                               | Demonstrate understanding of ethical and legal issues regarding patient confidentiality and disclosure in patients with HIV | K/A                                 | SH                     | Y            | DOAP session, Small group discussion                          | Viva voce/ Written/ Skill Assessment |                                       | AETCOM               |                           |
| IM6.23                               | Demonstrate a non-judgemental attitude to patients with HIV and to their lifestyles   | A                                   | SH                     | Y            | Small group discussion  | observation by teacher               |                                       | AETCOM               |                           |
| <b>Topic: Rheumatologic problems</b> |   | <b>Number of competencies: (27)</b> |                        |              | <b>Number of procedures that require certification: (NIL)</b> |                                      |                                       |                      |                           |
| IM7.1                                | Describe the pathophysiology of autoimmune disease  | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       | Pathology            |                           |
| IM7.2                                | Describe the genetic basis of autoimmune disease  | K                                   | KH                     | N            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       | Pathology            |                           |
| IM7.3                                | Classify cause of joint pain based on the pathophysiology   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       |                      |                           |
| IM7.4                                | Develop a systematic clinical approach to joint pain based on the pathophysiology   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       |                      | Orthopedics               |
| IM7.5                                | Describe and discriminate acute, subacute and chronic causes of joint pain  | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       |                      | Orthopedics               |
| IM7.6                                | Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain          | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       |                      | Orthopedics               |
| IM7.7                                | Discriminate, describe and discuss distinguishing articular from periarticular complaints                                   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       |                      | Orthopedics               |
| IM7.8                                | Determine the potential causes of joint pain based on the presenting features of joint involvement                          | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       |                      | Orthopedics               |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods          | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM7.9  | Describe the common signs and symptoms of articular and periarticular diseases  | K                 | KH                     | Y            | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | Orthopedics               |
| IM7.10 | Describe the systemic manifestations of rheumatologic disease   | K                 | KH                     | Y            | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM7.11 | Elicit document and present a medical history that will differentiate the aetiologies of disease                          | S                 | SH                     | Y            | Bedside clinic, DOAP session           | Skill assessment                |                                       |                      |                           |
| IM7.12 | Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease | S                 | SH                     | Y            | Bedside clinic, DOAP session           | Skill assessment                |                                       |                      | Orthopedics               |
| IM7.13 | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology             | K/S               | KH                     | Y            | Bedside clinic, Small group discussion | Skill assessment/<br>Written    |                                       |                      |                           |
| IM7.14 | Describe the appropriate diagnostic work up based on the presumed aetiology   | K                 | KH                     | Y            | Bedside clinic, Small group discussion | Skill assessment/<br>Written    |                                       |                      |                           |
| IM7.15 | Enumerate the indications for and interpret the results of : CBC, anti-CCP, RA, ANA, DNA and other tests of autoimmunity  | K                 | SH                     | Y            | Bedside clinic, Small group discussion | Skill assessment/<br>Written    |                                       | Pathology            |                           |
| IM7.16 | Enumerate the indications for arthrocentesis  | K                 | K                      | Y            | Small group discussion, Lecture        | Written/ Viva voce              |                                       |                      | Orthopedics               |
| IM7.17 | Enumerate the indications and interpret plain radiographs of joints   | K                 | SH                     | Y            | Bedside clinic, Small group discussion | Skill assessment/<br>Written    |                                       | Radiodiagnosis       | Orthopedics               |
| IM7.18 | Communicate diagnosis, treatment plan and subsequent follow up plan to patients   | C                 | SH                     | Y            | DOAP session                           | Skill assessment/<br>Written    |                                       |                      |                           |
| IM7.19 | Develop an appropriate treatment plan for patients with rheumatologic diseases  | K                 | KH                     | Y            | Bedside clinic, Small group discussion | Skill assessment/<br>Written    |                                       |                      |                           |
| IM7.20 | Select, prescribe and communicate appropriate medications for relief of joint pain  | K/C               | SH                     | Y            | DOAP session                           | Skill assessment/<br>Written    |                                       | Pharmacology         | Orthopedics               |
| IM7.21 | Select, prescribe and communicate preventive therapy for crystalline arthropathies  | K/C               | SH                     | Y            | DOAP session                           | Skill assessment/<br>Written    |                                       | Pharmacology         |                           |

| Number                     | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                 | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|----------------------------|--|-------------------------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|-----------------------|---------------------------|
| IM7.22                     | Select, prescribe and communicate treatment option for systemic rheumatologic conditions                               | K/C                                 | SH                     | Y            | DOAP session  | Skill assessment/<br>Written    |                                       | Pharmacology          |                           |
| IM7.23                     | Describe the basis for biologic and disease modifying therapy in rheumatologic diseases                                | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                        | Skill assessment/<br>Written    |                                       | Pharmacology          |                           |
| IM7.24                     | Communicate and incorporate patient preferences in the choice of therapy   | C/A                                 | SH                     | Y            | DOAP session  | Skill assessment                |                                       | AETCOM                |                           |
| IM7.25                     | Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions          | C                                   | SH                     | Y            | DOAP session  | Skill assessment                |                                       |                       |                           |
| IM7.26                     | Demonstrate an understanding of the impact of rheumatologic conditions on quality of life, well being, work and family | A                                   | SH                     | Y            | DOAP session  | Skill assessment                |                                       |                       |                           |
| IM7.27                     | Determine the need for specialist consultation   | K                                   | K                      | Y            | Small group discussion, Lecture                               | Viva voce                       |                                       |                       |                           |
| <b>Topic: Hypertension</b> |  | <b>Number of competencies: (20)</b> |                        |              | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                       |                       |                           |
| IM8.1                      | Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension              | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology |                           |
| IM8.2                      | Describe and discuss the pathophysiology of hypertension   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology, Physiology |                           |
| IM8.3                      | Describe and discuss the genetic basis of hypertension   | K                                   | KH                     | N            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology             |                           |
| IM8.4                      | Define and classify hypertension   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology             |                           |
| IM8.5                      | Describe and discuss the differences between primary and secondary hypertension  | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology             |                           |
| IM8.6                      | Define, describe and discuss and recognise hypertensive urgency and emergency  | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                       |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods              | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|--------------|---------------------------------|--|---------------------------------------|----------------------|---------------------------|
| IM8.7  | Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce                           |                                       | Pathology            |                           |
| IM8.8  | Describe, discuss and identify target organ damage due to hypertension   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce                           |                                       | Pathology            |                           |
| IM8.9  | Elicit document and present a medical history that includes: duration and levels, symptoms, comorbidities, lifestyle, risk factors, family history, psychosocial and environmental factors, dietary assessment, previous and concomitant therapy | K                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                             |                                       |                      |                           |
| IM8.10 | Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart   | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                             |                                       |                      |                           |
| IM8.11 | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology  | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                             |                                       |                      |                           |
| IM8.12 | Describe the appropriate diagnostic work up based on the presumed aetiology  | K                 | KH                     | Y            | Small group discussion          | Skill assessment/<br>Written/ Viva voce      |                                       |                      |                           |
| IM8.13 | Enumerate the indications for and interpret the results of : CBC, Urine routine, BUN, Cr, Electrolytes, Uric acid, ECG   | K                 | KH                     | Y            | Small group discussion          | Skill assessment/<br>Written/ Viva voce      |                                       |                      |                           |
| IM8.14 | Develop an appropriate treatment plan for essential hypertension   | K                 | KH                     | Y            | Small group discussion          | Written/ Viva voce                           |                                       | Pharmacology         |                           |
| IM8.15 | Recognise, prioritise and manage hypertensive emergencies  | S                 | SH                     | Y            | DOAP session                    | Skill assessment/<br>Written                 |                                       | Pharmacology         |                           |
| IM8.16 | Develop and communicate to the patient lifestyle modification including weight reduction, moderation of alcohol intake, physical activity and sodium intake  | C                 | SH                     | Y            | DOAP session                    | Skill assessment                             |                                       |                      |                           |
| IM8.17 | Perform and interpret a 12 lead ECG  | S                 | P                      | Y            | DOAP session                    | documentation in log<br>book/ skills station |                                       |                      |                           |
| IM8.18 | Incorporate patient preferences in the management of HTN   | A/C               | SH                     | Y            | DOAP session                    | Skill assessment                             |                                       |                      |                           |

| Number               | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|----------------------|--|-------------------------------------|------------------------|--------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| IM8.19               | Demonstrate understanding of the impact of Hypertension on quality of life, well being, work and family  | A                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | observation by faculty               |                                       |                      |                           |
| IM8.20               | Determine the need for specialist consultation   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                   |                                       |                      |                           |
| <b>Topic: Anemia</b> |  | <b>Number of competencies: (21)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                      |                                       |                      |                           |
| IM9.1                | Define, describe and classify anemia based on red blood cell size and reticulocyte count   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                   |                                       | Pathology            |                           |
| IM9.2                | Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                   |                                       | Pathology            |                           |
| IM9.3                | Elicit document and present a medical history that includes symptoms, risk factors including GI bleeding, prior history, medications, menstrual history, and family history      | S                                   | SH                     | Y            | Bed side clinic, DOAP session                                  | Skill assessment                     |                                       |                      |                           |
| IM9.4                | Perform a systematic examination that includes : general examination for pallor, oral examination, DOAP session of hyper dynamic circulation, lymph node and splenic examination | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | Skill assessment                     |                                       |                      |                           |
| IM9.5                | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology  | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | Skill assessment/<br>Written         |                                       | Pathology            |                           |
| IM9.6                | Describe the appropriate diagnostic work up based on the presumed aetiology  | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | Skill assessment/<br>Written         |                                       | Pathology            |                           |
| IM9.7                | Describe and discuss the meaning and utility of various components of the hemogram   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce/ Skill assessment |                                       | Pathology            |                           |
| IM9.8                | Describe and discuss the various tests for iron deficiency   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce/ Skill assessment |                                       | Pathology            |                           |
| IM9.9                | Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate  | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | Skill assessment/<br>Written         |                                       | Pathology            |                           |
| IM9.10               | Describe, perform and interpret a peripheral smear and stool occult blood  | S                                   | SH                     | P            | Bedside clinic, DOAP session                                   | Skill assessment/<br>Written         |                                       | Pathology            |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                 | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|---|--|-------------------------------------|------------------------|--------------|---|--------------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| IM9.11  | Describe the indications and interpret the results of a bone marrow aspirations and biopsy | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce/ Skill assessment |                                       | Pathology                           |                           |
| IM9.12  | Describe, develop a diagnostic plan to determine the aetiology of anemia                   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce/ Skill assessment |                                       | Pathology                           |                           |
| IM9.13  | Prescribe replacement therapy with iron, B12, folate                                       | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                  | Skill assessment/<br>Written         |                                       | Pharmacology                        |                           |
| IM9.14  | Describe the national programs for anemia prevention                                       | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       | Pharmacology,<br>Community Medicine |                           |
| IM9.15  | Communicate the diagnosis and the treatment appropriately to patients                      | C                                   | SH                     | Y            | DOAP session  | Skill assessment                     |                                       |                                     |                           |
| IM9.16  | Incorporate patient preferences in the management of anemia                                | C                                   | SH                     | Y            | DOAP session  | Skill assessment                     |                                       |                                     |                           |
| IM9.17  | Describe the indications for blood transfusion and the appropriate use of blood components | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce/ Skill assessment |                                       | Pathology                           |                           |
| IM9.18  | Describe the precautions required necessary when performing a blood transfusion            | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce/ Skill assessment |                                       |                                     |                           |
| IM9.19  | Assist in a blood transfusion  | S                                   | SH                     | Y            | Bedside clinic  | document in log book                 |                                       |                                     |                           |
| IM9.20  | Communicate and counsel patients with methods to prevent nutritional anemia                | C                                   | SH                     | Y            | DOAP session  | Skill assessment                     |                                       |                                     |                           |
| IM9.21  | Determine the need for specialist consultation   | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written                              |                                       |                                     |                           |
| <b>Topic: Acute Kidney Injury and Chronic renal failure</b> |  | <b>Number of competencies: (31)</b> |                        |              | <b>Number of procedures that require certification: (NIL)</b> |                                      |                                       |                                     |                           |
| IM10.1  | Define, describe and differentiate between acute and chronic renal failure                 | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       | Pathology                           |                           |
| IM10.2  | Classify, describe and differentiate the pathophysiologic causes of acute renal failure    | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce                   |                                       | Pathology                           |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods        | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|--------------------------------------|---|---------------------------------------|----------------------|---------------------------|
| IM10.3  | Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF   | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.4  | Describe the evolution, natural history and treatment of ARF   | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.5  | Describe and discuss the aetiology of CRF  | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.6  | Stage Chronic Kidney Disease   | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.7  | Describe and discuss the pathophysiology and clinical findings of uraemia  | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.8  | Classify, describe and discuss the significance of proteinuria in CKD  | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.9  | Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD  | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.10 | Describe and discuss the association between CKD glycemia and hypertension   | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.11 | Describe and discuss the relationship between CAD risk factors and CKD and in dialysis   | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pathology            |                           |
| IM10.12 | Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes | S                 | SH                     | Y            | Bedside clinic, DOAP session         | Skill assessment                        |                                       |                      |                           |
| IM10.13 | Perform a systematic examination that establishes the diagnosis and severity including determination of volume status, presence of edema and heart failure, features of uraemia and associated systemic disease  | S                 | SH                     | Y            | Bedside clinic, DOAP session         | Skill assessment                        |                                       |                      |                           |
| IM10.14 | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology  | K                 | KH                     | Y            | DOAP session, Small group discussion | Skill assessment/<br>Written/ Viva voce |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods        | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|--------------|--------------------------------------|---|---------------------------------------|----------------------|---------------------------|
| IM10.15 | Describe the appropriate diagnostic work up based on the presumed aetiology   | K                 | SH                     | Y            | DOAP session, Small group discussion | Skill assessment/<br>Written/ Viva voce |                                       |                      |                           |
| IM10.16 | Enumerate the indications for and interpret the results of : renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap                                      | K                 | KH                     | Y            | DOAP session, Small group discussion | Skill assessment/<br>Written/ Viva voce |                                       | Pathology            |                           |
| IM10.17 | Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)                            | S                 | SH                     | Y            | DOAP session, Small group discussion | Skill assessment/<br>Written/ Viva voce |                                       | Pathology            |                           |
| IM10.18 | Identify the ECG findings in hyperkalemia   | S                 | SH                     | Y            | DOAP session, Small group discussion | Skill assessment/<br>Written/ Viva voce |                                       |                      |                           |
| IM10.19 | Enumerate the indications and describe the findings in renal ultrasound   | K                 | KH                     | N            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Radiodiagnosis       |                           |
| IM10.20 | Describe and discuss the indications to perform arterial blood gas analysis: interpret the data   | S                 | P                      | Y            | DOAP session                         | documentation in log book               |                                       |                      |                           |
| IM10.21 | Describe and discuss the indications for and insert a peripheral intravenous catheter   | S                 | P                      | Y            | DOAP session, Bedside clinic         | documentation in logbook                |                                       |                      |                           |
| IM10.22 | Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter   | S                 | SH                     | N            | DOAP session                         | Skill assessment with model             |                                       |                      |                           |
| IM10.23 | Communicate diagnosis treatment plan and subsequent follow up plan to patients  | C                 | SH                     | Y            | DOAP session                         | Skill assessment                        |                                       |                      |                           |
| IM10.24 | Counsel patients on a renal diet  | K                 | SH                     | Y            | DOAP session                         | Skill assessment                        |                                       |                      |                           |
| IM10.25 | Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis                      | K/C               | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       | Pharmacology         |                           |
| IM10.26 | Describe and discuss supportive therapy in CKD including diet, anti hypertensives, glycemc therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and secondary hyperparathyroidism | K                 | KH                     | Y            | Lecture, Small group discussion      | Written/ Viva voce                      |                                       |                      |                           |

| Number                          | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                 | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------------------------------|---|-------------------------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM10.27                         | Describe and discuss the indications for renal dialysis   | C/A                                 | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| IM10.28                         | Describe and discuss the indications for renal replacement therapy  | C                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| IM10.29                         | Describe discuss and communicate the ethical and legal issues involved in renal replacement therapy                               | C/A                                 | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| IM10.30                         | Recognise the impact of CKD on patient's quality of life well being work and family   | A                                   | K                      | Y            | Lecture, Small group discussion, Bedside clinic               | observation by faculty          |                                       |                      |                           |
| IM10.31                         | Incorporate patient preferences in to the care of CKD   | A/C                                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinic               | observation by faculty          |                                       |                      |                           |
| <b>Topic: Diabetes Mellitus</b> |   | <b>Number of competencies: (24)</b> |                        |              | <b>Number of procedures that require certification : (02)</b> |                                 |                                       |                      |                           |
| IM11.1                          | Define and classify diabetes  | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| IM11.2                          | Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes                 | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology            |                           |
| IM11.3                          | Describe and discuss the epidemiology and pathogenesis and risk factors economic impact and clinical evolution of type 2 diabetes | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology            |                           |
| IM11.4                          | Describe and discuss the genetic background and the influence of the environment on diabetes                                      | K                                   | KH                     | N            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| IM11.5                          | Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes         | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology            |                           |
| IM11.6                          | Describe and discuss the pathogenesis and precipitating factors, recognition and management of diabetic emergencies               | K                                   | KH                     | Y            | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|----------------------------|---------------------------|
| IM11.7  | Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                            |                           |
| IM11.8  | Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)          | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                            |                           |
| IM11.9  | Describe and recognise the clinical features of patients who present with a diabetic emergency   | K                 | KH                     | Y            | Small group discussion, Lecture | Written/ Viva voce              |                                       |                            |                           |
| IM11.10 | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology  | K                 | KH                     | Y            | Small group discussion, Lecture | Written/ Viva voce              |                                       |                            |                           |
| IM11.11 | Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile         | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       | Pathology                  |                           |
| IM11.12 | Perform and interpret a capillary blood glucose test   | S                 | P                      | Y            | Bedside clinic, DOAP session    | Skill assessment                | 2                                     | Pathology,<br>Biochemistry |                           |
| IM11.13 | Perform and interpret a urinary ketone estimation with a dipstick  | S                 | P                      | Y            | Bedside clinic, DOAP session    | Skill assessment                | 2                                     | Pathology,<br>Biochemistry |                           |
| IM11.14 | Recognise the presentation of hypoglycaemia and outline the principles on its therapy  | K                 | KH                     | Y            | Small Group discussion, Lecture | Written/ Viva voce              |                                       |                            |                           |
| IM11.15 | Recognise the presentation of diabetic emergencies and outline the principles of therapy   | K                 | KH                     | Y            | Small Group discussion, Lecture | Written/ Viva voce              |                                       |                            |                           |
| IM11.16 | Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions   | K                 | KH                     | Y            | Small Group discussion, Lecture | Written/ Viva voce              |                                       | Pharmacology               |                           |
| IM11.17 | Outline a therapeutic approach to therapy of T2Diabetes based on presentation, severity and complications in a cost effective manner   | K                 | KH                     | Y            | Small Group discussion, Lecture | Written/ Viva voce              |                                       |                            |                           |

| Number                            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|-----------------------------------|---|-------------------------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|-----------------------|---------------------------|
| IM11.18                           | Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pharmacology          |                           |
| IM11.19                           | Demonstrate and counsel patients on the correct technique to administer insulin   | S/C                                 | SH                     | Y            | DOAP session   | Skill assessment                |                                       | Pharmacology          |                           |
| IM11.20                           | Demonstrate to and counsel patients on the correct technique of self monitoring of blood glucoses   | S/C                                 | SH                     | Y            | DOAP session   | Skill assessment                |                                       |                       |                           |
| IM11.21                           | Recognise the importance of patient preference while selecting therapy for diabetes   | A                                   | KH                     | Y            | DOAP session   | faculty observation             |                                       |                       |                           |
| IM11.22                           | Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pathology, Physiology |                           |
| IM11.23                           | Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of diabetic ketoacidosis  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                       |                           |
| IM11.24                           | Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of Hyperosmolar non ketotic state   | K                                   | KH                     | N            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                       |                           |
| <b>Topic: Thyroid dysfunction</b> |   | <b>Number of competencies: (15)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                 |                                       |                       |                           |
| IM12.1                            | Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease   | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pathology, Physiology |                           |
| IM12.2                            | Describe and discuss the genetic basis of some forms of thyroid dysfunction   | K                                   | K                      | N            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                       |                           |
| IM12.3                            | Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short notes                     |                                       | Pathology, Physiology |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods          | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM12.4  | Describe and discuss the principles of radio iodine uptake in the diagnosis of thyroid disorders   | K                 | KH                     | Y            | Lecture, Small group discussion        | Short notes/ Viva voce          |                                       |                      |                           |
| IM12.5  | Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity   | S                 | SH                     | Y            | Bedside clinic                         | Skill assessment/ Short case    |                                       |                      |                           |
| IM12.6  | Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings | S                 | SH                     | Y            | Bed side clinic, DOAP session          | Skill assessment                |                                       |                      | General Surgery           |
| IM12.7  | Demonstrate the correct technique to palpate the thyroid   | S                 | SH                     | Y            | Bedside clinic, DOAP session           | Skill assessment                |                                       |                      | General Surgery           |
| IM12.8  | Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis  | K                 | KH                     | Y            | Bedside clinic, small group discussion | Short case                      |                                       |                      | General Surgery           |
| IM12.9  | Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan  | S                 | SH                     | Y            | Bedside clinic, DOAP session           | Skill assessment                |                                       |                      | General Surgery           |
| IM12.10 | Identify atrial fibrillation, pericardial effusion and bradycardia on ECG  | S                 | SH                     | Y            | Bedside clinic, lab                    | Skill assessment                |                                       |                      | General Surgery           |
| IM12.11 | Interpret thyroid function tests in hypo and hyperthyroidism   | S                 | SH                     | Y            | Bedside clinic, lab                    | Skill assessment                |                                       |                      | General Surgery           |
| IM12.12 | Describe and discuss the iodisation programs of the government of India  | K                 | KH                     | Y            | Lecture, Bedside clinic                | Short note                      |                                       | Community Medicine   |                           |
| IM12.13 | Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs  | K                 | KH                     | Y            | Lecture, Small group discussion        | Viva voce/ Short note           |                                       | Pharmacology         | General Surgery           |
| IM12.14 | Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status   | S/C               | SH                     | Y            | Skill assessment                       | Skill assessment                |                                       | Pharmacology         |                           |
| IM12.15 | Describe and discuss the indications of thionamide therapy, radio iodine therapy and surgery in the management of thyrotoxicosis   | K                 | KH                     | Y            | Bedside clinic, Small group discussion | Short note/ Viva voce           |                                       | Pharmacology         | General Surgery           |

| Number                            | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|-----------------------------------|--|-------------------------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|-------------------------|---------------------------|
| <b>Topic: Common malignancies</b> |  | <b>Number of competencies: (19)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                 |                                       |                         |                           |
| IM13.1                            | Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       | Pathology, Biochemistry |                           |
| IM13.2                            | Describe the genetic basis of selected cancers   | K                                   | K                      | N            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       | Pathology               |                           |
| IM13.3                            | Describe the relationship between infection and cancers  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       | Pathology, Microbiology |                           |
| IM13.4                            | Describe the natural history, presentation, course, complications and cause of death for common cancers  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       | Pathology               |                           |
| IM13.5                            | Describe the common issues encountered in patients at the end of life and principles of management   | K                                   | K                      | N            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       |                         |                           |
| IM13.6                            | Describe and distinguish the difference between curative and palliative care in patients with cancer   | K                                   | K                      | N            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       | Pharmacology            |                           |
| IM13.7                            | Elicit document and present a history that will help establish the aetiology of cancer and includes the appropriate risk factors, duration and evolution                         | S                                   | K                      | Y            | Bedside clinic   | Skill assessment/ Short case    |                                       |                         | General Surgery           |
| IM13.8                            | Perform and demonstrate a physical examination that includes an appropriate general and local examination that excludes the diagnosis, extent spread and complications of cancer | S                                   | SH                     | Y            | Bedside clinic   | Skill assessment/ short case    |                                       |                         | General Surgery           |
| IM13.9                            | Demonstrate in a mannequin the correct technique for performing breast exam, rectal examination and cervical examination and pap smear   | S                                   | K                      | Y            | Bedside clinic   | Skill assessment/ Short case    |                                       | Human Anatomy           | General Surgery           |
| IM13.10                           | Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis                                       | S                                   | K                      | Y            | Bedside clinic   | Skill assessment/ Short case    |                                       |                         | General Surgery           |
| IM13.11                           | Order and interpret diagnostic testing based on the clinical diagnosis including CBC and stool occult blood and prostate specific antigen  | S                                   | K                      | Y            | Bedside clinic   | Skill assessment/ Short case    |                                       |                         |                           |



| Number                | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-----------------------|---|-------------------------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM13.12               | Describe the indications and interpret the results of Chest X Ray, mammogram, skin and tissue biopsies and tumor markers used in common cancers | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Short note/ Viva voce           |                                       | Radiodiagnosis       |                           |
| IM13.13               | Describe and assess pain and suffering objectively in a patient with cancer   | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Short note/ Viva voce           |                                       | Pharmacology         | General Surgery           |
| IM13.14               | Describe the indications for surgery, radiation and chemotherapy for common malignancies  | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Short note/ Viva voce           |                                       | Pharmacology         | General Surgery           |
| IM13.15               | Describe the need, tests involved, their utility in the prevention of common malignancies   | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Short note/ Viva voce           |                                       | Pathology            |                           |
| IM13.16               | Demonstrate an understanding and needs and preferences of patients when choosing curative and palliative therapy                                | A/C                                 | KH                     | Y            | Bedside clinic, small group discussion                         | Short note/ Viva voce           |                                       | AETCOM               |                           |
| IM13.17               | Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer                              | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Short note/ Viva voce           |                                       | Pharmacology         | Anesthesiology            |
| IM13.18               | Describe and discuss the ethical and the medico legal issues involved in end of life care   | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Short note/ Viva voce           |                                       | AETCOM               |                           |
| IM13.19               | Describe the therapies used in alleviating suffering in patients at the end of life   | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Short note/ Viva voce           |                                       | AETCOM               |                           |
| <b>Topic: Obesity</b> |   | <b>Number of competencies: (15)</b> |                        |              | <b>Number of procedures that require certification: ( NIL)</b> |                                 |                                       |                      |                           |
| IM14.1                | Define and measure obesity as it relates to the Indian population   | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       |                      |                           |
| IM14.2                | Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes                         | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       | Pathology            |                           |
| IM14.3                | Describe and discuss the monogenic forms of obesity   | K                                   | K                      | N            | Lecture, Small group discussion                                | Short note/ Viva voce           |                                       | Pathology            |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                      | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|--|---|---------------------------------------|-------------------------------|---------------------------|
| IM14.4  | Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity  | K                 | K                      | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       | Pathology, Community Medicine |                           |
| IM14.5  | Describe and discuss the natural history of obesity and its complications  | K                 | K                      | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       | Pathology                     |                           |
| IM14.6  | Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history, clues for secondary causes and motivation to lose weight | S                 | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment                        |                                       |                               |                           |
| IM14.7  | Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities               | S                 | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment                        |                                       |                               |                           |
| IM14.8  | Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis   | S                 | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment/ Short note/ Viva voce |                                       |                               |                           |
| IM14.9  | Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.  | S                 | SH                     | Y            | Bedside clinic, Skills lab, Small group discussion | Skill assessment/ Short note/ Viva voce |                                       |                               |                           |
| IM14.10 | Describe the indications and interpret the results of tests for secondary causes of obesity  | K                 | KH                     | Y            | Bedside clinic, Skills lab, Small group discussion | Skill assessment/ Short note/ Viva voce |                                       |                               |                           |
| IM14.11 | Communicate and counsel patient on behavioural, dietary and lifestyle modifications  | C                 | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment                        |                                       |                               |                           |
| IM14.12 | Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgemental way  | A/C               | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment                        |                                       |                               |                           |
| IM14.13 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity   | K                 | K                      | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       | Pharmacology                  |                           |
| IM14.14 | Describe and enumerate the indications and side effects of bariatric surgery   | K                 | K                      | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       |                               | General Surgery           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                        | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|--|---|-------------------|------------------------|--------------|--|---|---------------------------------------|-----------------------|---------------------------|
| IM14.15  | Describe and enumerate and educate patients, health care workers and the public on measures to prevent obesity and promote a healthy lifestyle  | K                 | K                      | Y            | Lecture, Small group discussion                      | Short note/ Viva voce                   |                                       |                       |                           |
| <b>Topic: GI bleeding</b> <span style="margin-left: 200px;"><b>Number of competencies: (18)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |   |                   |                        |              |  |   |                                       |                       |                           |
| IM15.1   | Enumerate, describe and discuss the aetiology of upper and lower GI bleeding  | K                 | KH                     | Y            | Lecture, Small group discussion                      | Short note/ Viva voce                   |                                       | Pathology             | General Surgery           |
| IM15.2   | Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed   | S                 | SH                     | Y            | DOAP session, Small group discussion, Lecture        | Written/ Viva voce/ Skill assessment    |                                       | Pathology             | General Surgery           |
| IM15.3   | Describe and discuss the physiologic effects of acute blood and volume loss   | K                 | K                      | Y            | Lecture, Small group discussion                      | Short note/ Viva voce                   |                                       | Pathology, Physiology | General Surgery           |
| IM15.4   | Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors     | S                 | SH                     | Y            | Bedside clinic                                       | Skill assessment                        |                                       |                       | General Surgery           |
| IM15.5   | Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination                | S                 | SH                     | Y            | Bedside clinic, Skills lab                           | Skill assessment                        |                                       |                       | General Surgery           |
| IM15.6   | Distinguish between upper and lower gastrointestinal bleeding based on the clinical features  | S                 | KH                     | Y            | Lecture, Small group discussion                      | Short note/ Viva voce                   |                                       |                       | General Surgery           |
| IM15.7   | Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent  | S                 | SH                     | Y            | DOAP session   | Skill assessment                        |                                       |                       | General Surgery           |
| IM15.8   | Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis  | S                 | SH                     | Y            | Bedside clinic, Skills lab                           | Skill assessment/ Short note/ Viva voce |                                       |                       | General Surgery           |
| IM15.9   | Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test. | S                 | SH                     | Y            | Bedside clinic, DOAP session, Small group discussion | Skill assessment/ Short note/ Viva voce |                                       | Pathology             | General Surgery           |

| Number                           | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods            | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|----------------------------------|--|-------------------------------------|------------------------|--------------|--|--|---------------------------------------|-------------------------------|---------------------------|
| IM15.10                          | Enumerate the indications for endoscopy, colonoscopy and other imaging procedures in the investigation of Upper GI bleeding  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                         |                                       |                               | General Surgery           |
| IM15.11                          | Develop, document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion, and specific therapy for arresting blood loss | S                                   | KH                     | Y            | Lecture, Small group discussion                                | Short note/ Viva voce                      |                                       | Pathology                     | General Surgery           |
| IM15.12                          | Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion            | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce                      |                                       | Pathology                     | General Surgery           |
| IM15.13                          | Observe cross matching and blood / blood component transfusion   | S                                   | SH                     | Y            | Bedside clinic   | Short note/ Viva voce/<br>Skill assessment |                                       | Pathology                     | General Surgery           |
| IM15.14                          | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed                           | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/Viva voce                       |                                       | Pharmacology                  | General Surgery           |
| IM15.15                          | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori                          | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce                      |                                       | Pharmacology,<br>Microbiology | General Surgery           |
| IM15.16                          | Enumerate the indications for endoscopic interventions and Surgery   | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce                      |                                       |                               | General Surgery           |
| IM15.17                          | Determine appropriate level of specialist consultation   | S                                   | K                      | Y            | Small group discussion   |  |                                       |                               | General Surgery           |
| IM15.18                          | Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options   | S                                   | SH                     | Y            | DOAP session   | Skill assessment                           |                                       |                               | General Surgery           |
| <b>Topic: Diarrheal disorder</b> |  | <b>Number of competencies: (17)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |  |                                       |                               |                           |
| IM16.1                           | Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non infectious causes  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce                      |                                       | Microbiology                  |                           |
| IM16.2                           | Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance   | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce                      |                                       |                               |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                      | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|--|---|---------------------------------------|-------------------------------|---------------------------|
| IM16.3  | Describe and discuss the chronic effects of diarrhea including malabsorption   | K                 | K                      | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       |                               |                           |
| IM16.4  | Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses     | S                 | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment                        |                                       | Microbiology,<br>Pathology    |                           |
| IM16.5  | Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination        | S                 | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment                        |                                       |                               |                           |
| IM16.6  | Distinguish between diarrhea and dysentery based on clinical features  | S                 | KH                     | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       |                               |                           |
| IM16.7  | Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis                             | S                 | SH                     | Y            | Bedside clinic, Skills lab                         | Skill assessment/ short note/ Viva voce |                                       |                               |                           |
| IM16.8  | Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination  | S                 | SH                     | Y            | Bedside clinic, Skills lab, Small group discussion | Skill assessment/ Short note/ Viva voce |                                       | Microbiology,<br>Pathology    |                           |
| IM16.9  | Identify common parasitic causes of diarrhea under the microscope in a stool specimen  | S                 | SH                     | Y            | DOAP session                                       | Skill assessment                        |                                       | Microbiology                  |                           |
| IM16.10 | Identify vibrio cholera in a hanging drop specimen   | S                 | SH                     | Y            | DOAP session                                       | Skill Assessment                        |                                       | Microbiology                  |                           |
| IM16.11 | Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea  | K                 | KH                     | Y            | Lecture, Small group discussion                    | Written/ Viva voce                      |                                       | Microbiology                  |                           |
| IM16.12 | Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea | K                 | KH                     | Y            | Lecture, Small group discussion                    | Written/ Viva voce                      |                                       | Pathology                     | General Surgery           |
| IM16.13 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea  | K                 | K                      | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       | Pharmacology,<br>Microbiology |                           |
| IM16.14 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea  | K                 | K                      | Y            | Lecture, Small group discussion                    | Short note/ Viva voce                   |                                       | Pharmacology,<br>Microbiology |                           |

| Number                 | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods  | Number<br>required to<br>certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|------------------------|---|-------------------------------------|------------------------|--------------|--|----------------------------------|---------------------------------------|-------------------------|---------------------------|
| IM16.15                | Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis  | S                                   | SH                     | Y            | Lecture, Small group discussion                                | Short note/ Viva voce            |                                       | Pathology               | General Surgery           |
| IM16.16                | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce            |                                       | Pharmacology            |                           |
| IM16.17                | Describe and enumerate the indications for surgery in inflammatory bowel disease  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Short note/ Viva voce            |                                       |                         | General Surgery           |
| <b>Topic: Headache</b> |   | <b>Number of competencies: (14)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                  |                                       |                         |                           |
| IM17.1                 | Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache                              | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Short note/ Viva voce            |                                       | Human Anatomy           |                           |
| IM17.2                 | Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches | S                                   | SH                     | Y            | Bedside clinic, Small group discussion                         | Bedside clinic/ Skill assessment |                                       |                         |                           |
| IM17.3                 | Classify migraine and describe the distinguishing features between classical and non classical forms of migraine  | K                                   | KH                     | Y            | Bedside clinic, Small group discussion                         | Bedside clinic/ Skill assessment |                                       |                         |                           |
| IM17.4                 | Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis                               | S                                   | SH                     | Y            | Bedside clinic, Small group discussion                         | Bedside clinic/ Skill assessment |                                       |                         |                           |
| IM17.5                 | Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation   | S                                   | SH                     | Y            | Bedside clinic, Small group discussion                         | Bedside clinic/ skill assessment |                                       |                         |                           |
| IM17.6                 | Choose and interpret diagnostic testing based on the clinical diagnosis including imaging   | S                                   | SH                     | Y            | Lecture, Small group discussion, Bedside clinic                | Skill Assessment                 |                                       |                         |                           |
| IM17.7                 | Enumerate the indications and describe the findings in the CSF in patients with meningitis  | K                                   | K                      | Y            | Small group discussion, Bedside clinic                         | Skill Assessment                 |                                       | Microbiology, Pathology |                           |

| Number                                 | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|----------------------------|---------------------------|
| IM17.8                                 | Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture  | S                                   | SH                     | Y            | DOAP session   | Skill assessment                |                                       | Microbiology,<br>Pathology |                           |
| IM17.9                                 | Interpret the CSF findings when presented with various parameters of CSF fluid analysis  | S                                   | SH                     | Y            | Small group discussion, Bedside clinic                         | Skill assessment                |                                       | Microbiology,<br>Pathology |                           |
| IM17.10                                | Enumerate the indications for emergency care admission and immediate supportive care in patients with headache   | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                            |                           |
| IM17.11                                | Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pharmacology               |                           |
| IM17.12                                | Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pharmacology               |                           |
| IM17.13                                | Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pharmacology               |                           |
| IM17.14                                | Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy   | A/C                                 | SH                     | N            | DOAP session   | Skill Assessment                |                                       | Pharmacology               | Psychiatry                |
| <b>Topic: Cerebrovascular accident</b> |  | <b>Number of competencies: (17)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                 |                                       |                            |                           |
| IM18.1                                 | Describe the functional and the vascular anatomy of the brain  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Human Anatomy              |                           |
| IM18.2                                 | Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Pathology                  |                           |
| IM18.3                                 | Elicit and document and present an appropriate history including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident | S                                   | SH                     | Y            | Bedside clinic   | Skill assessment                |                                       | Pathology                  |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                        | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|--------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| IM18.4  | Identify the nature of the cerebrovascular accident based on the temporal evolution and resolution of the illness                                     | K                 | KH                     | Y            | Bedside clinic, Small group discussion               | Skill Assessment                     |                                       |                      |                           |
| IM18.5  | Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history | S                 | SH                     | Y            | Bedside clinic, DOAP session                         | Skill Assessment                     |                                       |                      |                           |
| IM18.6  | Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion  | K/S               | SH                     | Y            | Bedside clinic, DOAP session                         | Skill Assessment                     |                                       | Physiology           |                           |
| IM18.7  | Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech  | K/S               | SH                     | N            | Bedside clinic, DOAP session                         | Skill Assessment                     |                                       | Physiology           |                           |
| IM18.8  | Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in CNS disease                                    | K                 | KH                     | Y            | Small group discussion, Bedside clinic               | Written/ Viva voce                   |                                       | Physiology           |                           |
| IM18.9  | Choose and interpret the appropriate diagnostic and imaging test that will delineate the anatomy and underlying cause of the lesion                   | S                 | KH                     | Y            | Bedside clinic, DOAP session, Small group discussion | Written/ Viva voce/ Skill assessment |                                       | Radiodiagnosis       |                           |
| IM18.10 | Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)                                       | S                 | SH                     | Y            | Lecture, Small group discussion                      | Written/ Viva voce                   |                                       |                      |                           |
| IM18.11 | Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)  | K                 | KH                     | Y            | Lecture, Small group discussion                      | Written/ Viva voce                   |                                       |                      |                           |
| IM18.12 | Enumerate the indications for and describe acute therapy of non hemorrhagic stroke including the use of thrombolytic agents                           | K                 | KH                     | Y            | Lecture, Small group discussion                      | Written/ Viva voce                   |                                       |                      |                           |
| IM18.13 | Enumerate the indications for and describe the role of anti platelet agents in non hemorrhagic stroke   | K                 | KH                     | Y            | Lecture, Small group discussion                      | Written/ Viva voce                   |                                       |                      |                           |
| IM18.14 | Describe the initial management of a hemorrhagic stroke   | K                 | KH                     | Y            | Lecture, Small group discussion                      | Written/ Viva voce                   |                                       |                      |                           |
| IM18.15 | Enumerate the indications for surgery in a hemorrhagic stroke   | K                 | K                      | Y            | Lecture, Small group discussion                      | Written/ Viva voce                   |                                       |                      | General Surgery           |



| Number                           | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration      | Horizontal<br>Integration          |
|----------------------------------|---|--------------------------------------|------------------------|--------------|--|---|---------------------------------------|---------------------------|------------------------------------|
| IM18.16                          | Enumerate the indications describe and observe the multidisciplinary rehabilitation of patients with a CVA  | S                                    | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                           | Physical Medicine & Rehabilitation |
| IM18.17                          | Counsel patient and family about the diagnosis and therapy in an empathetic manner  | A/C                                  | SH                     | Y            | DOAP session   | Skill assessment                        |                                       |                           |                                    |
| <b>Topic: Movement disorders</b> |   | <b>Number of competencies: (09 )</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                           |                                    |
| IM19.1                           | Describe the functional anatomy of the locomotor system of the brain  | K                                    | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Human Anatomy, Physiology |                                    |
| IM19.2                           | Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors  | K                                    | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                           |                                    |
| IM19.3                           | Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the movement disorders | S                                    | SH                     | Y            | Bedside clinic   | Skill assessment                        |                                       |                           |                                    |
| IM19.4                           | Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales  | S                                    | SH                     | Y            | Bedside clinic   | Skill assessment                        |                                       |                           |                                    |
| IM19.5                           | Generate document and present a differential diagnosis and prioritise based on the history and physical examination   | S                                    | SH                     | Y            | Bedside clinic   | Skill assessment                        |                                       |                           |                                    |
| IM19.6                           | Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings  | S                                    | SH                     | Y            | Bedside clinic   | Skill assessment                        |                                       |                           |                                    |
| IM19.7                           | Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders  | S                                    | SH                     | Y            | Bedside clinic, Small group session                            | Skill assessment/<br>Written/ Viva voce |                                       | Radiodiagnosis            |                                    |
| IM19.8                           | Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome   | K                                    | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Pharmacology              |                                    |
| IM19.9                           | Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders   | K                                    | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Pharmacology              | General Surgery                    |

| Number                     | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods         | Number<br>required to<br>certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|----------------------------|--|-------------------------------------|------------------------|--------------|--|---|---------------------------------------|---------------------------------|---------------------------|
| <b>Topic: Envenomation</b> |  | <b>Number of competencies: (09)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                                 |                           |
| IM20.1                     | Enumerate the local poisonous snakes and describe the distinguishing marks of each   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Forensic Medicine, Pharmacology |                           |
| IM20.2                     | Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient with a snake bite in the field | S                                   | SH                     | Y            | DOAP session   | Skill assessment/<br>Written/ Viva voce |                                       | Forensic Medicine               |                           |
| IM20.3                     | Describe the initial approach to the stabilisation of the patient who presents with snake bite   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Forensic Medicine               |                           |
| IM20.4                     | Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite                                  | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | Skill assessment                        |                                       | Forensic Medicine               |                           |
| IM20.5                     | Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | Skill assessment                        |                                       |                                 |                           |
| IM20.6                     | Choose and interpret the appropriate diagnostic testing in patients with snake bites   | S                                   | SH                     | Y            | Small group discussion   | Written/ Viva voce                      |                                       |                                 |                           |
| IM20.7                     | Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti snake venom   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Pharmacology                    |                           |
| IM20.8                     | Describe the diagnosis, initial approach stabilisation and therapy of scorpion envenomation  | K                                   | KH                     | N            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Pharmacology                    |                           |
| IM20.9                     | Describe the diagnosis initial approach stabilisation and therapy of bee sting allergy   | K                                   | KH                     | N            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Pharmacology                    |                           |
| <b>Topic: Poisoning</b>    |  | <b>Number of competencies: (08)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                                 |                           |
| IM21.1                     | Describe the initial approach to the stabilisation of the patient who presents with poisoning  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Pharmacology                    |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                 | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--|--|-------------------|------------------------|--------------|---|--------------------------------------|---------------------------------------|---------------------------------|---------------------------|
| IM21.2   | Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification                     | K                 | KH                     | Y            | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.3   | Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy  | K                 | KH                     | Y            | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.4   | Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy                               | K                 | KH                     | Y            | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.5   | Observe and describe the functions and role of a poison center in suspected poisoning  | S                 | KH                     | Y            | DOAP session                                  | document in log book                 |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.6   | Describe the medico legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico legal report on a suspected poisoning | S                 | KH                     | Y            | Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.7   | Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy  | A/C               | SH                     | Y            | DOAP session                                  | Skill assessment                     |                                       | Forensic Medicine, Pharmacology |                           |
| IM21.8   | Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture                      | K                 | KH                     | Y            | DOAP session                                  | Skill assessment                     |                                       | Forensic Medicine, Psychiatry   |                           |
| <b>Topic: Mineral, Fluid Electrolyte and Acid base Disorder</b> <span style="margin-left: 150px;"><b>Number of competencies: (13)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification : (NIL)</b></span> |  |                   |                        |              |   |                                      |                                       |                                 |                           |
| IM22.1   | Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia  | K                 | KH                     | N            | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pathology, Physiology           |                           |
| IM22.2   | Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism  | K                 | KH                     | N            | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pathology                       | General Surgery           |
| IM22.3   | Describe the approach to the management of hypercalcemia   | K                 | KH                     | N            | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pharmacology                    |                           |
| IM22.4   | Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome   | K                 | KH                     | N            | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pathology                       |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P              | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods                               | Number<br>required to<br>certify<br>P | Vertical Integration        | Horizontal<br>Integration |
|--|--|-------------------|-------------------------------------|--------------|---------------------------------|---|---------------------------------------|-----------------------------|---------------------------|
| IM22.5   | Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management of the patient with hyponatremia                | K                 | KH                                  | Y            | Lecture, Small group discussion | Written/ Viva voce  |                                       |                             |                           |
| IM22.6   | Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyponatremia | K                 | KH                                  | Y            | Lecture, Small group discussion | Written/ Viva voce  |                                       |                             |                           |
| IM22.7   | Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hypokalemia  | K                 | KH                                  | Y            | Lecture, Small group discussion | Written/ Viva voce  |                                       |                             |                           |
| IM22.8   | Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyperkalemia | K                 | KH                                  | Y            | Lecture, Small group discussion | Written/ Viva voce  |                                       |                             |                           |
| IM22.9   | Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis   | K                 | KH                                  | N            | Lecture, Small group discussion | Written/ Viva voce  |                                       | Physiology                  |                           |
| IM22.10  | Enumerate the causes of describe the clinical and laboratory features of metabolic alkalosis   | K                 | KH                                  | N            | Lecture, Small group discussion | Written/ Viva voce  |                                       | Physiology                  |                           |
| IM22.11  | Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis   | K                 | KH                                  | N            | Lecture, Small group discussion | Written/ Viva voce  |                                       | Physiology                  |                           |
| IM22.12  | Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis  | K                 | KH                                  | N            | Lecture, Small group discussion | Written/ Viva voce  |                                       | Physiology                  |                           |
| IM22.13  | Identify the underlying acid based disorder based on an ABG report and clinical situation  | S                 | KH                                  | N            | Lecture, Small group discussion | Written/ Viva voce  |                                       | Physiology                  |                           |
| <b>Topic: Nutritional and Vitamin Deficiencies</b> |  |                   |                                     |              |                                 |   |                                       |                             |                           |
|  |  |                   | <b>Number of competencies: (05)</b> |              |                                 | <b>Number of procedures that require certification: (NIL)</b> |                                       |                             |                           |
| IM23.1   | Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses                                  | K                 | KH                                  | Y            | Lecture, Small group discussion | Written/ Viva voce  |                                       | Physiology,<br>Biochemistry | Pediatrics                |
| IM23.2   | Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital   | K                 | KH                                  | Y            | Lecture, Small group discussion | Written/ Viva voce  |                                       | Physiology,<br>Biochemistry | Pediatrics                |

| Number                   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|--------------------------|---|-------------------------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|--------------------------|---------------------------|
| IM23.3                   | Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.4                   | Enumerate the indications for enteral and parenteral nutrition in critically ill patients   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.5                   | Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet   | S                                   | SH                     | Y            | DOAP session   | Skill assessment                |                                       |                          |                           |
| <b>Topic: Geriatrics</b> |   | <b>Number of competencies: (22)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                 |                                       |                          |                           |
| IM24.1                   | Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                          |                           |
| IM24.2                   | Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components  | S                                   | SH                     | Y            | Bedside clinic, DOAP session                                   | Skill assessment                |                                       | Psychiatry               |                           |
| IM24.3                   | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of acute confusional states   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                          |                           |
| IM24.4                   | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vascular events in the elderly                                       | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                          |                           |
| IM24.5                   | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of depression in the elderly  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                          | Psychiatry                |
| IM24.6                   | Describe and discuss the aetiopathogenesis causes, clinical presentation, difference in discussion presentation identification, functional changes, acute care, stabilization, management and rehabilitation of dementia in the elderly | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                          | AETCOM                    |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration                             |
|---------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|----------------------|---|
| IM24.7  | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the elderly    | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | Psychiatry  |
| IM24.8  | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of osteoporosis in the elderly           | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      |   |
| IM24.9  | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of CVA in the elderly                    | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      |   |
| IM24.10 | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly                   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | Respiratory Medicine                                  |
| IM24.11 | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery        | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | Anesthesiology,<br>General Surgery                    |
| IM24.12 | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of degenerative joint disease            | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | Orthopedics   |
| IM24.13 | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly                  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | Orthopedics,<br>Physical Medicine &<br>Rehabilitation |
| IM24.14 | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of common fractures in the elderly       | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | Orthopedics   |
| IM24.15 | Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | Ophthalmology   |

| Number                                 | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration             | Horizontal<br>Integration                       |
|--|---|-------------------------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|----------------------------------|---|
| IM24.16                                | Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly               | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                                  | Orthopedics, Physical Medicine & Rehabilitation |
| IM24.17                                | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly                | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                                  | ENT   |
| IM24.18                                | Describe the impact of the demographic changes in ageing on the population  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Community Medicine               |   |
| IM24.19                                | Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on health.  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                                  | Psychiatry                                      |
| IM24.20                                | Enumerate and describe social interventions in the care of elderly including domiciliary discussion services, rehabilitation facilities, old age homes and state interventions                                | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                                  |   |
| IM24.21                                | Enumerate and describe ethical issues in the care of the elderly  | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       |                                  | AETCOM  |
| IM24.22                                | Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Physiology, Biochemistry         |   |
| <b>Topic: Miscellaneous Infections</b> |   | <b>Number of competencies: (13)</b> |                        |              | <b>Number of procedures that require certification : (NIL)</b> |                                 |                                       |                                  |   |
| IM25.1                                 | Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis, Rabies) and non-febrile infectious disease (e.g. Tetanus) | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written                         |                                       | Microbiology, Community Medicine |   |
| IM25.2                                 | Discuss and describe the common causes, pathophysiology and manifestations of these diseases  | K                                   | K                      | Y            | Lecture, Small group discussion                                | Written                         |                                       | Microbiology, Community Medicine |   |
| IM25.3                                 | Describe and discuss the pathophysiology and manifestations of these diseases   | K                                   | KH                     | Y            | Lecture, Small group discussion                                | Written                         |                                       | Microbiology                     |   |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods    | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|--------------|----------------------------------|---------------------------------|---------------------------------------|----------------------------|---------------------------|
| IM25.4  | Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel  | S                 | SH                     | Y            | Bedside clinic, DOAP session     | Skill assessment                |                                       | Community Medicine         |                           |
| IM25.5  | Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin, mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)   | S                 | SH                     | Y            | Bedside clinic, DOAP session     | Skill assessment                |                                       |                            |                           |
| IM25.6  | Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes   | K                 | SH                     | Y            | Bedside clinic, DOAP session     | Written/ Viva voce              |                                       |                            |                           |
| IM25.7  | Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC | K                 | SH                     | Y            | Bedside clinic, Skill assessment | Skill assessment                |                                       | Pathology, Microbiology    |                           |
| IM25.8  | Enumerate the indications for use of newer techniques in the diagnosis of these infections  | K                 | KH                     | N            | Lecture, Small group discussion  | Written/ Viva voce              |                                       |                            |                           |
| IM25.9  | Assist in the collection of blood and other specimen cultures   | S                 | SH                     | Y            | DOAP session                     | Log book documentation          |                                       | Microbiology               |                           |
| IM25.10 | Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner   | K                 | KH                     | Y            | Bedside clinic, Skill assessment | Skill assessment                |                                       |                            |                           |
| IM25.11 | Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis  | C                 | SH                     | Y            | DOAP session                     | Skill assessment                |                                       | Microbiology, Pharmacology |                           |
| IM25.12 | Communicate to the patient and family the diagnosis and treatment of identified infection   | C                 | SH                     | Y            | DOAP session                     | Skill assessment                |                                       | AETCOM                     |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                    | Horizontal<br>Integration |
|---|--|-------------------|------------------------|--------------|-------------------------------|---------------------------------|---------------------------------------|---|---------------------------|
| IM25.13   | Counsel the patient and family on prevention of various infections due to environmental issues   | C                 | SH                     | Y            | DOAP session                  | Skill assessment                |                                       | Community Medicine,<br>General Medicine |                           |
| <b>Topic: The role of the physician in the community</b> <span style="margin-left: 150px;"><b>Number of competencies: (49)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification : (NIL)</b></span> |  |                   |                        |              |                               |                                 |                                       |   |                           |
| IM26.1  | Enumerate and describe professional qualities and roles of a physician   | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.2  | Describe and discuss the commitment to lifelong learning as an important part of physician growth  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.3  | Describe and discuss the role of non maleficence as a guiding principle in patient care  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.4  | Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care   | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.5  | Describe and discuss the role of beneficence of a guiding principle in patient care  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.6  | Describe and discuss the role of a physician in health care system   | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.7  | Describe and discuss the role of justice as a guiding principle in patient care  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.8  | Identify discuss medicolegal, socioeconomic and ethical issues as it pertains to organ donation  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.9  | Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |
| IM26.10   | Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care                              | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |   |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|-------------------------------|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM26.11 | Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to patient autonomy, patient rights and shared responsibility in health care  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.12 | Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in health care including advanced directives and surrogate decision making                                   | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.13 | Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in emergency care including situations where patients do not have the capability or capacity to give consent | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.14 | Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects   | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.15 | Identify, discuss and defend, medicolegal, socio-cultural and ethical issues as they pertain to consent for surgical procedures  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.16 | Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)  | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.17 | Identify, discuss physician's role and responsibility to society and the community that she/ he serves   | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.18 | Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues in physician- industry relationships   | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.19 | Demonstrate ability to work in a team of peers and superiors   | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment                |                                       |                      |                           |
| IM26.20 | Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgemental and empathetic manner  | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment                |                                       |                      |                           |
| IM26.21 | Demonstrate respect to patient privacy   | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment                |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|-------------------------------|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM26.22 | Demonstrate ability to maintain confidentiality in patient care  | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment                |                                       |                      |                           |
| IM26.23 | Demonstrate a commitment to continued learning   | S                 | SH                     | Y            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.24 | Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers                            | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.25 | Demonstrate responsibility and work ethics while working in the health care team   | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.26 | Demonstrate ability to maintain required documentation in health care (including correct use of medical records)                           | S                 | SH                     | Y            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.27 | Demonstrate personal grooming that is adequate and appropriate for health care responsibilities  | S                 | SH                     | Y            | Small group discussion        | Skill assessment                |                                       |                      |                           |
| IM26.28 | Demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning              | S                 | SH                     | Y            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.29 | Communicate diagnostic and therapeutic options to patient and family in a simulated environment  | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.30 | Communicate care options to patient and family with a terminal illness in a simulated environment  | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.31 | Demonstrate awareness of limitations and seeks help and consultations appropriately  | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.32 | Demonstrate appropriate respect to colleagues in the profession  | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.33 | Demonstrate an understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                      |                           |
| IM26.34 | Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts         | S                 | SH                     | Y            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|--------------|-------------------------------|---------------------------------|---------------------------------------|--------------------------|---------------------------|
| IM26.35 | Demonstrate empathy in patient encounters  | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.36 | Demonstrate ability to balance personal and professional priorities  | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.37 | Demonstrate ability to manage time appropriately   | S                 | SH                     | Y            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.38 | Demonstrate ability to form and function in appropriate professional networks  | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.39 | Demonstrate ability to pursue and seek career advancement  | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.40 | Demonstrate ability to follow risk management and medical error reduction practices where appropriate  | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.41 | Demonstrate ability to work in a mentoring relationship with junior colleagues   | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.42 | Demonstrate commitment to learning and scholarship   | S                 | SH                     | N            | Small group discussion        | Skill assessment/ Viva voce     |                                       |                          |                           |
| IM26.43 | Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as they pertain to in vitro fertilisation donor insemination and surrogate motherhood | K                 | KH                     | N            | Small group discussion        | Written/ Viva voce              |                                       | Obstetrics & Gynaecology |                           |
| IM26.44 | Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to medical negligence  | K                 | KH                     | N            | Small group discussion        | Written/ Viva voce              |                                       |                          |                           |
| IM26.45 | Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to malpractice   | K                 | KH                     | N            | Small group discussion        | Written/ Viva voce              |                                       |                          |                           |
| IM26.46 | Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues in dealing with impaired physicians   | K                 | KH                     | N            | Small group discussion        | Written/ Viva voce              |                                       |                          |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|--------------|-------------------------------|---------------------------------|---------------------------------------|----------------------|---------------------------|
| IM26.47  | Identify, discuss and defend medicolegal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support | K                 | KH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.48  | Demonstrate altruism   | S                 | SH                     | Y            | Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| IM26.49  | Administer informed consent and appropriately address patient queries to a patient being enrolled in a research protocol in a simulated environment                        | S                 | SH                     | Y            | Bedside clinic, DOAP session  | Written/ Viva voce              |                                       |                      |                           |
| <b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br><b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br><b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br><b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b> |  |                   |                        |              |                               |                                 |                                       |                      |                           |

## Integration

### Human Anatomy

|        |   |     |    |   |  |                             |  |                                   |            |
|--------|---|-----|----|---|--|-----------------------------|--|-----------------------------------|------------|
| AN5.6  | Describe the concept of anastomoses and collateral circulation with significance of end-arteries  | K   | KH | Y | Lecture  | Written/ Viva voce          |  | General Medicine                  | Physiology |
| AN7.5  | Describe principles of sensory and motor innervation of muscles   | K   | KH | N | Lecture  | Written                     |  | General Medicine                  | Physiology |
| AN7.6  | Describe concept of loss of innervation of a muscle with its applied anatomy  | K   | KH | Y | Lecture  | Written/ Viva voce          |  | General Medicine                  |            |
| AN20.8 | Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment  | K/S | SH | Y | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ Skill assessment |  | General Medicine                  |            |
| AN20.9 | Identify & demonstrate Palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, great and small saphenous veins | K/S | SH | Y | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ Skill assessment |  | General Medicine, General Surgery |            |
| AN22.4 | Describe anatomical basis of ischaemic heart disease  | K   | KH | Y | Lecture  | Written/ Viva voce          |  | General Medicine                  | Physiology |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                            | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|--------------|--|--------------------------------------|---------------------------------------|----------------------------------|---------------------------|
| AN22.7 | Mention the parts, position and arterial supply of the conducting system of heart  | K                 | KH                     | Y            | Lecture  | Written                              |                                       | General Medicine                 | Physiology                |
| AN24.1 | Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy            | K                 | KH                     | Y            | Practical, Lecture                                       | Written/ Viva voce                   |                                       | General Medicine                 | Physiology                |
| AN24.2 | Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate                               | K/S               | SH                     | Y            | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Medicine                 | Physiology                |
| AN24.3 | Describe a bronchopulmonary segment  | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine                 | Physiology                |
| AN25.3 | Describe fetal circulation and changes occurring at birth  | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine                 | Physiology                |
| AN25.4 | Describe embryological basis of:<br>1) atrial septal defect, 2)ventricular septal defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula                 | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine, Pediatrics     | Physiology                |
| AN25.5 | Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta            | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine, Pediatrics     | Physiology                |
| AN25.7 | Identify structures seen on a plain x-ray chest (PA view)  | K/S               | SH                     | Y            | Practical, DOAP session                                  | Written/ Viva voce                   |                                       | Radiodiagnosis, General Medicine |                           |
| AN25.8 | Identify and describe in brief a barium swallow  | K/S               | SH                     | N            | Practical, DOAP session                                  | Written/ Viva voce                   |                                       | Radiodiagnosis, General Medicine |                           |
| AN25.9 | Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart | K/S               | SH                     | Y            | Practical  | Viva voce/ Skill assessment          |                                       | General Medicine, Pediatrics     | Physiology                |
| AN28.7 | Explain the anatomical basis of facial nerve palsy   | K                 | KH                     | Y            | Lecture  | Written                              |                                       | General Medicine                 |                           |
| AN50.3 | Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)  | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine                 |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                            | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|--|--------------------------------------|---------------------------------------|------------------------------|---------------------------|
| AN56.1 | Describe & identify various layers of meninges with its extent & modifications  | K/S               | SH                     | Y            | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Medicine             |                           |
| AN56.2 | Describe circulation of CSF with its applied anatomy  | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine             | Physiology                |
| AN57.4 | Enumerate ascending & descending tracts at mid thoracic level of spinal cord  | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine             | Physiology                |
| AN57.5 | Describe anatomical basis of syringomyelia  | K                 | KH                     | N            | Lecture  | Written                              |                                       | General Medicine             | Physiology                |
| AN58.4 | Describe anatomical basis & effects of medial & lateral medullary syndrome  | K                 | KH                     | N            | Lecture  | Written                              |                                       | General Medicine             | Physiology                |
| AN60.3 | Describe anatomical basis of cerebellar dysfunction   | K                 | KH                     | N            | Lecture  | Written                              |                                       | General Medicine             | Physiology                |
| AN61.3 | Describe anatomical basis & effects of Benedict's and Weber's syndrome  | K                 | KH                     | N            | Lecture  | Written                              |                                       | General Medicine             | Physiology                |
| AN62.2 | Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere  | K/S               | SH                     | Y            | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Medicine             | Physiology                |
| AN62.3 | Describe the white matter of cerebrum   | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine             | Physiology                |
| AN62.5 | Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus | K                 | KH                     | Y            | Lecture  | Written/ Viva voce                   |                                       | General Medicine             | Physiology                |
| AN62.6 | Describe & identify formation, branches & major areas of distribution of circle of Willis   | K/S               | SH                     | Y            | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Medicine             | Physiology                |
| AN74.1 | Describe the various modes of inheritance with examples   | K                 | KH                     | Y            | Lecture  | Written                              |                                       | General Medicine, Pediatrics |                           |

| Number            | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|-------------------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|---------------------------------|---------------------------|
| AN74.2            | Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance  | K                 | KH                     | Y            | Lecture                         | Written                         |                                       | General Medicine,<br>Pediatrics |                           |
| AN74.3            | Describe multifactorial inheritance with examples  | K                 | KH                     | Y            | Lecture                         | Written                         |                                       | General Medicine                |                           |
| AN74.4            | Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Hemophilia, Duchene's muscular dystrophy & Sickle cell anaemia | K                 | KH                     | N            | Lecture                         | Written                         |                                       | General Medicine,<br>Pediatrics |                           |
| <b>Physiology</b> |  |                   |                        |              |                                 |                                 |                                       |                                 |                           |
| PY3.12            | Explain the gradation of muscular activity   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                |                           |
| PY3.13            | Describe muscular dystrophy: myopathies  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                | Human Anatomy             |
| PY4.9             | Discuss the physiology aspects of: peptic ulcer, gastro-oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease                  | S                 | SH                     | Y            | Lecture, Small group discussion | Practical/ Viva voce            |                                       | General Medicine                | Biochemistry              |
| PY5.5             | Describe the physiology of electrocardiogram (E.C.G), its applications and the cardiac axis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                |                           |
| PY5.6             | Describe abnormal ECG, arrhythmias, heart block and myocardial Infarction  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                | Human Anatomy             |
| PY5.10            | Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                |                           |
| PY5.13            | Record and interpret normal ECG in a volunteer or simulated environment  | S                 | SH                     | Y            | DOAP sessions                   | Practical/OSPE/Viva voce        |                                       | General Medicine                |                           |



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|---------------------|--|-------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| PY5.16              | Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment   | S                 | SH                     | N            | DOAP sessions,<br>Computer assisted<br>learning methods | Practical/OSPE/Viva<br>voce     |                                       | General Medicine                    |                           |
| PY7.7               | Describe artificial kidney, dialysis and renal transplantation   | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/Viva voce               |                                       | General Medicine                    |                           |
| PY11.14             | Demonstrate Basic Life Support in a simulated environment  | S                 | SH                     | Y            | DOAP sessions   | OSCE                            |                                       | General Medicine<br>Anaesthesiology |                           |
| <b>Biochemistry</b> |  |                   |                        |              |   |                                 |                                       |                                     |                           |
| BI2.4               | Describe and discuss enzyme inhibitors as poisons and drugs, therapeutic enzymes and the clinical utility of various serum enzymes as markers of pathological conditions | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/ Viva voce              |                                       | Pathology, General<br>Medicine      |                           |
| BI2.5               | Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions   | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/ Viva voce              |                                       | Pathology, General<br>Medicine      |                           |
| BI2.6               | Discuss use of enzymes in laboratory investigations (Enzyme-based assays)  | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/ Viva voce              |                                       | Pathology, General<br>Medicine      |                           |
| BI2.7               | Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions                               | K                 | KH                     | Y            | Lecture, Small group<br>discussion, DOAP<br>sessions    | Written/ Viva voce              |                                       | Pathology, General<br>Medicine      |                           |
| BI3.4               | Define and differentiate the pathways of carbohydrate metabolism (glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt)   | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/ Viva voce              |                                       | General Medicine                    |                           |
| BI3.5               | Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders  | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/ Viva voce              |                                       | General Medicine                    |                           |
| BI3.8               | Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates   | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/ Viva voce              |                                       | Pathology, General<br>Medicine      |                           |
| BI3.9               | Discuss the mechanism and significance of blood glucose regulation in health and disease   | K                 | KH                     | Y            | Lecture, Small group<br>discussion                      | Written/ Viva voce              |                                       | General Medicine                    |                           |

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|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|-----------------------------|---------------------------|
| BI3.10 | Interpret the results of blood glucose levels and other laboratory investigations related to disorders of carbohydrate metabolism   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI4.1  | Describe and discuss main classes of lipids (Essential/non-essential fatty acids, cholesterol and hormonal steroids, triglycerides, major phospholipids and sphingolipids) relevant to human system and their major functions | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI4.2  | Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI4.3  | Explain the regulation of lipoprotein metabolism & associated disorders   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI4.4  | Describe the structure and functions of lipoproteins, their functions, interrelations & relations with atherosclerosis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI4.5  | Interpret laboratory results of analytes associated with metabolism of lipids   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI4.6  | Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI4.7  | Interpret laboratory results of analytes associated with metabolism of lipids   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI5.2  | Describe and discuss functions of proteins and structure-function relationships in relevant areas e.g., hemoglobin and selected hemoglobinopathies  | K                 | KH                     | Y            | Lecture, Small group discussion | Viva voce/ Skill assessment     |                                       | Pathology, General Medicine | Physiology                |
| BI5.5  | Interpret laboratory results of analytes associated with metabolism of proteins   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI6.1  | Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |
| BI6.4  | Discuss the laboratory results of analytes associated with gout & Lesch Nyhan syndrome  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine            |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|------------------------------|---------------------------|
| BI6.5  | Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| BI6.7  | Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             | Physiology                |
| BI6.8  | Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| BI6.9  | Describe the functions of various minerals in the body, their metabolism and homeostasis   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             | Physiology                |
| BI6.10 | Enumerate and describe the disorders associated with mineral metabolism  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| BI6.11 | Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism                 | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pathology, General Medicine  | Physiology                |
| BI6.12 | Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance                      | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pathology, General Medicine  | Physiology                |
| BI6.13 | Describe the functions of the kidney, liver, thyroid and adrenal glands  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pathology, General Medicine  | Physiology, Human Anatomy |
| BI6.14 | Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands) | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pathology, General Medicine  | Physiology, Human Anatomy |
| BI6.15 | Describe the abnormalities of kidney, liver, thyroid and adrenal glands.   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pathology, General Medicine  | Physiology, Human Anatomy |
| BI7.4  | Describe applications of recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis                             | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pediatrics, General Medicine |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                             | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|--|---------------------------|
| BI7.7  | Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis            | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Pathology                      |                           |
| BI8.1  | Discuss the importance of various dietary components and explain importance of dietary fibre  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Pediatrics, Pathology          |                           |
| BI8.2  | Describe the types and causes of protein energy malnutrition and its effects  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Pediatrics, Pathology          |                           |
| BI8.3  | Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy. | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                                 |                           |
| BI8.4  | Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Pathology                      |                           |
| BI8.5  | Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance)                    | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Community Medicine, General Medicine, Pediatrics |                           |
| BI9.2  | Discuss the involvement of ECM components in health and disease   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                                 |                           |
| BI10.4 | Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses             | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Pathology                      | Physiology                |
| BI11.4 | Perform urine analysis to estimate and determine normal and abnormal constituents   | S                 | P                      | Y            | Lecture, Small group discussion | Skill assessment                | 1                                     | General Medicine                                 | Physiology                |
| BI11.5 | Describe screening of urine for inborn errors & describe the use of paper chromatography  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                                 |                           |

| Number           | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|------------------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|-------------------------------|---------------------------|
| BI11.17          | Explain the basis and rationale of biochemical tests done in the following conditions:<br>- diabetes mellitus,<br>- dyslipidemia,<br>- myocardial infarction,<br>- renal failure, gout,<br>- proteinuria,<br>- nephrotic syndrome,<br>- edema,<br>- jaundice,<br>- liver diseases, pancreatitis, disorders of acid- base balance, thyroid disorders. | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine<br>Pathology |                           |
| BI11.22          | Calculate albumin: globulin (AG) ratio and creatinine clearance  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine              |                           |
| BI11.23          | Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet   | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine              |                           |
| BI11.24          | Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food.   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine              |                           |
| BI1.26           | Calculate albumin: globulin (AG) ratio and creatinine clearance  | S                 | SH                     | Y            | Lecture, Small group discussion | Skill assessment                |                                       | General Medicine              |                           |
| BI1.27           | Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet   | S                 | SH                     | N            | Lecture, Small group discussion | Skill assessment                |                                       | General Medicine              |                           |
| BI1.28           | Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine              |                           |
| <b>Pathology</b> |  |                   |                        |              |                                 |                                 |                                       |                               |                           |
| PA6.1            | Define and describe edema its types pathogenesis and clinical correlations   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine              |                           |
| PA9.4            | Define autoimmunity. Enumerate autoimmune disorders  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine              |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PA9.5  | Define and describe the pathogenesis of systemic lupus erythematosus   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |
| PA9.6  | Define and describe the pathogenesis and pathology of HIV and AIDS   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     | Microbiology              |
| PA9.7  | Define and describe the pathogenesis of other common autoimmune diseases   | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |
| PA10.1 | Define and describe the pathogenesis and pathology of malaria  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     | Microbiology              |
| PA10.2 | Define and describe the pathogenesis and pathology of cysticercosis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     | Microbiology              |
| PA10.3 | Define and describe the pathogenesis and pathology of leprosy  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     | Microbiology              |
| PA10.4 | Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     | Microbiology              |
| PA12.3 | Describe the pathogenesis of obesity and its consequences  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |
| PA13.1 | Describe hematopoiesis and extramedullary hematopoiesis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |
| PA13.2 | Describe the role of anticoagulants in hematology  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |
| PA13.3 | Define and classify anemia   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |
| PA13.4 | Enumerate and describe the investigation of anemia   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |
| PA13.5 | Perform, Identify and describe the peripheral blood picture in anemia  | S                 | SH                     | Y            | DOAP session                    | Skill assessment                |                                       | General Medicine     |                           |
| PA14.2 | Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia                | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine     |                           |

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|---------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| PA14.3  | Identify and describe the peripheral smear in microcytic anemia  | S                 | SH                     | Y            | DOAP session                    | Skill assessment                |                                       | General Medicine                     |                           |
| PA15.1  | Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Biochemistry,<br>General Medicine    |                           |
| PA15.2  | Describe the laboratory investigations of macrocytic anemia  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA15.4  | Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA16.1  | Define and classify hemolytic anemia   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Biochemistry,<br>General Medicine    |                           |
| PA16.2  | Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Biochemistry,<br>General Medicine    |                           |
| PA16.3  | Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia              | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Biochemistry, General<br>Medicine    |                           |
| PA16.4  | Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia                        | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Biochemistry,<br>General Medicine    |                           |
| PA16.5  | Describe indices and peripheral blood smear  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA 17.1 | Enumerate the etiology, pathogenesis and findings in aplastic anemia   | K                 | K                      | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA17.2  | Enumerate the indications and describe the findings in bone marrow aspiration and biopsy   | K                 | K                      | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA19.6  | Enumerate and differentiate the causes of splenomegaly   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Surgery,<br>General Medicine |                           |
| PA21.3  | Differentiate platelet from clotting disorders based on the clinical and hematologic features  | S                 | SH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |

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|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| PA21.4 | Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA21.5 | Define and describe disseminated intravascular coagulation its laboratory findings and diagnosis of Vitamin K deficiency  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA22.4 | Enumerate blood components and describe their clinical uses   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Surgery,<br>General Medicine |                           |
| PA22.6 | Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA24.2 | Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA24.3 | Describe and identify the microscopic features of peptic ulcer  | S                 | SH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA25.1 | Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Biochemistry,<br>General Medicine    |                           |
| PA25.2 | Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine,<br>General Surgery |                           |
| PA25.3 | Describe the etiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA25.4 | Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine,<br>General Surgery |                           |
| PA25.5 | Describe the etiology, pathogenesis and complications of portal hypertension  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine,<br>General Surgery |                           |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                 | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| PA25.6 | Interpret a liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver function tests                                    | S                 | P                      | Y            | DOAP session                    | Skill assessment                | 1                                     | General Medicine                     |                           |
| PA26.1 | Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     | Microbiology              |
| PA26.2 | Describe the etiology, gross and microscopic appearance and complications of lung abscess   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     | Microbiology              |
| PA26.3 | Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine         | Microbiology              |
| PA26.4 | Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     | Microbiology              |
| PA26.5 | Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease                         | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Community Medicine |                           |
| PA26.6 | Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance,metastases and complications of tumors of the lung and pleura | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA26.7 | Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma                                     | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Community Medicine |                           |
| PA27.1 | Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |
| PA27.2 | Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                     |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|------------------------------|---------------------------|
| PA27.3  | Describe the etiology, types, stages pathophysiology pathology and complications of heart failure   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Physiology |                           |
| PA27.4  | Describe the etiology, pathophysiology, pathology, gross and microscopic, features, criteria and complications of rheumatic fever   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             | Microbiology              |
| PA27.5  | Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic, features, diagnostic tests and complications of ischemic heart disease | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA27.6  | Describe the etiology, pathophysiology, pathology, gross and microscopic, features diagnosis and complications of infective endocarditis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             | Microbiology              |
| PA27.7  | Describe the etiology, pathophysiology, pathology, gross and microscopic, features diagnosis and complications of pericarditis and pericardial effusion                                     | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA27.8  | Interpret abnormalities in cardiac function testing in acute coronary syndromes   | S                 | SH                     | Y            | DOAP session                    | Skill Assessment                |                                       | Physiology, General Medicine |                           |
| PA27.9  | Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies                                      | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Physiology |                           |
| PA27.10 | Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system   | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             | Microbiology              |
| PA28.3  | Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure                         | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA28.4  | Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure                        | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |

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|---------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|------------------------------|---------------------------|
| PA28.5  | Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine |                           |
| PA28.6  | Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA28.7  | Enumerate and describe the findings in glomerular manifestations of systemic disease  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA28.8  | Enumerate and classify diseases affecting the tubular interstitium  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA28.9  | Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA28.11 | Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features, progression and complications of vascular disease of the kidney                         | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA28.12 | Define classify and describe the genetics, inheritance etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney    | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine, Pediatrics |                           |
| PA28.15 | Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies  | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PA31.4  | Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia   | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pediatrics, General Medicine |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration   | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|--|---------------------------|
| PA32.1 | Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Human Anatomy, Physiology, General Medicine, General Surgery |                           |
| PA32.2 | Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis                                     | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine                                 |                           |
| PA32.3 | Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism   | K                 | KH                     | Y            | Lecture, Small group            | Written/ Viva voce              |                                       | Physiology, General Medicine                                 |                           |
| PA32.4 | Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus                     | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine                                 |                           |
| PA32.5 | Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism   | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine                                 |                           |
| PA32.7 | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency   | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine                                 |                           |
| PA32.8 | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome  | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine                                 |                           |
| PA32.9 | Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms   | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Human Anatomy, Physiology, General Medicine, General Surgery |                           |
| PA33.5 | Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine   |                           |
| PA35.1 | Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine   | Microbiology              |

| Number              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|----------------------------------|---------------------------|
| PA35.3              | Identify the etiology of meningitis based on given CSF parameters   | S                 | P                      | Y            | DOAP session                    | Skill Assessment                | 1                                     | General Medicine                 | Microbiology              |
| <b>Microbiology</b> |   |                   |                        |              |                                 |                                 |                                       |                                  |                           |
| MI2.1               | Describe the etiologic agents in rheumatic fever and their diagnosis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                 | Pathology                 |
| MI2.2               | Describe the classification, etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                 | Pathology                 |
| MI2.3               | Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis  | S                 | SH                     | Y            | DOAP session                    | Skill assessment                |                                       | General Medicine                 | Pathology                 |
| MI2.4               | List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                 | Pathology                 |
| MI2.5               | Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kala-azar, malaria, filariasis and other common parasites prevalent in India  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                 | Pathology                 |
| MI2.6               | Identify the causative agent of malaria and filariasis  | K/S               | SH                     | Y            | DOAP session                    | Skill assessment                |                                       | General Medicine                 |                           |
| MI2.7               | Describe the epidemiology, the etio- pathogenesis evolution complications, opportunistic infections, diagnosis prevention and the principles of management of HIV   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                 | Pathology                 |
| MI3.1               | Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features, and diagnostic modalities of these agents  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine,<br>Paediatrics | Pathology                 |
| MI3.2               | Identify the common etiologic agents of diarrhea and dysentery  | S                 | SH                     | Y            | DOAP session                    | Skill assessment                |                                       | General Medicine,<br>Paediatrics |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods           | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|-------------------------------|---------------------------|
| MI3.3  | Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them  | K                 | KH                     | Y            | Lecture, Small group discussion         | Written/ Viva voce              |                                       | General Medicine              | Pharmacology, Pathology   |
| MI3.4  | Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness  | S                 | KH                     | Y            | DOAP session                            | Skill assessment                |                                       | General Medicine              | Pathology                 |
| MI3.5  | Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis   | K                 | KH                     | Y            | Lecture, Small group discussion         | Written/ Viva voce              |                                       | General Medicine              | Pharmacology              |
| MI3.6  | Describe the etio-pathogenesis of Acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD   | K                 | KH                     | Y            | Lecture, Small group discussion         | Written/ Viva voce              |                                       | General Medicine              | Pharmacology, Pathology   |
| MI3.7  | Describe the epidemiology, the etio- pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis, and prevention of viral hepatitis | K                 | KH                     | Y            | Lecture, Small group discussion         | Written/ Viva voce              |                                       | General Medicine              | Pathology                 |
| MI3.8  | Choose the appropriate laboratory test in the diagnosis of viral hepatitis  | K                 | KH                     | Y            | Small group discussion, Case discussion | Written/ Viva voce/ OSPE        |                                       | General Medicine              | Pathology                 |
| MI4.1  | Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections                        | K                 | KH                     | Y            | Lecture                                 | Written/ Viva voce              |                                       | General Medicine              |                           |
| MI5.1  | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis   | K                 | KH                     | Y            | Lecture                                 | Written/ Viva voce              |                                       | General Medicine, Paediatrics | Pathology                 |
| MI5.2  | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis   | K                 | KH                     | Y            | Lecture                                 | Written/ Viva voce              |                                       | General Medicine, Paediatrics | Pathology                 |
| MI5.3  | Identify the microbial agents causing meningitis  | S                 | SH                     | Y            | DOAP session                            | Skill assessment                |                                       | General Medicine, Paediatrics |                           |
| MI6.1  | Describe the etio-pathogenesis, laboratory diagnosis and prevention of Infections of upper and lower respiratory tract  | K                 | KH                     | Y            | Lecture, Small group discussion         | Written/ Viva voce              |                                       | General Medicine              |                           |

| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                    | Horizontal<br>Integration |
|---------------------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|---|---------------------------|
| MI6.2               | Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)  | S                 | P                      | Y            | DOAP session                    | Skill assessment                | 3                                     | General Medicine                        |                           |
| MI6.3               | Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain).   | S                 | P                      | Y            | DOAP session                    | Skill assessment                | 3                                     | General Medicine                        |                           |
| MI7.3               | Describe the etio-pathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of Urinary tract infections  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                        |                           |
| MI8.1               | Enumerate the microbial agents and their vectors causing Zoonotic diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course, laboratory diagnosis and prevention | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                        |                           |
| MI8.2               | Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis   | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce              |                                       | General Medicine                        | Pathology                 |
| MI8.3               | Describe the role of oncogenic viruses in the evolution of virus associated malignancy   | K                 | KH                     | Y            | Lecture                         | Written                         |                                       | General Medicine                        | Pathology                 |
| MI8.4               | Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine,<br>Community Medicine |                           |
| MI8.5               | Define Healthcare Associated Infections (HAI) and enumerate it types. Discuss the factors that contribute to the development of HAI and the methods for prevention   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine,<br>Community Medicine |                           |
| <b>Pharmacology</b> |  |                   |                        |              |                                 |                                 |                                       |   |                           |
| PH1.12              | Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction   | K/S               | SH                     | Y            | Lecture, practical              | Written/ Viva voce              |                                       | Pediatrics, General<br>Medicine         |                           |

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|--------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|------------------------------|---------------------------|
| PH1.16 | Describe mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: Anti-histaminics, 5-HT modulating drugs, NSAIDs, Drugs for gout, Anti-rheumatic drugs, drugs for migraine | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce              |                                       | General Medicine             |                           |
| PH1.21 | Describe the symptoms and management of methanol and ethanol poisonings  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine             |                           |
| PH1.25 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine |                           |
| PH1.26 | Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin angiotensin and aldosterone system  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Physiology, General Medicine |                           |
| PH1.27 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of Antihypertensive drugs and drugs used in shock   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PH1.28 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease                                      | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             | Pathology                 |
| PH1.29 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             | Pathology                 |
| PH1.30 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used as Antiarrhythmics  | K                 | KH                     | N            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |
| PH1.31 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemia   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine             |                           |



| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods           | Number<br>required to<br>certify<br>P | Vertical Integration            | Horizontal<br>Integration     |
|--------|--|-------------------|------------------------|--------------|---------------------------------|---|---------------------------------------|---------------------------------|-------------------------------|
| PH1.34 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below:<br>1. Acid-peptic disease and GERD<br>2. Antiemetics and prokinetics<br>3. Antidiarrhoeals<br>4. Laxatives<br>5. Inflammatory Bowel Disease<br>6. Irritable Bowel Disorders, biliary and pancreatic diseases | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce                        |                                       | General Medicine                |                               |
| PH1.35 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like:<br>1. Drugs used in anemias<br>2. Colony Stimulating factors  | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce                        |                                       | General Medicine,<br>Physiology | Pharmacology                  |
| PH1.36 | Describe the mechanism of action, types, doses, side effects, indications and contraindications of drugs used in endocrine disorders (diabetes mellitus, thyroid disorders and osteoporosis)   | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce                        |                                       | General Medicine                | Pathology,<br>Pharmacology    |
| PH1.43 | Describe and discuss the rational use of antimicrobials including antibiotic stewardship program   | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce                        |                                       | General Medicine<br>Pediatrics  | Microbiology,<br>Pharmacology |
| PH1.47 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis   | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce                        |                                       | General Medicine                | Microbiology                  |
| PH1.52 | Describe management of common poisoning, insecticides, common sting and bites  | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce                        |                                       | General Medicine                |                               |
| PH2.4  | Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations  | S                 | SH                     | Y            | DOAP sessions                   | Skills assessment                         |                                       | Pediatrics,<br>Pharmacology     |                               |
| PH3.1  | Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient   | S/C               | P                      | Y            | Skill station                   | Skill station                             | 5                                     | General Medicine                |                               |
| PH3.3  | Perform a critical evaluation of the drug promotional literature   | S                 | P                      | Y            | Skill Lab                       | Maintenance of log book/<br>Skill station | 3                                     | General Medicine                |                               |

| Number                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                 | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                       | Horizontal<br>Integration |
|---------------------------|---|-------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|--|---------------------------|
| PH3.5                     | To prepare and explain a list of P-drugs for a given case/condition   | S                 | P                      | Y            | Skill station                                 | Maintenance of log book         | 3                                     | General Medicine                           |                           |
| PH5.1                     | Communicate with the patient with empathy and ethics on all aspects of drug use   | A/C               | SH                     | Y            | Small group discussion                        | Skill station                   |                                       | General Medicine                           |                           |
| PH5.4                     | Explain to the patient the relationship between cost of treatment and patient compliance  | A/C               | SH                     | Y            | Small group discussion                        | Short note/ Viva voce           |                                       | General Medicine                           |                           |
| <b>Community Medicine</b> |   |                   |                        |              |   |                                 |                                       |  |                           |
| CM3.1                     | Describe the health hazards of air, water, noise, radiation and pollution   | K                 | KH                     | Y            | Lecture, Small group discussion               | Written/ Viva voce              |                                       | General Medicine, ENT                      |                           |
| CM3.3                     | Describe the aetiology and basis of water borne diseases/jaundice/hepatitis/ diarrheal diseases   | K                 | KH                     | Y            | Lecture, Small group discussion, DOAP session | Written/ Viva voce              |                                       | Microbiology, General Medicine, Pediatrics |                           |
| CM5.1                     | Describe the common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions               | K                 | KH                     | Y            | Lecture, Small group discussion               | Written/ Viva voce              |                                       | General Medicine, Pediatrics               |                           |
| CM5.2                     | Describe and demonstrate the correct method of performing a nutritional assessment of individuals, families and the community by using the appropriate method | S                 | SH                     | Y            | DOAP sessions                                 | Skill Assessment                |                                       | General Medicine, Pediatrics               |                           |
| CM5.3                     | Define and describe common nutrition related health disorders (including macro-PEM, Micro-iron, Zn, iodine, Vit. A), their control and management             | K                 | KH                     | Y            | Lecture, Small group discussion               | Written/ Viva voce              |                                       | General Medicine, Pediatrics               |                           |
| CM5.4                     | Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment  | S                 | SH                     | Y            | DOAP sessions                                 | Skill Assessment                |                                       | General Medicine, Pediatrics               |                           |
| CM5.5                     | Describe the methods of nutritional surveillance, principles of nutritional education and rehabilitation in the context of socio-cultural factors             | K                 | KH                     | Y            | Lecture, Small group discussion               | Written / Viva voce             |                                       | General Medicine, Pediatrics               |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                  | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|--------------|--|--------------------------------------|---------------------------------------|------------------------------|---------------------------|
| CM6.1  | Formulate a research question for a study  | K                 | KH                     | Y            | Small group discussion, Lecture, DOAP sessions | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.2  | Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data   | S                 | SH                     | Y            | Small group discussion, Lecture, DOAP sessions | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.3  | Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs                    | S                 | SH                     | Y            | Small group discussion, Lecture, DOAP sessions | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.4  | Enumerate, discuss and demonstrate common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion | S                 | SH                     | Y            | Small group discussion, Lecture, DOAP sessions | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM7.1  | Define Epidemiology and describe and enumerate the principles, concepts and uses   | K                 | KH                     | Y            | Small group discussion, Lecture                | Written/ Viva voce                   |                                       | General Medicine             |                           |
| CM7.2  | Enumerate, describe and discuss the modes of transmission and measures for prevention and control of communicable and non-communicable diseases                | K                 | KH                     | Y            | Small group discussion, Lecture                | Written/ Viva voce                   |                                       | General Medicine             |                           |
| CM7.3  | Enumerate, describe and discuss the sources of epidemiological data  | K                 | KH                     | Y            | Small group discussion, Lecture                | Written/ Viva voce                   |                                       | General Medicine             |                           |
| CM7.4  | Define, calculate and interpret morbidity and mortality indicators based on given set of data  | S                 | SH                     | Y            | Small group discussion, DOAP sessions          | Written/ Skill assessment            |                                       | General Medicine             |                           |
| CM7.5  | Enumerate, define, describe and discuss epidemiological study designs.   | K                 | KH                     | Y            | Small group discussion, Lecture                | Written / Viva voce                  |                                       | General Medicine             |                           |
| CM7.6  | Enumerate and evaluate the need of screening tests   | S                 | SH                     | Y            | Small group discussion, DOAP sessions          | Written/ Skill assessment            |                                       | General Medicine             |                           |
| CM7.7  | Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures.                | S                 | SH                     | Y            | Small group discussion, DOAP sessions          | Written/ Skill assessment            |                                       | General Medicine             | Microbiology              |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration              | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|-----------------------------------|---------------------------|
| CM7.8  | Describe the principles of association, causation and biases in epidemiological studies   | K                 | KH                     | Y            | Small group discussion, Lecture | Written/ Viva voce              |                                       | General Medicine                  |                           |
| CM8.1  | Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases   | K                 | KH                     | Y            | Small group discussion, Lecture | Written/ Viva voce              |                                       | General Medicine, Pediatrics      | Microbiology Pathology    |
| CM8.2  | Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for Non Communicable diseases (diabetes, Hypertension, Stroke, obesity and cancer etc.) | K                 | KH                     | Y            | Small group discussion, Lecture | Written/ Viva voce              |                                       | General Medicine                  |                           |
| CM8.3  | Enumerate and describe disease-specific National Health Programs including their prevention and treatment of a case   | K                 | KH                     | Y            | Small group discussion, Lecture | Written/ Viva voce              |                                       | General Medicine, Pediatrics      |                           |
| CM8.4  | Describe the principles and enumerate the measures to control a disease epidemic  | K                 | KH                     | Y            | Small group discussion, Lecture | Written/ Viva voce              |                                       | General Medicine, Pediatrics      |                           |
| CM8.5  | Describe and discuss the principles of planning, implementing and evaluating control measures for disease at community level bearing in mind the public health importance of the disease  | K                 | KH                     | Y            | Small group discussion, Lecture | Written / Viva voce             |                                       | General Medicine, Pediatrics      |                           |
| CM12.1 | Define and describe the concept of Geriatric services   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                  |                           |
| CM12.2 | Describe health problems of aged population   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                  |                           |
| CM12.3 | Describe the prevention of health problems of aged population   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                  |                           |
| CM12.4 | Describe National program for elderly   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                  |                           |
| CM13.1 | Define and describe the concept of Disaster management  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Surgery, General Medicine |                           |

| Number                                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                                  | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration   | Horizontal<br>Integration |
|---|---|-------------------|------------------------|--------------|--|---------------------------------|---------------------------------------|--|---------------------------|
| CM13.2                                    | Describe disaster management cycle  | K                 | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | General Surgery,<br>General Medicine                                   |                           |
| CM13.3                                    | Describe man made disasters in the world and in India   | K                 | KH                     | Y            | Lecture, Small group discussion                                | Written / Viva voce             |                                       | General Surgery,<br>General Medicine                                   |                           |
| CM13.4                                    | Describe the details of the National Disaster management Authority  | K                 | KH                     | Y            | Lecture, Small group discussion                                | Written / Viva voce             |                                       | General Surgery,<br>General Medicine                                   |                           |
| <b>Forensic Medicine &amp; Toxicology</b> |   |                   |                        |              |  |                                 |                                       |  |                           |
| FM1.9                                     | Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports especially<br>– maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres.<br>-- maintenance of medico-legal register like accident register.<br>- documents of issuance of wound certificate<br>- documents of issuance of drunkenness certificate.<br>- documents of issuance of sickness and fitness certificate.<br>- documents for issuance of death certificate.<br>- documents of Medical Certification of Cause of Death - Form Number4 and 4A<br>- documents for estimation of age by physical, dental and radiological examination and issuance of certificate | K                 | KH                     | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Radiodiagnosis,<br>General Surgery,<br>General Medicine,<br>Pediatrics |                           |
| FM2.34                                    | Demonstrate ability to use local resources whenever required like in mass disaster situations   | A & C             | KH                     | Y            | Lecture, Small group discussion                                | Written/Viva voce               |                                       | General Medicine,<br>AETCOM  |                           |
| FM3.22                                    | Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female   | K                 | K/KH                   | Y            | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Obstetrics &<br>Gynaecology,<br>General Medicine                       |                           |
| FM5.5                                     | Describe & discuss Delirium tremens   | K                 | K/KH                   | Y            | Lecture, Small group discussion                                | Written/Viva voce               |                                       | Psychiatry, General<br>Medicine  |                           |
| FM8.6                                     | Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India.   | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, DOAP session | Written/Viva voce/OSCE          |                                       | Pharmacology   |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration              | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|-----------------------------------|---------------------------|
| FM8.7  | Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids   | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, DOAP session          | Written/Viva voce/OSCE          |                                       | Pharmacology,<br>General Medicine |                           |
| FM8.8  | Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination   | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, DOAP session          | Written/ Viva voce/<br>OSCE     |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.1  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids . | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE     |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.2  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium  | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE     |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.3  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium  | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE     |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.4  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol  | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE     |                                       | Pharmacology,<br>General Medicine |                           |
| FM9.5  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide                                  | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/<br>OSCE     |                                       | Pharmacology,<br>General Medicine |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods       | Number<br>required to<br>certify<br>P | Vertical Integration           | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---|---------------------------------------|---------------------------------------|--------------------------------|---------------------------|
| FM9.6  | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases  | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE              |                                       | Pharmacology, General Medicine |                           |
| FM10.1 | Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to:<br>i. Antipyretics – Paracetamol, Salicylates<br>ii. Anti-Infectives (Common antibiotics – an overview)<br>iii. Neuropsychotoxicology Barbiturates, benzodiazepines, phenytoin, lithium, haloperidol, neuroleptics, tricyclics<br>iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants<br>v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis<br>vi. Gastro-Intestinal and Endocrinal Drugs – Insulin | K                 | K/KH                   | Y            | Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session | Written/ Viva voce/ OSCE              |                                       | Pharmacology, General Medicine |                           |
| FM11.1 | Describe features and management of Snake bite, scorpion sting, bee and wasp sting and spider bite  | K                 | K/KH                   | Y            | Lecture, Small group discussion, Autopsy                                | Written/Viva voce                     |                                       | General Medicine               |                           |
| FM12.1 | Describe features and management of abuse/poisoning with following camicals: Tobacco, cannabis, amphetamines, cocaine, hallucinogens, designer drugs& solvent   | K                 | K/KH                   | Y            | Lecture, Small group discussion, Autopsy                                | Written/Viva voce                     |                                       | General Medicine               |                           |
| FM13.1 | Describe toxic pollution of environment, its medico-legal aspects & toxic hazards of occupation and industry  | K                 | K/KH                   | Y            | Lecture, Small group discussion   | Written/Viva voce                     |                                       | General Medicine               |                           |
| FM14.2 | Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment   | S                 | SH                     | Y            | Bedside clinic (ward/casualty), Small group discussion                  | Logbook Skill station/Viva voce/ OSCE |                                       | General Medicine               |                           |
| FM14.3 | Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination .  | S                 | SH                     | Y            | Bedside clinic, Small group discussion/DOAP session                     | Skill lab/Viva voce                   |                                       | General Medicine               |                           |

**Dermatology, Venereology & Leprosy**

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods             | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration        |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---|---------------------------------------|----------------------|----------------------------------|
| DR9.1  | Classify, describe the epidemiology, etiology, microbiology pathogenesis and clinical presentations and diagnostic features of Leprosy  | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce                          |                                       | General Medicine     | Microbiology, Community Medicine |
| DR9.2  | Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination  | S                 | SH                     | Y            | Lecture, Small group discussion | Bedside clinic session/<br>Skill assessment |                                       | General Medicine     |                                  |
| DR9.4  | Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions   | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce                          |                                       | General Medicine     | Pharmacology                     |
| DR9.5  | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce                          |                                       | General Medicine     | Pharmacology, Community Medicine |
| DR9.6  | Describe the treatment of Leprosy based on the WHO guidelines   | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce                          |                                       | General Medicine     | Pharmacology, Community Medicine |
| DR9.7  | Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma.  | K                 | KH                     | Y            | Lecture, Small group discussion | Written / Viva voce                         |                                       | General Medicine     | Pharmacology, Psychiatry         |
| DR10.1 | Identify and classify syphilis based on the presentation and clinical manifestations  | S                 | SH                     | Y            | Bedside clinic                  | Skill assessment                            |                                       | General Medicine     | Microbiology                     |
| DR10.3 | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce                          |                                       | General Medicine     | Pharmacology, Microbiology       |
| DR10.4 | Describe the prevention of congenital syphilis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce                          |                                       | General Medicine     |                                  |
| DR10.5 | Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted diseases  | C                 | SH                     | Y            | Lecture, Small group discussion | Skill assessment                            |                                       | General Medicine     |                                  |
| DR10.6 | Describe the etiology, diagnostic and clinical features of non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)                                      | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce                          |                                       | General Medicine     | Microbiology                     |



| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                       | Horizontal<br>Integration  |
|---------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|--|----------------------------|
| DR10.7  | Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)   | S                 | SH                     | Y            | Lecture, Small group discussion | Skill assessment                |                                       | General Medicine                           | Microbiology               |
| DR10.8  | Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV) | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce              |                                       | General Medicine                           | Pharmacology, Microbiology |
| DR10.9  | Describe the syndromic approach to ulcerative sexually transmitted disease  | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce              |                                       | General Medicine                           |                            |
| DR10.10 | Describe the etiology, diagnostic and clinical features and management of gonococcal and non gonococcal urethritis  | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce              |                                       | General Medicine                           |                            |
| DR11.1  | Describe the etiology, pathogenesis and clinical features of the dermatologic manifestations of HIV and its complications including opportunistic infections                                  | K                 | KH                     | Y            | Lecture, Small group discussion | Written /Viva voce              |                                       | General Medicine                           | Microbiology               |
| DR11.2  | Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions   | S                 | SH                     | Y            | Lecture, Small group discussion | Skill assessment                |                                       | General Medicine                           | Microbiology               |
| DR11.3  | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV   | K                 | KH                     | Y            | Lecture, Small group discussion | Written / Viva voce             |                                       | General Medicine                           | Pharmacology, Microbiology |
| DR12.7  | Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions   | S                 | SH                     | Y            | Lecture, Small group discussion | Skill assessment                |                                       | General Medicine                           | Pathology, Microbiology    |
| DR16.1  | Identify and distinguish skin lesions of SLE  | S                 | SH                     | Y            | Lecture, Small group discussion | Skill assessment                |                                       | General Medicine                           | Pathology                  |
| DR16.2  | Identify and distinguish Raynaud's phenomenon   | S                 | SH                     | Y            | Lecture, Small group discussion | Skill assessment                |                                       | General Medicine                           | Pathology                  |
| DR17.1  | Enumerate and identify the cutaneous findings in vitamin A deficiency   | K/S               | SH                     | Y            | Lecture, Small group discussion | Skill assessment/ Viva voce     |                                       | General Medicine, Pediatrics, Biochemistry |                            |

| Number                | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration                       | Horizontal<br>Integration         |
|-----------------------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|--|-----------------------------------|
| DR17.2                | Enumerate and describe the various skin changes in Vitamin B complex deficiency  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine, Pediatrics, Biochemistry |                                   |
| DR17.3                | Enumerate and describe the various changes in Vitamin C deficiency   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine, Pediatrics, Biochemistry |                                   |
| DR17.4                | Enumerate and describe the various changes in Zinc deficiency  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine, Pediatrics, Biochemistry |                                   |
| DR18.1                | Enumerate the cutaneous features of Type 2 diabetes  | K                 | K                      | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine                           |                                   |
| DR18.2                | Enumerate the cutaneous features of hypo- & hyperthyroidism  | K                 | K                      | Y            | Lecture, Small group discussion | Written/Viva voce               |                                       | General Medicine                           |                                   |
| <b>Anesthesiology</b> |  |                   |                        |              |                                 |                                 |                                       |  |                                   |
| AS2.1                 | Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates                              | S                 | SH                     | N            | DOAP session                    | Skill assessment                |                                       | General Medicine, Pediatrics               |                                   |
| AS2.2                 | Enumerate the indications, describe the steps and demonstrate in a simulated environment advanced life support in adults and children                                    | S                 | SH                     | N            | DOAP session                    | Skill assessment                |                                       | General Medicine                           |                                   |
| AS3.1                 | Describe the principles of preoperative evaluation   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |  | General Surgery, General Medicine |
| AS3.2                 | Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation | S                 | SH                     | Y            | DOAP session, Bedside clinic    | Skill station                   |                                       |  | General Surgery, General Medicine |
| AS3.3                 | Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery   | S                 | SH                     | Y            | DOAP session, Bedside clinic    | Skill station                   |                                       |  | General Surgery, General Medicine |

| Number                           | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                        | Suggested Assessment<br>methods            | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration            |
|----------------------------------|--|-------------------|------------------------|--------------|--|--|---------------------------------------|----------------------|--------------------------------------|
| AS3.4                            | Choose and interpret appropriate testing for patients undergoing Surgery                                     | S                 | SH                     | Y            | DOAP session,<br>Bedside clinic                      | Skill station                              |                                       |                      | General Surgery,<br>General Medicine |
| AS3.5                            | Determine the readiness for General Surgery in a patient based on the preoperative evaluation                | S                 | SH                     | Y            | DOAP session,<br>Bedside clinic                      | Skill station                              |                                       |                      | General Surgery,<br>General Medicine |
| AS7.2                            | Enumerate and describe the criteria for admission and discharge of a patient to an ICU                       | S                 | KH                     | Y            | Lecture, Small group<br>discussion, DOAP<br>session  | Written/ Viva voce                         |                                       |                      | General Medicine                     |
| AS7.3                            | Observe and describe the management of an unconscious patient  | S                 | KH                     | Y            | Lecture, Small group<br>discussion DOAP<br>session   | Written/ Viva voce                         |                                       | Physiology           | General Medicine                     |
| AS7.4                            | Observe and describe the basic setup process of a ventilator   | S                 | KH                     | Y            | Lecture, Small group<br>discussion DOAP<br>session   | Written/ Viva voce                         |                                       | Physiology           | General Medicine                     |
| AS7.5                            | Observe and describe the principles of monitoring in an ICU  | S                 | KH                     | Y            | Lecture, Small group<br>discussion DOAP<br>session   | Written/ Viva voce                         |                                       |                      | General Medicine                     |
| AS8.4                            | Describe the principles of pain management in palliative care  | K                 | KH                     | Y            | Lecture, Small group<br>discussion, DOAP<br>session  | Written/ Viva voce                         |                                       | Pharmacology         | General Medicine                     |
| AS8.5                            | Describe the principles of pain management in the terminally ill   | K                 | KH                     | Y            | Lecture, Small group<br>discussion, DOAP<br>session  | Written/ Viva voce                         |                                       | Pharmacology         | General Medicine                     |
| AS10.4                           | Define and describe common medical and medication errors in anaesthesia                                      | K                 | KH                     | Y            | Lecture, Small group<br>discussion, DOAP<br>session  | Written/ Viva voce                         |                                       | Pharmacology         | General Medicine                     |
| <b>Otorhinolaryngology (ENT)</b> |  |                   |                        |              |  |  |                                       |                      |                                      |
| EN4.53                           | Describe the Clinical features, Investigations and principles of management of HIV manifestations of the ENT | K                 | KH                     | N            | Lecture, Small group<br>discussion,<br>Demonstration | Written/ Viva voce/<br>Skill<br>assessment |                                       | General Medicine     |                                      |

| Number               | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration              | Horizontal<br>Integration |
|----------------------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|-----------------------------------|---------------------------|
| <b>Ophthalmology</b> |  |                   |                        |              |                                 |                                 |                                       |                                   |                           |
| OP5.2                | Define, enumerate and describe the aetiology, associated systemic conditions, clinical features, complications, indications for referral and management of scleritis | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                  |                           |
| OP6.3                | Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                  |                           |
| OP9.3                | Describe the role of refractive error correction in a patient with headache and enumerate the indications for referral   | K                 | K                      | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | General Medicine                  |                           |
| <b>Dentistry</b>     |  |                   |                        |              |                                 |                                 |                                       |                                   |                           |
| DE1.4                | Discuss the role of dental caries as a focus of sepsis   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Microbiology,<br>General Medicine |                           |
| <b>Psychiatry</b>    |  |                   |                        |              |                                 |                                 |                                       |                                   |                           |
| PS3.7                | Enumerate and describe common organic psychiatric disorders, magnitude, etiology and clinical features   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                                   | General Medicine          |
| PS3.8                | Enumerate and describe the essential investigations in patients with organic psychiatric disorders   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                                   | General Medicine          |
| PS4.1                | Describe the magnitude and etiology of alcohol and substance use disorders   | K                 | KH                     | Y            | Lecture, Small group discussion | Lecture/ Small group discussion |                                       |                                   | General Medicine          |
| PS4.2                | Elicit, describe and document clinical features of alcohol and substance use disorders   | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                                   | General Medicine          |
| PS4.3                | Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders  | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                                   | General Medicine          |
| PS4.4                | Describe the treatment of alcohol and substance abuse disorders including behavioural and pharmacologic therapy  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology                      | General Medicine          |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PS4.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse                              | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology         | General Medicine          |
| PS10.1 | Enumerate and describe the magnitude and etiology of somatoform, dissociative and conversion disorders                                    | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine          |
| PS10.2 | Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders             | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                      | General Medicine          |
| PS10.3 | Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                      | General Medicine          |
| PS10.4 | Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy                              | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology         | General Medicine          |
| PS10.6 | Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders        | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology         | General Medicine          |
| PS12.1 | Enumerate and describe the magnitude and etiology of psychosomatic disorders  | K                 | KH                     | Y            | Lecture Small group discussion  | Written/ Viva voce              |                                       |                      | General Medicine          |
| PS12.2 | Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders             | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                      | General Medicine          |
| PS12.3 | Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders                                | S                 | SH                     | Y            | Bedside clinic, DOAP session    | Skill assessment                |                                       |                      | General Medicine          |
| PS12.4 | Describe the treatment of psychosomatic disorders including behavioural, psychosocial and pharmacologic therapy                           | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology         | General Medicine          |
| PS16.1 | Enumerate and describe common psychiatric disorders in the elderly including dementia, depression and psychosis                           | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine          |
| PS16.2 | Describe the aetiology and magnitude of psychiatric illness in the elderly  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine          |
| PS16.3 | Describe the therapy of psychiatric illness in elderly including psychosocial and behavioural therapy                                     | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine          |

| Number                              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                    | Suggested Assessment<br>methods      | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-------------------------------------|--|-------------------|------------------------|--------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| PS16.4                              | Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment   | S                 | SH                     | Y            | Bedside clinic, DOAP session                     | Skill assessment                     |                                       |                      | General Medicine          |
| <b>Obstetrics &amp; Gynaecology</b> |  |                   |                        |              |  |                                      |                                       |                      |                           |
| OG12.1                              | Define, classify and describe the etiology and pathophysiology, early detection, investigations; principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia                                 | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/ Skill assessment |                                       |                      | General Medicine          |
| OG12.2                              | Define, Classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of anemia in pregnancy                   | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/ Skill assessment |                                       |                      | General Medicine          |
| OG12.3                              | Define, Classify and describe the etiology, pathophysiology, diagnosis, investigations, criteria, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of diabetes in pregnancy       | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/ Skill assessment |                                       |                      | General Medicine          |
| OG12.4                              | Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, criteria, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/ Skill assessment |                                       |                      | General Medicine          |
| OG12.5                              | Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management in pregnancy of urinary tract infections   | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/ Skill assessment |                                       |                      | General Medicine          |
| OG12.6                              | Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management in pregnancy of liver disease  | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/ Skill assessment |                                       |                      | General Medicine          |
| OG12.7                              | Describe and discuss Screening, risk factors, management of mother and newborn with HIV  | K                 | KH                     | Y            | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/ Skill assessment |                                       |                      | General Medicine          |
| <b>Pediatrics</b>                   |  |                   |                        |              |  |                                      |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods                   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration                 |
|---|---|-------------------|------------------------|--------------|---|---------------------------------|---------------------------------------|----------------------|---|
| PE14.3  | Discuss the risk factors, clinical features, diagnosis and management of Organophosphorous poisoning  | K                 | KH                     | N            | Lecture, Small group discussion                 | Written/ Viva voce              |                                       | Pharmacology         | General Medicine                          |
| PE32.3  | Interpret normal Karyotype and recognize Trisomy 21   | S                 | SH                     | Y            | Bedside clinics, Skills lab                     | Log book                        |                                       |                      | General Medicine                          |
| PE32.9  | Discuss the referral criteria and multidisciplinary approach to management of Turner Syndrome   | K                 | KH                     | N            | Lecture, Small group discussion                 | Written/ Viva voce              |                                       |                      | General Medicine, Obstetrics & Gynecology |
| <b>General Surgery</b>                        |   |                   |                        |              |   |                                 |                                       |                      |   |
| SU22.6  | Describe and discuss the clinical features of hypo- & hyperparathyroidism and the principles of their management  | K                 | KH                     | Y            | Lecture, Small group discussion                 | Written/ Viva voce              |                                       |                      | General Medicine                          |
| SU23.2  | Describe the etiology, clinical features and principles of management of disorders of adrenal gland   | K                 | KH                     | Y            | Lecture, Small group discussion                 | Written/ Viva voce              |                                       |                      | General Medicine                          |
| <b>Orthopaedics</b>                           |   |                   |                        |              |   |                                 |                                       |                      |   |
| OR5.1   | Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of various inflammatory disorder of joints   | K                 | K/KH                   | Y            | Lecture, Small group Discussion, Bedside clinic | Written/ Viva voce OSCE         |                                       |                      | General Medicine                          |
| OR11.1  | Describe and discuss the aetiopathogenesis, Clinical features, Investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves | K                 | K/H                    | Y            | Lecture Small Group discussion, case discussion | Written/ Viva voce OSCE         |                                       | Human Anatomy        | General Medicine, General surgery         |
| <b>Physical Medicine &amp; Rehabilitation</b> |   |                   |                        |              |   |                                 |                                       |                      |   |
| PM1.2   | Define and describe disability, its cause, and magnitude, identification and prevention of disability   | K                 | KH                     | Y            | Lecture, Small group discussion                 | Written/ Viva voce              |                                       |                      | General Medicine Orthopedics              |
| PM1.3   | Define and describe the methods to identify and prevent disability  | K                 | KH                     | Y            | Lecture, Small group discussion                 | Written/ Viva voce              |                                       |                      | General Medicine Orthopedics              |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration       |
|--------|---|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|----------------------|---------------------------------|
| PM1.4  | Enumerate the rights and entitlements of differently abled persons  | K                 | K                      | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine<br>Orthopedics |
| PM2.1  | Describe the causes of disability in the patient with a cerebrovascular accident  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Human Anatomy        | General Medicine                |
| PM2.2  | Describe and discuss the treatment of rigidity and spasticity   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                |
| PM2.3  | Describe and discuss the principles of early mobilizations, mobility aids and splints   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                |
| PM2.4  | Describe and discuss the impact of comorbidities on the rehabilitation of the patient with cerebrovascular accident                               | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                |
| PM4.1  | Describe the common patterns, clinical features, investigations, diagnosis and treatment of common causes of arthritis                            | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine<br>Orthopedics |
| PM4.5  | Demonstrate correct assessment of muscle strength and range of movements  | S                 | SH                     | Y            | DOAP session,<br>Bedside clinic | Skill assessment                |                                       |                      | General Medicine<br>Orthopedics |
| PM6.1  | Perform and demonstrate a clinical examination of sensory and motor deficits of peripheral nerve  | S                 | SH                     | Y            | Bedside clinic                  | Skill assessment                |                                       |                      | General Medicine                |
| PM6.2  | Enumerate the indications and describe the principles of nerve conduction velocity and EMG  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                |
| PM7.4  | Assess bowel and bladder function and identify common patterns of bladder dysfunction   | S                 | KH                     | Y            | Small group discussion          | Written/ Viva voce              |                                       |                      | General Medicine<br>Orthopedics |
| PM7.6  | Enumerate the indications and describe the pharmacology and side effects of commonly used drugs in neuropathic bladder                            | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       | Pharmacology         | General Medicine                |
| PM7.7  | Enumerate and describe common life threatening complications following SCI like Deep vein Thrombosis, Aspiration Pneumonia, Autonomic dysreflexia | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine<br>Orthopedics |



| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core Y/<br>N | Suggested Learning<br>methods   | Suggested Assessment<br>methods | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration                          |
|---------------------|--|-------------------|------------------------|--------------|---------------------------------|---------------------------------|---------------------------------------|----------------------|--|
| PM8.1               | Describe the clinical features, evaluation, diagnosis and management of disability following traumatic brain injury  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine<br>Orthopedics<br>General Surgery |
| PM8.2               | Describe and discuss cognitive dysfunction like deficits in attention, memory and communication  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                                   |
| PM8.3               | Describe and discuss common behavior and mood changes following TBI  | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                                   |
| PM8.4               | Describe metabolic co-morbidities like SIADH, diabetes mellitus, insipidus and endocrine dysfunction following TBI   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                                   |
| PM8.5               | Describe the Vocational opportunities and community based rehabilitation following TBI   | K                 | KH                     | Y            | Lecture, Small group discussion | Written/ Viva voce              |                                       |                      | General Medicine                                   |
| PM 9.1              | Describe rehabilitative aspects as they pertain to the elderly including patients with dementia, depression, incontinence immobility and nutritional needs | K                 | KH                     | Y            | Lecture, Small group            | Written Viva voce               |                                       |                      | General Medicine<br>Psychiatry                     |
| <b>Radiotherapy</b> |  |                   |                        |              |                                 |                                 |                                       |                      |  |
| RT1.3               | Enumerate, describe and discuss classification and staging of cancer (AJCC, FIGO etc.)   | K                 | KH                     | Y            | Lecture                         | Written/ Viva voce              |                                       | Pathology            | General Surgery<br>General Medicine                |

**RESPIRATORY MEDICINE (CODE: CT)**

| Number                      | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                           | Horizontal Integration |
|-----------------------------|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--|------------------------|
| <b>RESPIRATORY MEDICINE</b> |  |                                     |                        |               |   |                                |                                       |  |                        |
| <b>Topic: Tuberculosis</b>  |  | <b>Number of competencies: (19)</b> |                        |               | <b>Number of procedures that require certification : (01)</b> |                                |                                       |  |                        |
| CT1.1                       | Describe and discuss the epidemiology of tuberculosis and its impact on the work, life and economy of India  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Community Medicine                             |                        |
| CT1.2                       | Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS)   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | written                        |                                       | Microbiology                                   |                        |
| CT1.3                       | Discuss and describe the impact of co-infection with HIV and other co-morbid conditions. Like diabetes on the natural history of tuberculosis  | K                                   | K                      | Y             | Lecture, Small group discussion                               | written                        |                                       | Microbiology                                   |                        |
| CT1.4                       | Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Community Medicine, Microbiology, Pharmacology |                        |
| CT1.5                       | Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations   | S                                   | SH                     | Y             | Bed side clinic, DOAP session                                 | Skill assessment               |                                       |  |                        |
| CT1.6                       | Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes a) general examination, b) examination of the chest and lung including loss of volume, mediastinal shift, percussion and auscultation (including DOAP session of lung sounds and added sounds) c) examination of the lymphatic system and d) relevant CNS examination | S                                   | SH                     | Y             | Bed side clinic, DOAP session                                 | Skill assessment               |                                       |  |                        |
| CT1.7                       | Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test  | S                                   | P                      | Y             | DOAP session  | Maintenance of log book        |                                       | Microbiology                                   |                        |
| CT1.8                       | Generate a differential diagnosis based on the clinical history and evolution of the disease that prioritises the most likely diagnosis  | K                                   | K                      | Y             | Bedside clinic, Small group discussion                        | Bedside clinic/ Viva voce      |                                       |  |                        |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method           | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration             | Horizontal Integration |
|--------|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------------------|------------------------|
| CT1.9  | Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing                            | K                 | K                      | Y             | Bedside clinic, DOAP session                    | Skill assessment               |                                       |                                  |                        |
| CT1.10 | Perform and interpret an AFB stain  | S                 | P                      | Y             | DOAP session                                    | Skill assessment               | 1                                     | Microbiology                     |                        |
| CT1.11 | Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration   | S                 | SH                     | Y             | Skill assessment                                | Skill assessment               |                                       |                                  |                        |
| CT1.12 | Enumerate the indications for tests including: serology, special cultures and polymerase chain reaction and sensitivity testing   | K                 | KH                     | Y             | Small group discussion, Lecture                 | Short note/ Viva voce          |                                       | Microbiology                     |                        |
| CT1.13 | Describe and discuss the origin, indications, technique of administration, efficacy and complications of the BCG vaccine  | K                 | KH                     | Y             | Lecture, Small group discussion                 | Short note/ Viva voce          |                                       | Microbiology                     |                        |
| CT1.14 | Describe and discuss the pharmacology of various anti-tuberculous agents, their indications, contraindications, interactions and adverse reactions  | K                 | KH                     | Y             | Lecture, Small group discussion                 | Short note/ Viva voce          |                                       | Pharmacology, Microbiology       |                        |
| CT1.15 | Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and co-morbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS) | K                 | SH                     | Y             | Bedside clinic, Small group discussion, Lecture | Skill assessment               |                                       | Pharmacology, Community Medicine |                        |
| CT1.16 | Describe the appropriate precautions, screening, testing and indications for chemoprophylaxis for contacts and exposed health care workers  | K                 | KH                     | Y             | Bedside clinic, Small group discussion          | Written                        |                                       | Community Medicine               |                        |
| CT1.17 | Define criteria for the cure of Tuberculosis; describe and recognise the features of drug resistant tuberculosis, prevention and therapeutic regimens   | S                 | P                      | Y             | Lecture, Small group discussion                 | Written                        |                                       |                                  |                        |
| CT1.18 | Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program   | C                 | SH                     | Y             | DOAP session                                    | Skill assessment               |                                       | Community Medicine               |                        |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration   | Horizontal Integration |
|--|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|------------------------|------------------------|
| CT1.19   | Communicate with patients and family in an empathetic manner about the diagnosis, therapy  | S                 | P                      | Y             | DOAP session                          | Skill assessment               |                                       | AETCOM                 |                        |
| <b>Topic: Obstructive airway disease</b> <span style="margin-left: 200px;"><b>Number of competencies: (28)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (01)</b></span> |  |                   |                        |               |                                       |                                |                                       |                        |                        |
| CT2.1  | Define and classify obstructive airway disease   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology  |                        |
| CT2.2  | Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology , Pathology |                        |
| CT2.3  | Enumerate and describe the causes of acute episodes in patients with obstructive airway disease  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                        |                        |
| CT2.4  | Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnea   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology  |                        |
| CT2.5  | Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Physiology, Pathology  |                        |
| CT2.6  | Describe the role of the environment in the cause and exacerbation of obstructive airway disease   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology              |                        |
| CT2.7  | Describe and discuss allergic and non-allergic precipitants of obstructive airway disease  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology              |                        |
| CT2.8  | Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants   | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill assessment               |                                       |                        |                        |
| CT2.9  | Perform a systematic examination that establishes the diagnosis and severity that includes measurement of respiratory rate, level of respiratory distress, effort tolerance, breath sounds, added sounds, identification of signs of consolidation pleural effusion and pneumothorax | S                 | SH                     | Y             | Bed side clinic, DOAP session         | Skill assessment               |                                       |                        |                        |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                 | Suggested<br>Assessment method                 | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal Integration |
|--------|--|-------------------|------------------------|---------------|---|--|---------------------------------------|-----------------------|------------------------|
| CT2.10 | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology  | S                 | SH                     | Y             | Bed side clinic, DOAP session                         | Skill assessment/<br>Written                   |                                       |                       |                        |
| CT2.11 | Describe, discuss and interpret pulmonary function tests   | S                 | SH                     | Y             | Bed side clinic, DOAP session                         | Skill assessment                               |                                       | Physiology, Pathology |                        |
| CT2.12 | Perform and interpret peak expiratory flow rate  | S                 | P                      | Y             | Bedside clinic, DOAP session                          | documentation in log book/<br>Skill assessment | 3                                     |                       |                        |
| CT2.13 | Describe the appropriate diagnostic work up based on the presumed aetiology  | S                 | SH                     | Y             | Bedside clinic, Small group discussion                | Written/<br>Skill assessment                   |                                       |                       |                        |
| CT2.14 | Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph   | K                 | SH                     | Y             | Bedside clinics, Small group discussion, DOAP session | Written/<br>Skill assessment                   |                                       |                       |                        |
| CT2.15 | Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology  | K                 | SH                     | Y             | Bedside clinics, Small group discussion, DOAP session | Written/<br>Skill assessment                   |                                       |                       |                        |
| CT2.16 | Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilisers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy | K                 | KH                     | Y             | Lecture, Small group discussion                       | Written/<br>Viva voce                          |                                       | Pharmacology          |                        |
| CT2.17 | Describe and discuss the indications for vaccinations in OAD   | K                 | KH                     | Y             | Lecture, Small group discussion                       | Written/<br>Viva voce                          |                                       |                       |                        |
| CT2.18 | Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids  | K                 | SH                     | Y             | Bedside clinics, Small group discussion, DOAP session | Written/<br>Skill assessment                   |                                       |                       |                        |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                 | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal Integration |
|---|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|------------------------|
| CT2.19  | Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy                                | K                 | SH                     | Y             | Bedside clinics, Small group discussion, DOAP session | Written/ Skill assessment      |                                       |                      |                        |
| CT2.20  | Describe and discuss the principles and use of oxygen therapy in the hospital and at home  | K                 | KH                     | Y             | Lecture, Small group discussion                       | Written/ Viva voce             |                                       |                      |                        |
| CT2.21  | Describe discuss and counsel patients appropriately on smoking cessation   | K/C               | SH                     | Y             | DOAP session  | Skill assessment               |                                       | AETCOM               |                        |
| CT2.22  | Demonstrate and counsel patient on the correct use of inhalers   | S/C               | SH                     | Y             | DOAP session  | Skill assessment               |                                       |                      |                        |
| CT2.23  | Communicate diagnosis treatment plan and subsequent follow up plan to patients   | K/C               | SH                     | Y             | DOAP session  | Skill assessment               |                                       |                      |                        |
| CT2.24  | Recognise the impact of OAD on patient's quality of life, well being, work and family  | A                 | KH                     | Y             | Small group discussion, Bedside clinics               | Observation by faculty         |                                       | Community Medicine   |                        |
| CT2.25  | Discuss and describe the impact of OAD on the society and workplace  | K                 | KH                     | Y             | Lecture, Small group discussion                       | Written/ Viva voce             |                                       | Community Medicine   |                        |
| CT2.26  | Discuss and describe preventive measures to reduce OAD in workplaces   | K                 | KH                     | Y             | Lecture, Small group discussion                       | Written/ Viva voce             |                                       | Community Medicine   |                        |
| CT2.27  | Demonstrate an understanding of patient's inability to change working, living and environmental factors that influence progression of airway disease | A                 | KH                     | Y             | Small group discussion, Bedside clinics               | Observation by faculty         |                                       | Community Medicine   |                        |
| CT2.28  | Demonstrate an understanding for the difficulties faced by patients during smoking cessation   | A                 | KH                     | Y             | Small group discussion, Bedside clinics               | Observation by faculty         |                                       |                      |                        |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |  |                   |                        |               |   |                                |                                       |                      |                        |

| Number                  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal Integration |
|-------------------------|--|-------------------|------------------------|---------------|--|---|---------------------------------------|----------------------|------------------------|
| <b>Integration</b>      |  |                   |                        |               |  |   |                                       |                      |                        |
| <b>Physiology</b>       |  |                   |                        |               |  |   |                                       |                      |                        |
| PY6.8                   | Demonstrate the correct technique to perform & interpret Spirometry  | S                 | SH                     | Y             | DOAP sessions                                    | Skill assessment/<br>Viva voce          |                                       | Respiratory Medicine |                        |
| <b>Pharmacology</b>     |  |                   |                        |               |  |   |                                       |                      |                        |
| PH1.32                  | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD   | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                      |                                       | Respiratory Medicine |                        |
| PH1.33                  | Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussives, expectorants/ mucolytics)                    | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                      |                                       | Respiratory Medicine |                        |
| PH1.44                  | Describe the first line antitubercular drugs, their mechanisms of action, side effects and doses.  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       | Respiratory Medicine |                        |
| PH1.45                  | Describe the drugs used in MDR and XDR Tuberculosis  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       | Respiratory Medicine | Microbiology           |
| <b>General Medicine</b> |  |                   |                        |               |  |   |                                       |                      |                        |
| IM24.10                 | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                      |                                       |                      | Respiratory Medicine   |
| <b>Pediatrics</b>       |  |                   |                        |               |  |   |                                       |                      |                        |
| PE28.19                 | Describe the etio-pathogenesis, clinical features, diagnosis, management and prevention of asthma in children  | S                 | SH                     | Y             | Bedside clinics, Small group discussion, Lecture | Skill Assessment/<br>Written/ Viva voce |                                       | Respiratory Medicine |                        |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method        | Number<br>required<br>to certify<br>P | Vertical Integration                           | Horizontal Integration |
|---------|--|-------------------|------------------------|---------------|--|---------------------------------------|---------------------------------------|--|------------------------|
| PE28.20 | Counsel the child with asthma on the correct use of inhalers in a simulated environment                                | S                 | P                      | Y             | Bedside clinics, Small group discussion, Lecture | Skills Assessment/ Written/ Viva voce | 3                                     | Respiratory Medicine                           |                        |
| PE34.1  | Discuss the epidemiology, clinical features, clinical types, complications of Tuberculosis in Children and Adolescents | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                    |                                       | Microbiology                                   | Respiratory Medicine   |
| PE34.2  | Discuss the various diagnostic tools for childhood tuberculosis  | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                    |                                       | Microbiology                                   | Respiratory Medicine   |
| PE34.3  | Discuss the various regimens for management of Tuberculosis as per National Guidelines                                 | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                    |                                       | Microbiology, Community Medicine, Pharmacology | Respiratory Medicine   |
| PE34.4  | Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program  | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                    |                                       | Microbiology, Community Medicine, Pharmacology | Respiratory Medicine   |
| PE34.5  | Able to elicit, document and present history of contact with tuberculosis in every patient encounter                   | S                 | SH                     | Y             | Bedside clinics, Skill lab                       | Skill Assessment                      |                                       |  | Respiratory Medicine   |
| PE34.6  | Identify a BCG scar  | S                 | P                      | Y             | Bed side clinics, Skills lab                     | Skill Assessment                      | 3                                     | Microbiology                                   | Respiratory Medicine   |
| PE34.7  | Interpret a Mantoux test   | S                 | P                      | Y             | Bed side clinics Skills lab                      | Skill assessment                      | 3                                     | Microbiology                                   | Respiratory Medicine   |
| PE34.8  | Interpret a Chest Radiograph   | S                 | SH                     | Y             | Bedside clinics Skills lab                       | Skill assessment                      |                                       | Radiodiagnosis                                 | Respiratory Medicine   |
| PE34.9  | Interpret blood tests in the context of laboratory evidence for tuberculosis   | S                 | SH                     | N             | Bed side clinics, Small group discussion         | Log book                              |                                       | Microbiolgy                                    | Respiratory Medicine   |
| PE34.10 | Discuss the various samples for demonstraing the organism eg Gastric Aspirate, Sputum , CSF, FNAC                      | K                 | KH                     | Y             | Bed side clinics, Small group discussion         | Written/ Viva voce                    |                                       | Microbiolgy                                    | Respiratory Medicine   |
| PE34.11 | Perform AFB staining   | S                 | P                      | Y             | DOAP session                                     | Log book/Journal                      | 3                                     | Microbiology                                   | Respiratory Medicine   |
| PE34.12 | Enumerate the indications and discuss the limitations of methods of culturing M.Tuberculi                              | K                 | KH                     | Y             | Small group discussion                           | Written/ Viva voce                    |                                       | Microbiology                                   | Respiratory Medicine   |

**PEDIATRICS (CODE: PE)**

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|--------------------------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>PEDIATRICS</b>                               |   |                                      |                        |             |   |                                 |                                       |                      |                           |
| <b>Topic: Normal Growth and Development</b>     |   | <b>Number of competencies : (07)</b> |                        |             | <b>Number of procedures that require certification: (02)</b>  |                                 |                                       |                      |                           |
| PE1.1   | Define the terminologies Growth and development and discuss the factors affecting normal growth and development   | K                                    | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| PE1.2   | Discuss and describe the patterns of growth in infants, children and adolescents  | K                                    | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      | Psychiatry                |
| PE1.3   | Discuss and describe the methods of assessment of growth including use of WHO and Indian national standards. Enumerate the parameters used for assessment of physical growth in infants, children and adolescents | K                                    | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      | Psychiatry                |
| PE1.4   | Perform Anthropometric measurements, document in growth charts and interpret  | S                                    | P                      | Y           | Small group discussion  | Document in Log book            | 3                                     |                      |                           |
| PE1.5   | Define development and discuss the normal developmental mile stones with respect to motor, behaviour, social, adaptive and language   | K                                    | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      | Psychiatry                |
| PE1.6   | Discuss the methods of assessment of development  | K                                    | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| PE1.7   | Perform Developmental assessment and interpret  | S                                    | P                      | N           | Bedside clinics, Skills Lab                                   | Document in Log book            | 3                                     |                      |                           |
| <b>Topic: Common problems related to Growth</b> |   | <b>Number of competencies:(06)</b>   |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                       |                      |                           |
| PE2.1   | Discuss the etio-pathogenesis, clinical features and management of a child who fails to thrive  | K                                    | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| PE2.2   | Assessment of a child with failing to thrive including eliciting an appropriate history and examination   | S                                    | SH                     | Y           | Bedside clinics   | Skills Station                  |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods   | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration          |
|--|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|------------------------------------|
| PE2.3  | Counselling a parent with failing to thrive child  | A/C               | SH                     | Y           | OSPE                                     | Document in Log book            |                                       | AETCOM               |                                    |
| PE2.4  | Discuss the etio-pathogenesis, clinical features and management of a child with short stature                                | K                 | KH                     | Y           | Lecture, Small group discussion          | Written/ Viva voce              |                                       |                      |                                    |
| PE2.5  | Assessment of a child with short stature:<br>Elicit history, perform examination, document and present                       | S                 | SH                     | Y           | Bedside clinics,<br>Skill lab            | Skill Assessment                |                                       |                      |                                    |
| PE2.6  | Enumerate the referral criteria for growth related problems  | K                 | K                      | Y           | Small group discussion                   | Written/ Viva voce              |                                       |                      |                                    |
| <b>Topic: Common problems related to Development -1 (Developmental delay , Cerebral palsy)</b><br><b>Number of competencies:(08)      Number of procedures that require certification: (NIL)</b> |  |                   |                        |             |  |                                 |                                       |                      |                                    |
| PE3.1  | Define, enumerate and discuss the causes of developmental delay and disability including intellectual disability in children | K                 | K                      | Y           | Lecture, Small group discussion          | Written/ Viva voce              |                                       |                      |                                    |
| PE3.2  | Discuss the approach to a child with developmental delay   | K                 | K                      | Y           | Lecture, Small group discussion          | Written/ Viva voce              |                                       |                      |                                    |
| PE3.3  | Assessment of a child with developmental delay - Elicit document and present history   | S                 | SH                     | Y           | Bedside clinics,<br>Skills lab           | Skill Assessment                |                                       |                      |                                    |
| PE3.4  | Counsel a parent of a child with developmental delay   | S                 | SH                     | Y           | DOAP session                             | Document in Log Book            |                                       |                      |                                    |
| PE3.5  | Discuss the role of the child developmental unit in management of developmental delay  | K                 | K                      | N           | Lecture, Small group discussion          | Written/ Viva voce              |                                       | Community Medicine   |                                    |
| PE3.6  | Discuss the referral criteria for children with developmental delay  | K                 | K                      | Y           | Lecture, Small group discussion          | Written/ Viva voce              |                                       |                      |                                    |
| PE3.7  | Visit a Child Developmental Unit and observe its functioning   | S                 | KH                     | Y           | Lecture, Small group discussion          | Log book Entry                  |                                       | Community Medicine   |                                    |
| PE3.8  | Discuss the etio-pathogenesis, clinical presentation and multi-disciplinary approach in the management of Cerebral palsy     | K                 | KH                     | Y           | Lecture, Small group,<br>Bedside clinics | Written/ Viva voce              |                                       |                      | Physical Medicine & Rehabilitation |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>Topic: Common problems related to Development-2 (Scholastic backwardness, Learning Disabilities , Autism , ADHD)</b><br><b>Number of competencies: (06)</b> <b>Number of procedures that require certification: (NIL)</b> |   |                   |                        |             |  |                                 |                                       |                      |                           |
| PE4.1  | Discuss the causes and approach to a child with scholastic backwardness   | K                 | K                      | N           | Lecture, Small group discussion        | Written                         |                                       |                      |                           |
| PE4.2  | Discuss the etiology, clinical features, diagnosis and management of a child with Learning Disabilities                           | K                 | K                      | N           | Lecture, Small group discussion        | Written                         |                                       |                      |                           |
| PE4.3  | Discuss the etiology, clinical features, diagnosis and management of a child with Attention Deficit Hyperactivity Disorder (ADHD) | K                 | K                      | N           | Lecture, Small group discussion        | Written                         |                                       |                      |                           |
| PE4.4  | Discuss the etiology, clinical features, diagnosis and management of a child with Autism  | K                 | K                      | N           | Lecture, Small group discussion        | Written                         |                                       |                      |                           |
| PE4.5  | Discuss the role of Child Guidance clinic in children with Developmental problems   | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Psychiatry           |                           |
| PE4.6  | Visit to the Child Guidance Clinic  | S                 | KH                     | N           | Lecture, Small group discussion        | Document in Log Book            |                                       |                      |                           |
| <b>Topic: Common problems related to behavior</b> <b>Number of competencies: ( 11)</b> <b>Number of procedures that require certification: (NIL)</b>   |   |                   |                        |             |  |                                 |                                       |                      |                           |
| PE5.1  | Describe the clinical features, diagnosis and management of thumb sucking   | K                 | K                      | N           | Lecture, Small group discussion        | Written                         |                                       |                      |                           |
| PE5.2  | Describe the clinical features, diagnosis and management of Feeding problems  | K                 | K                      | N           | Lecture, Small group discussion        | Written                         |                                       |                      |                           |
| PE5.3  | Describe the clinical features, diagnosis and management of nail biting   | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE5.4  | Describe the clinical features, diagnosis and management of Breath Holding spells   | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | Psychiatry                |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE5.5  | Describe the clinical features, diagnosis and management of temper tantrums                               | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | Psychiatry                |
| PE5.6  | Describe the clinical features, diagnosis and management of Pica  | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE5.7  | Describe the clinical features, diagnosis and management of Fussy infant                                  | K                 | K                      | N           | Lecture, Small group discussion        | Written                         |                                       |                      | Psychiatry                |
| PE5.8  | Discuss the etiology, clinical features and management of Enuresis  | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE5.9  | Discuss the etiology, clinical features and management of Encopresis                                      | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE5.10 | Discuss the role of child guidance clinic in children with behavioural problems and the referral criteria | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | Psychiatry                |
| PE5.11 | Visit to Child Guidance Clinic and observe functioning  | K                 | KH                     | N           | Lecture, Small group discussion        | Document in Log Book            |                                       |                      |                           |

**Topic: Adolescent Health & common problems related to Adolescent Health**      **Number of competencies: (13)**      **Number of procedures that require certification: (NIL)**

|       |   |   |    |   |                                 |                    |  |  |            |
|-------|---|---|----|---|---------------------------------|--------------------|--|--|------------|
| PE6.1 | Define Adolescence and stages of adolescence  | K | K  | Y | Lecture, Small group discussion | Written/ Viva voce |  |  |            |
| PE6.2 | Describe the physical, physiological and psychological changes during adolescence (Puberty) | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  | Psychiatry |
| PE6.3 | Discuss the general health problems during adolescence                                      | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  |            |
| PE6.4 | Describe adolescent sexuality and common problems related to it                             | K | KH | N | Lecture, Small group discussion | Written/ Viva voce |  |  | Psychiatry |
| PE6.5 | Explain the Adolescent Nutrition and common nutritional problems                            | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  | Psychiatry |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE6.6   | Discuss the common Adolescent eating disorders (Anorexia Nervosa, Bulimia)   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | Psychiatry                |
| PE6.7   | Describe the common mental health problems during adolescence  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | Psychiatry                |
| PE6.8   | Respecting patient privacy and maintaining confidentiality while dealing with adolescence  | A                 | SH                     | Y           | Bedside clinics                        | Document in log book            |                                       |                      | AETCOM                    |
| PE6.9   | Perform routine Adolescent Health check up including eliciting history, performing examination including SMR (Sexual Maturity Rating), growth assessments (using Growth charts) and systemic exam including thyroid and Breast exam and the HEADSS screening | S                 | SH                     | Y           | Bedside clinics                        | Skills station                  |                                       |                      |                           |
| PE6.10  | Discuss the objectives and functions of AFHS (Adolescent Friendly Health Services) and the referral criteria   | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE6.11  | Visit to the Adolescent Clinic   | S                 | KH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      |                           |
| PE6.12  | Enumerate the importance of obesity and other NCD in adolescents   | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE6.13  | Enumerate the prevalence and the importance of recognition of sexual drug abuse in adolescents and children  | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | Psychiatry                |
| <p><b>Topic: To promote and support optimal Breast feeding for Infants      Number of competencies: (11)      Number of procedures that require certification: (01)</b></p> |  |                   |                        |             |  |                                 |                                       |                      |                           |
| PE7.1   | Awareness on the cultural beliefs and practices of breast feeding  | K                 | K                      | N           | Lecture, Small group discussion        | Viva                            |                                       |                      | Obstetrics & Gynaecology  |
| PE7.2   | Explain the physiology of lactation  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology           |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration        |
|--|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|----------------------------------|
| PE7.3  | Describe the composition and types of breast milk and discuss the differences between cow's milk and Human milk   | K                 | KH                     | Y           | Lecture, debate                        | Written/ Viva voce              |                                       | Physiology           |                                  |
| PE7.4  | Discuss the advantages of breast milk   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                                  |
| PE7.5  | Observe the correct technique of breast feeding and distinguish right from wrong techniques   | S                 | P                      | Y           | Bedside clinics, Skills lab            | Skill Assessment                | 3                                     |                      |                                  |
| PE7.6  | Enumerate the baby friendly hospital initiatives  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                                  |
| PE7.7  | Perform breast examination and identify common problems during lactation such as retracted nipples, cracked nipples, breast engorgement, breast abscess | S                 | SH                     | Y           | Bedside clinics, Skill Lab             | Skill Assessment                |                                       |                      | Obstetrics & Gynaecology, AETCOM |
| PE7.8  | Educate mothers on ante natal breast care and prepare mothers for lactation   | A/C               | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      | AETCOM                           |
| PE7.9  | Educate and counsel mothers for best practices in Breast feeding  | A/C               | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      | Obstetrics & Gynaecology, AETCOM |
| PE7.10   | Respects patient privacy  | A                 | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      | AETCOM                           |
| PE7.11   | Participate in Breast Feeding Week Celebration  | A                 | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      |                                  |
| <b>Topic: Complementary Feeding</b> <span style="margin-left: 200px;"><b>Number of competencies : (05)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |             |  |                                 |                                       |                      |                                  |
| PE8.1  | Define the term Complementary Feeding   | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine   |                                  |



| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE8.2  | Discuss the principles, the initiation, attributes, frequency, techniques and hygiene related to Complementary Feeding including IYCF | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine   |                           |
| PE8.3  | Enumerate the common complimentary foods  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine   |                           |
| PE8.4  | Elicit history on the Complementary Feeding habits  | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       | Community Medicine   |                           |
| PE8.5  | Counsel and educate mothers on the best practices in Complimentary Feeding  | A/C               | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       | Community Medicine   |                           |

**Topic: Normal nutrition, assessment and monitoring**

**Numbcompetencies : (07)**

**Number of procedures that require certification: (NIL)**

|       |   |   |    |   |   |                    |  |                                  |  |
|-------|---|---|----|---|---|--------------------|--|----------------------------------|--|
| PE9.1 | Describe the age related nutritional needs of infants, children and adolescents including micronutrients and vitamins       | K | KH | Y | Lecture, Small group discussion         | Written/ Viva voce |  | Community Medicine, Biochemistry |  |
| PE9.2 | Describe the tools and methods for assessment and classification of nutritional status of infants, children and adolescents | K | KH | Y | Lecture, Small group discussion         | Written/ Viva voce |  | Community Medicine               |  |
| PE9.3 | Explains the Calorific value of common Indian foods   | K | K  | Y | Lecture, Small group discussion         | Written/ Viva voce |  | Biochemistry                     |  |
| PE9.4 | Elicit document and present an appropriate nutritional history and perform a dietary recall                                 | S | SH | Y | Bedside clinic, Skills lab              | Skill Assessment   |  | Community Medicine               |  |
| PE9.5 | Calculate the age related calorie requirement in Health and Disease and identify gap  | S | SH | Y | Bedside clinics, Small group discussion | Skill assessment   |  | Community Medicine               |  |
| PE9.6 | Assess and classify the nutrition status of infants, children and adolescents and recognize deviations                      | S | SH | Y | Bedside clinic, Small group discussion  | Skill Assessment   |  | Community Medicine               |  |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|--|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| PE9.7  | Plan an appropriate diet in health and disease  | S                 | SH                     | N           | Bedside clinic, Small group discussion | Document in logbook             |                                       | Community Medicine                  |                           |
| <b>Topic: Provide nutritional support , assessment and monitoring for common nutritional problems</b><br><b>Number of competencies: (06)</b> <b>Number of procedures that require certification: (NIL)</b> |   |                   |                        |             |  |                                 |                                       |                                     |                           |
| PE10.1   | Define and describe the etio-pathogenesis, classify including WHO classification, clinical features, complication and management of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM) | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Biochemistry            |                           |
| PE10.2   | Outline the clinical approach to a child with SAM and MAM   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Biochemistry            |                           |
| PE10.3   | Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community based intervention, rehabilitation and prevention                              | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill station                   |                                       | Physiology, Biochemistry            |                           |
| PE10.4   | Identify children with under nutrition as per IMNCI criteria and plan referral  | S                 | SH                     | Y           | DOAP session                           | Document in log book            |                                       | Community Medicine                  |                           |
| PE10.5   | Counsel parents of children with SAM and MAM  | S                 | SH                     | Y           | Bedside clinic, Skills Station         | Document in Log book            |                                       | AETCOM                              |                           |
| PE10.6   | Enumerate the role of locally prepared therapeutic diets and ready to use therapeutic diets   | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                                     |                           |
| <b>Topic: Obesity in children</b> <b>Number of competencies: (06)</b> <b>Number of procedures that require certification: (01)</b>   |   |                   |                        |             |  |                                 |                                       |                                     |                           |
| PE11.1   | Describe the common etiology, clinical features and management of obesity in children   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Biochemistry, Pathology |                           |



| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| PE12.6  | Discuss the RDA, dietary sources of Vitamin D and their role in health and disease  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                        |                           |
| PE12.7  | Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin D (Rickets and Hypervitaminosis D) | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry, Physiology, Pathology |                           |
| PE12.8  | Identify the clinical features of dietary deficiency of Vitamin D   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Document in log book            |                                       | Biochemistry, Physiology, Pathology |                           |
| PE12.9  | Assess patients with Vitamin D deficiency, diagnose, classify and plan management   | S                 | SH                     | Y           | Bedside clinics                        | Document in log book            |                                       | Biochemistry, Physiology, Pathology |                           |
| PE12.10 | Discuss the role of screening for Vitamin D deficiency  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                                     |                           |
| PE12.11 | Discuss the RDA, dietary sources of Vitamin E and their role in health and disease  | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                        |                           |
| PE12.12 | Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin E   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                        |                           |
| PE12.13 | Discuss the RDA, dietary sources of Vitamin K and their role in health and disease  | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry, Physiology, Pathology |                           |
| PE12.14 | Describe the causes, clinical features, diagnosis management and prevention of deficiency of Vitamin K                                | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry, Physiology, Pathology |                           |
| PE12.15 | Discuss the RDA, dietary sources of Vitamin B and their role in health and disease  | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                        |                           |
| PE12.16 | Describe the causes, clinical features, diagnosis and management of deficiency of B complex Vitamins                                  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                        |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE12.17 | Identify the clinical features of Vitamin B complex deficiency                                       | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Document in log book            |                                       | Biochemistry         |                           |
| PE12.18 | Diagnose patients with Vitamin B complex deficiency and plan management                              | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Document in log book            |                                       | Biochemistry         |                           |
| PE12.19 | Discuss the RDA , dietary sources of Vitamin C and their role in Health and disease                  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry         |                           |
| PE12.20 | Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin C (scurvy) | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry         |                           |
| PE12.21 | Identify the clinical features of Vitamin C deficiency   | S                 | SH                     | N           | Bedside clinics, Skill lab             | Document in log book            |                                       | Biochemistry         |                           |

**Topic: Micronutrients in Health and disease -2: Iron, Iodine, Calcium, Magnesium**

**Number of competencies: (14)**

**Number of procedures that require certification: (NIL)**

|        |   |   |    |   |  |                      |  |                                  |  |
|--------|---|---|----|---|--|----------------------|--|----------------------------------|--|
| PE13.1 | Discuss the RDA, dietary sources of Iron and their role in health and disease     | K | K  | Y | Lecture, Small group discussion        | Written/ Viva voce   |  | Pathology, Biochemistry          |  |
| PE13.2 | Describe the causes, diagnosis and management of Fe deficiency                    | K | KH | Y | Lecture, Small group discussion        | Written/ Viva voce   |  | Pathology, Biochemistry          |  |
| PE13.3 | Identify the clinical features of dietary deficiency of Iron and make a diagnosis | S | SH | Y | Bedside clinics, Skills lab            | Document in log book |  | Pathology, Biochemistry          |  |
| PE13.4 | Interpret hemogram and Iron Panel   | S | SH | Y | Bedside clinic, Small group discussion | Skill Assessment     |  | Pathology, Biochemistry          |  |
| PE13.5 | Propose a management plan for Fe deficiency anaemia                               | S | SH | Y | Bedside clinics, Skills lab            | Skill Assessment     |  | Pathology, Pharmacology          |  |
| PE13.6 | Discuss the National anaemia control program and its recommendations              | K | K  | Y | Lecture, Small group discussion        | Written/ Viva voce   |  | Pharmacology, Community Medicine |  |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------------------|---------------------------|
| PE13.7  | Discuss the RDA , dietary sources of Iodine and their role in Health and disease                     | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                     |                           |
| PE13.8  | Describe the causes, diagnosis and management of deficiency of Iodine                                | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                     |                           |
| PE13.9  | Identify the clinical features of Iodine deficiency disorders  | S                 | SH                     | N           | Lecture, Bedside clinic                | Written/ Viva voce              |                                       | Biochemistry                     |                           |
| PE13.10   | Discuss the National Goiter Control program and their recommendations                                | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry, Community Medicine |                           |
| PE13.11   | Discuss the RDA, dietary sources of Calcium and their role in health and disease                     | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                     |                           |
| PE13.12   | Describe the causes, clinical features, diagnosis and management of Ca Deficiency                    | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                     |                           |
| PE13.13   | Discuss the RDA, dietary sources of Magnesium and their role in health and disease                   | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                     |                           |
| PE13.14   | Describe the causes, clinical features, diagnosis and management of Magnesium Deficiency             | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry                     |                           |
| <b>Topic: Toxic elements and free radicals and oxygen toxicity</b> <span style="margin-left: 150px;"><b>Number of competencies: (05)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification (NIL)</b></span> |  |                   |                        |             |  |                                 |                                       |                                  |                           |
| PE14.1  | Discuss the risk factors, clinical features, diagnosis and management of Lead Poisoning              | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pharmacology                     |                           |
| PE14.2  | Discuss the risk factors, clinical features, diagnosis and management of Kerosene ingestion          | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | ENT                              |                           |
| PE14.3  | Discuss the risk factors, clinical features, diagnosis and management of Organophosphorous poisoning | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pharmacology                     | General Medicine          |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods  | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE14.4   | Discuss the risk factors, clinical features, diagnosis and management of paracetamol poisoning   | K                 | KH                     | N           | Lecture, Small group discussion         | Written/ Viva voce              |                                       | Pharmacology         |                           |
| PE14.5   | Discuss the risk factors, clinical features, diagnosis and management of Oxygen toxicity   | K                 | KH                     | N           | Lecture, Small group discussion         | Written/ Viva voce              |                                       |                      |                           |
| <b>Topic: Fluid and electrolyte balance</b> <span style="float: right;">Number of competencies:(07)</span> <span style="float: right;">Number of procedures that require certification:(NIL)</span>  |  |                   |                        |             |   |                                 |                                       |                      |                           |
| PE15.1   | Discuss the fluid and electrolyte requirement in health and disease  | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       |                      |                           |
| PE15.2   | Discuss the clinical features and complications of fluid and electrolyte imbalance and outline the management                            | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       |                      |                           |
| PE15.3   | Calculate the fluid and electrolyte requirement in health  | S                 | SH                     | Y           | Bedside clinics, Small group discussion | Skill Assessment                |                                       |                      |                           |
| PE15.4   | Interpret electrolyte report   | S                 | SH                     | Y           | Bedside clinics, Small group discussion | Skill Assessment                |                                       |                      |                           |
| PE15.5   | Calculate fluid and electrolyte imbalance  | S                 | SH                     | Y           | Bedside clinics, Small group discussion | Skill Assessment                |                                       |                      |                           |
| PE15.6   | Demonstrate the steps of inserting an IV cannula in a model  | S                 | SH                     | Y           | Skills Lab                              | mannequin                       |                                       |                      |                           |
| PE15.7   | Demonstrate the steps of inserting an interosseous line in a mannequin   | S                 | SH                     | Y           | Skills Lab                              | mannequin                       |                                       |                      |                           |
| <b>Topic: Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Guideline</b> <span style="float: right;">Number of competencies:(03)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |             |   |                                 |                                       |                      |                           |
| PE16.1   | Explain the components of Integrated Management of Neonatal and Childhood Illnesses (IMNCI) guidelines and method of Risk stratification | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE16.2  | Assess children <2 months using IMNCI Guidelines  | S                 | SH                     | Y           | DOAP session                           | Document in log Book            |                                       |                      |                           |
| PE16.3  | Assess children >2 to 5 years using IMNCI guidelines and Stratify Risk  | S                 | SH                     | Y           | DOAP session                           | Document in log Book            |                                       |                      |                           |
| <b>Topic: The National Health programs, NHM</b> <span style="margin-left: 200px;"><b>Number of competencies:(02)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span>  |   |                   |                        |             |  |                                 |                                       |                      |                           |
| PE17.1  | State the vision and outline the goals, strategies and plan of action of NHM and other important national programs pertaining to maternal and child health including RMNCH A+, RBSK, RKSK, JSSK mission Indradhanush and ICDS | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine   |                           |
| PE17.2  | Analyse the outcomes and appraise the monitoring and evaluation of NHM  | K                 | KH                     | Y           | Debate                                 | Written/ Viva voce              |                                       | Community Medicine   |                           |
| <b>Topic: The National Health Programs: RCH</b> <span style="margin-left: 200px;"><b>Number of competencies: (08)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |             |  |                                 |                                       |                      |                           |
| PE18.1  | List and explain the components, plan, outcome of Reproductive Child Health (RCH) program and appraise its monitoring and evaluation  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine   | Obstetrics & Gynaecology  |
| PE18.2  | Explain preventive interventions for child survival and safe motherhood   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine   | Obstetrics & Gynaecology  |
| PE18.3  | Conduct Antenatal examination of women independently and apply at-risk approach in antenatal care   | S                 | SH                     | Y           | Bedside clinics                        | Skill station                   |                                       | Community Medicine   | Obstetrics & Gynaecology  |
| PE18.4  | Provide intra-natal care and conduct a normal delivery in a simulated environment   | S                 | SH                     | Y           | DOAP session, Skills lab               | Document in Log Book            |                                       | Community Medicine   | Obstetrics & Gynaecology  |
| PE18.5  | Provide intra-natal care and observe the conduct of a normal delivery   | S                 | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      | Obstetrics & Gynaecology  |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                           | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--|---------------------------|
| PE18.6  | Perform Postnatal assessment of newborn and mother, provide advice on breast feeding, weaning and on family planning   | S                 | SH                     | Y           | Bed side clinics, Skill Lab            | Skill Assessment                |                                       | Community Medicine                             | Obstetrics & Gynaecology  |
| PE18.7  | Educate and counsel caregivers of children   | A                 | SH                     | Y           | Postnatal ward, standardized patient   | Skill Assessment                |                                       | AETCOM   |                           |
| PE18.8  | Observe the implementation of the program by visiting the Rural Health Centre  | S                 | KH                     | Y           | Bed side clinics, Skill Lab            | Document in log book            |                                       | Community Medicine                             | Obstetrics & Gynaecology  |
| <b>Topic: National Programs, RCH - Universal Immunizations program      Number of competencies: (16)      Number of procedures that require certification: (01)</b> |  |                   |                        |             |  |                                 |                                       |  |                           |
| PE19.1  | Explain the components of the Universal Immunization Program and the National Immunization Program   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine, Microbiology, Biochemistry |                           |
| PE19.2  | Explain the epidemiology of Vaccine preventable diseases   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine, Microbiology, Biochemistry |                           |
| PE19.3  | Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine, Microbiology, Biochemistry |                           |
| PE19.4  | Define cold chain and discuss the methods of safe storage and handling of vaccines   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine, Microbiology, Biochemistry |                           |
| PE19.5  | Discuss immunization in special situations – HIV positive children, immunodeficiency, pre-term, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travellers | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine, Microbiology, Biochemistry |                           |
| PE19.6  | Assess patient for fitness for immunization and prescribe an age appropriate immunization schedule   | S                 | P                      | Y           | Out Patient clinics Skills lab         | Skill Assessment                | 5                                     |  |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE19.7  | Educate and counsel a patient for immunization  | A/C               | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      |                           |
| PE19.8  | Demonstrate willingness to participate in the National and sub national immunisation days   | A                 | SH                     | Y           | Lecture, Small group discussion        | Document in Log Book            |                                       | Community Medicine   |                           |
| PE19.9  | Describe the components of safe vaccine practice – Patient education/ counselling; adverse events following immunization, safe injection practices, documentation and Medico-legal implications | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      | AETCOM                    |
| PE19.10 | Observe the handling and storing of vaccines  | S                 | SH                     | Y           | DOAP session                           | Written/ Viva voce              |                                       |                      |                           |
| PE19.11 | Document Immunization in an immunization record   | S                 | SH                     | Y           | Out Patient clinics, Skills lab        | Skill assessment                |                                       |                      |                           |
| PE19.12 | Observe the administration of UIP vaccines  | S                 | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       | Community Medicine   |                           |
| PE19.13 | Demonstrate the correct administration of different vaccines in a mannequin   | S                 | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      |                           |
| PE19.14 | Practice Infection control measures and appropriate handling of the sharps  | S                 | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      |                           |
| PE19.15 | Explain the term implied consent in Immunization services   | K                 | K                      | Y           | Small group discussion                 | Written/ Viva voce              |                                       |                      |                           |
| PE19.16 | Enumerate available newer vaccines and their indications including pentavalent pneumococcal, rotavirus, JE, typhoid IPV & HPV   | K                 | K                      | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |

Topic: Care of the Normal New born, and High risk New born

Number of competencies: (20)

Number of procedures that require certification: (NIL)

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE20.1  | Define the common neonatal nomenclatures including the classification and describe the characteristics of a Normal Term Neonate and High Risk Neonates       | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.2  | Explain the care of a normal neonate   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.3  | Perform Neonatal resuscitation in a manikin  | S                 | SH                     | Y           | DOAP session                           | Log book entry of Performance   |                                       |                      |                           |
| PE20.4  | Assessment of a normal neonate   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                      |                           |
| PE20.5  | Counsel / educate mothers on the care of neonates  | A/C               | SH                     | Y           | DOAP session                           | Log book documentation          |                                       |                      |                           |
| PE20.6  | Explain the follow up care for neonates including Breast Feeding, Temperature maintenance, immunization, importance of growth monitoring and red flags       | S                 | SH                     | Y           | DOAP session                           | Log book entry                  |                                       |                      | Obstetrics & Gynaecology  |
| PE20.7  | Discuss the etiology, clinical features and management of Birth asphyxia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.8  | Discuss the etiology, clinical features and management of respiratory distress in New born including meconium aspiration and transient tachypnoea of newborn | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.9  | Discuss the etiology, clinical features and management of Birth injuries   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.10 | Discuss the etiology, clinical features and management of Hemorrhagic disease of New born  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |

| Number  | <b>COMPETENCY</b><br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE20.11 | Discuss the clinical characteristics, complications and management of Low birth weight (preterm and Small for gestation)   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.12 | Discuss the temperature regulation in neonates, clinical features and management of Neonatal Hypothermia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.13 | Discuss the temperature regulation in neonates, clinical features and management of Neonatal Hypoglycemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.14 | Discuss the etiology, clinical features and management of Neonatal hypocalcemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.15 | Discuss the etiology, clinical features and management of Neonatal seizures  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.16 | Discuss the etiology, clinical features and management of Neonatal Sepsis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.17 | Discuss the etiology, clinical features and management of Perinatal infections   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.18 | Identify and stratify risk in a sick neonate using IMNCI guidelines  | S                 | SH                     | Y           | DOAP session                           | Document in Log Book            |                                       |                      |                           |
| PE20.19 | Discuss the etiology, clinical features and management of Neonatal hyperbilirubinemia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE20.20 | Identify clinical presentations of common surgical conditions in the new born including TEF, esophageal atresia, anal atresia, cleft lip and palate, congenital diaphragmatic hernia and causes of acute abdomen | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |

**Topic: Genito-Urinary system**

**Number of competencies: (17)**

**Number of procedures that require certification: (NIL)**

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|-------------------------|---------------------------|
| PE21.1  | Enumerate the etio-pathogenesis, clinical features, complications and management of Urinary Tract infection in children                       | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology            |                           |
| PE21.2  | Enumerate the etio-pathogenesis, clinical features, complications and management of acute post-streptococcal Glomerular Nephritis in children | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology               |                           |
| PE21.3  | Discuss the approach and referral criteria to a child with Proteinuria  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology               |                           |
| PE21.4  | Discuss the approach and referral criteria to a child with Hematuria  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Human Anatomy           |                           |
| PE21.5  | Enumerate the etio-pathogenesis, clinical features, complications and management of Acute Renal Failure in children                           | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology               |                           |
| PE21.6  | Enumerate the etio-pathogenesis, clinical features, complications and management of Chronic Renal Failure in Children                         | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology               |                           |
| PE21.7  | Enumerate the etio-pathogenesis, clinical features, complications and management of Wilms Tumor   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology               |                           |
| PE21.8  | Elicit, document and present a history pertaining to diseases of the Genitourinary tract  | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                         | General Surgery           |
| PE21.9  | Identify external markers for Kidney disease, like Failing to thrive, hypertension, pallor, Icthyosis, anasarca                               | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Document in log book            |                                       |                         |                           |
| PE21.10 | Analyse symptom and interpret the physical findings and arrive at an appropriate provisional / differential diagnosis                         | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Log book                        |                                       |                         |                           |
| PE21.11 | Perform and interpret the common analytes in a Urine examination  | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill assessment                |                                       | Biochemistry, Pathology |                           |
| PE21.12 | Interpret report of Plain X Ray of KUB  | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Log book                        |                                       | Radiodiagnosis          |                           |



| Number  | <b>COMPETENCY</b><br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| PE23.2  | Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases – Fallot’s Physiology  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Pathology               |                           |
| PE23.3  | Discuss the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Pathology               |                           |
| PE23.4  | Discuss the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Pathology               |                           |
| PE23.5  | Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Pathology               |                           |
| PE23.6  | Discuss the etio-pathogenesis, clinical features and management of Infective endocarditis in children  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Pathology, Microbiology |                           |
| PE23.7  | Elicit appropriate history for a cardiac disease, analyse the symptoms e.g. breathlessness, chest pain, tachycardia, feeding difficulty, failing to thrive, reduced urinary output, swelling, syncope, cyanotic spells, Suck rest cycle, frontal swelling in infants. Document and present | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                                     |                           |
| PE23.8  | Identify external markers of a cardiac disease e.g. Cyanosis, Clubbing, dependent edema, dental caries, arthritis, erythema rash, chorea, subcutaneous nodules, Osler's node, Janeway lesions and document   | S                 | SH                     | Y           | Bedside clinics, Skills Lab            | Skill Assessment                |                                       |                                     |                           |
| PE23.9  | Record pulse, blood pressure, temperature and respiratory rate and interpret as per the age  | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                                     |                           |
| PE23.10 | Perform independently examination of the cardiovascular system – look for precordial bulge, pulsations in the precordium, JVP and its significance in children and infants, relevance of percussion in Pediatric examination, Auscultation and other system examination and document       | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill station                   |                                       |                                     |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods  | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|-------------------------|---------------------------|
| PE23.11  | Develop a treatment plan and prescribe appropriate drugs including fluids in cardiac diseases, anti -failure drugs, and inotropic agents | S                 | SH                     | Y           | Bedside clinics, Skills lab             | log book                        |                                       |                         |                           |
| PE23.12  | Interpret a chest X ray and recognize Cardiomegaly   | S                 | SH                     | Y           | Bedside clinics, Skills lab             | Log book entry                  |                                       | Radiodiagnosis          |                           |
| PE23.13  | Choose and Interpret blood reports in Cardiac illness  | S                 | P                      | Y           | Bedside clinics, Small group discussion | Log book entry                  |                                       |                         |                           |
| PE23.14  | Interpret Pediatric ECG  | S                 | SH                     | Y           | Bedside clinics, Skills lab             | Log book entry                  |                                       |                         |                           |
| PE23.15  | Use the ECHO reports in management of cases  | S                 | SH                     | Y           | Bedside clinics                         | Log book entry                  |                                       | Radiodiagnosis          |                           |
| PE23.16  | Discuss the indications and limitations of Cardiac catheterization   | K                 | K                      | N           | Small group discussion                  | Viva voce                       |                                       |                         |                           |
| PE23.17  | Enumerate some common cardiac surgeries like BT shunt, Potts and Waterston's and corrective surgeries                                    | K                 | K                      | N           | Small group discussion                  | Viva voce                       |                                       |                         |                           |
| PE23.18  | Demonstrate empathy while dealing with children with cardiac diseases in every patient encounter   | A                 | SH                     | Y           | Small group discussion                  | Document in Log Book            |                                       | AETCOM                  |                           |
| <b>Topic:Diarrhoeal diseases and Dehydration</b> <span style="margin-left: 200px;"><b>Number of competencies: (17)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification:(03)</b></span> |  |                   |                        |             |   |                                 |                                       |                         |                           |
| PE24.1   | Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children                    | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       | Pathology, Microbiology |                           |
| PE24.2   | Discuss the classification and clinical presentation of various types of diarrheal dehydration   | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       | Pathology, Microbiology |                           |



| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods  | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|-------------------------------|---------------------------|
| PE24.3  | Discuss the physiological basis of ORT, types of ORS and the composition of various types of ORS                            | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       |                               |                           |
| PE24.4  | Discuss the types of fluid used in Paediatric diarrheal diseases and their composition                                      | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       |                               |                           |
| PE24.5  | Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti-emetics in acute diarrheal diseases | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       | Pharmacology,<br>Microbiology |                           |
| PE24.6  | Discuss the causes, clinical presentation and management of persistent diarrhoea in children                                | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       | Microbiology                  |                           |
| PE24.7  | Discuss the causes, clinical presentation and management of chronic diarrhoea in children                                   | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       |                               |                           |
| PE24.8  | Discuss the causes, clinical presentation and management of dysentery in children   | K                 | KH                     | Y           | Lecture, Small group discussion         | Written/ Viva voce              |                                       | Pharmacology,<br>Microbiology |                           |
| PE24.9  | Elicit, document and present history pertaining to diarrheal diseases   | S                 | SH                     | Y           | Bedside clinics, Skills lab             | Skill assessment                |                                       |                               |                           |
| PE24.10 | Assess for signs of dehydration, document and present   | S                 | SH                     | Y           | Bedside clinics, Skills lab             | Skill assessment                |                                       |                               |                           |
| PE24.11 | Apply the IMNCI guidelines in risk stratification of children with diarrheal dehydration and refer                          | S                 | SH                     | Y           | Bedside clinics, Skills lab             | Document in Log book            |                                       |                               |                           |
| PE24.12 | Perform and interpret stool examination including Hanging Drop  | S                 | SH                     | N           | Bedside clinics, Skills lab             | Log book                        |                                       | Microbiology                  |                           |
| PE24.13 | Interpret RFT and electrolyte report  | S                 | SH                     | Y           | Bedside clinics, Small group discussion | Document in Log Book            |                                       |                               |                           |
| PE24.14 | Plan fluid management as per the WHO criteria   | S                 | SH                     | Y           | Bedside clinics, Small group activity   | Skills Station                  |                                       |                               |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration    | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|-------------------------|---------------------------|
| PE24.15   | Perform NG tube insertion in a manikin  | S                                   | P                      | Y           | DOAP session  | Document in Log book            | 2                                     |                         |                           |
| PE24.16   | Perform IV cannulation in a model   | S                                   | P                      | Y           | DOAP session  | Document in Log book            | 2                                     |                         |                           |
| PE24.17   | Perform Interosseous insertion model  | S                                   | P                      | Y           | DOAP session  | Document in Log book            | 2                                     |                         |                           |
| <b>Topic: Malabsorption</b>                     |   | <b>Number of competencies: (01)</b> |                        |             | <b>Number of procedures that require certification:(NIL)</b>  |                                 |                                       |                         |                           |
| PE25.1  | Discuss the etio-pathogenesis, clinical presentation and management of Malabsorption in Children and its causes including celiac disease  | K                                   | KH                     | N           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | Pathology               |                           |
| <b>Topic: Acute and chronic liver disorders</b> |   | <b>Number of competencies: (13)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                       |                         |                           |
| PE26.1  | Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children  | K                                   | KH                     | Y           | Lecture, Small group activity                                 | Written/ Viva voce              |                                       | Pathology, Microbiology |                           |
| PE26.2  | Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children  | K                                   | KH                     | Y           | Lecture, Small group activity                                 | Written/ Viva voce              |                                       | Pathology, Microbiology |                           |
| PE26.3  | Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children   | K                                   | KH                     | Y           | Lecture, Small group activity                                 | Written/ Viva voce              |                                       | Pathology, Microbiology |                           |
| PE26.4  | Discuss the etio-pathogenesis, clinical features and management of Portal Hypertension in children  | K                                   | KH                     | Y           | Lecture, Small group activity                                 | Written/ Viva voce              |                                       | Pathology               |                           |
| PE26.5  | Elicit document and present the history related to diseases of Gastrointestinal system  | S                                   | SH                     | Y           | Bedside clinics, Skills lab                                   | Skills Station                  |                                       |                         |                           |
| PE26.6  | Identify external markers for GI and Liver disorders e.g.. Jaundice, Pallor, Gynaecomastia, Spider angioma, Palmar erythema, Icthyosis, Caput medusa, Clubbing, Failing to thrive, Vitamin A and D deficiency | S                                   | SH                     | Y           | Bedside clinics, Skills lab                                   | Skill Assessment                |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE26.7   | Perform examination of the abdomen, demonstrate organomegaly, ascites etc.                               | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                      |                           |
| PE26.8   | Analyse symptoms and interpret physical signs to make a provisional/ differential diagnosis              | S                 | SH                     | Y           | Bedside clinics, Skill lab             | Skill Assessment                |                                       |                      |                           |
| PE26.9   | Interpret Liver Function Tests, viral markers, ultra sonogram report                                     | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       | Pathology            |                           |
| PE26.10  | Demonstrate the technique of liver biopsy in a Perform Liver Biopsy in a simulated environment           | S                 | SH                     | Y           | DOAP session                           | Document in log book            |                                       |                      |                           |
| PE26.11  | Enumerate the indications for Upper GI endoscopy   | K                 | K                      | N           | Small group discussion                 | Viva voce                       |                                       |                      |                           |
| PE26.12  | Discuss the prevention of Hep B infection – Universal precautions and Immunisation                       | K                 | KH                     | Y           | Lecture, Small group activity          | Written/ Viva voce              |                                       | Microbiology         |                           |
| PE26.13  | Counsel and educate patients and their family appropriately on liver diseases                            | A/C               | P                      | y           | Bedside clinics, Skills lab            | Document in log book            |                                       |                      |                           |
| <b>Topic: Pediatric Emergencies – Common Pediatric Emergencies</b> <b>Number of competencies: (35)</b> <b>Number of procedures that require certification:(10)</b> |  |                   |                        |             |  |                                 |                                       |                      |                           |
| PE27.1   | List the common causes of morbidity and mortality in the under five children                             | K                 | K                      | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.2   | Describe the etio-pathogenesis, clinical approach and management of cardiorespiratory arrest in children | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.3   | Describe the etio-pathogenesis of respiratory distress in children                                       | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE27.4  | Describe the clinical approach and management of respiratory distress in children   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.5  | Describe the etio-pathogenesis, clinical approach and management of Shock in children   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.6  | Describe the etio-pathogenesis, clinical approach and management of Status epilepticus  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.7  | Describe the etio-pathogenesis, clinical approach and management of an unconscious child  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.8  | Discuss the common types, clinical presentations and management of poisoning in children  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.9  | Discuss oxygen therapy, in Pediatric emergencies and modes of administration  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.10 | Observe the various methods of administering Oxygen   | S                 | KH                     | Y           | Demonstration                          | Document in log book            |                                       |                      |                           |
| PE27.11 | Explain the need and process of triage of sick children brought to health facility  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.12 | Enumerate emergency signs and priority signs  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.13 | List the sequential approach of assessment of emergency and priority signs  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.14 | Assess emergency signs and prioritize   | S                 | SH                     | Y           | DOAP session, Skills lab               | Skills Assessment               |                                       |                      |                           |
| PE27.15 | Assess airway and breathing: recognise signs of severe respiratory distress. Check for cyanosis, severe chest indrawing, grunting | S                 | P                      | Y           | DOAP session, Skills lab               | Skills Assessment               | 3                                     |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE27.16 | Assess airway and breathing. Demonstrate the method of positioning of an infant & child to open airway in a simulated environment   | S                 | P                      | Y           | DOAP session, Skills Lab               | Skills Assessment               | 3                                     |                      |                           |
| PE27.17 | Assess airway and breathing: administer oxygen using correct technique and appropriate flow rate  | S                 | P                      | Y           | DOAP session, Skills Lab               | Skills Assessment               | 3                                     |                      |                           |
| PE27.18 | Assess airway and breathing: perform assisted ventilation by Bag and mask in a simulated environment  | S                 | P                      | Y           | DOAP session, Skills lab               | Skills Assessment               | 3                                     |                      |                           |
| PE27.19 | Check for signs of shock i.e. pulse, Blood pressure, CRT  | S                 | P                      | Y           | DOAP session, Skills Lab               | Skills Assessment               | 3                                     |                      |                           |
| PE27.20 | Secure an IV access in a simulated environment  | S                 | P                      | Y           | DOAP session, Skills Lab               | Skills Assessment               | 3                                     |                      |                           |
| PF27.21 | Choose the type of fluid and calculate the fluid requirement in shock   | S                 | P                      | Y           | DOAP session, Small group activity     | Skills Assessment               | 3                                     |                      |                           |
| PE27.22 | Assess level of consciousness & provide emergency treatment to a child with convulsions/ coma<br>- Position an unconscious child<br>- Position a child with suspected trauma<br>- Administer IV/per rectal Diazepam for a convulsing child in a simulated environment | S                 | P                      | Y           | DOAP session, Skills Lab               | Skills Assessment               | 3                                     |                      |                           |
| PE27.23 | Assess for signs of severe dehydration  | S                 | P                      | Y           | Bedside clinics, Skills lab            | Skill station                   | 3                                     |                      |                           |
| PE27.24 | Monitoring and maintaining temperature: define hypothermia. Describe the clinical features, complications and management of Hypothermia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE27.25 | Describe the advantages and correct method of keeping an infant warm by skin to skin contact  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |

| Number                           | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|----------------------------------|--|-------------------------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE27.26                          | Describe the environmental measures to maintain temperature                          | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| PE27.27                          | Assess for hypothermia and maintain temperature                                      | S                                   | SH                     | Y           | Skills lab  | Skills Assessment               |                                       |                      |                           |
| PE27.28                          | Provide BLS for children in manikin  | S                                   | P                      | Y           | Skills Lab  |                                 | 3                                     |                      |                           |
| PE.27.29                         | Discuss the common causes, clinical presentation, medico-legal implications of abuse | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       |                      |                           |
| PE27.30                          | Demonstrate confidentiality with regard to abuse                                     | A                                   | SH                     | Y           | Skills lab, standardized patients                             | Skills Station                  |                                       |                      |                           |
| PE27.31                          | Assess child for signs of abuse  | S                                   | SH                     | Y           | DOAP session, Skills lab                                      | Log book                        |                                       |                      |                           |
| PE27.32                          | Counsel parents of dangerously ill / terminally ill child to break a bad news        | S                                   | SH                     | Y           | DOAP session  | Document in Log book            |                                       |                      |                           |
| PE27.33                          | Obtain Informed Consent  | S                                   | SH                     | Y           | DOAP session  | Document in Log book            |                                       |                      |                           |
| PE27.34                          | Willing to be a part of the ER team  | A                                   | SH                     | Y           | DOAP session  | Document in Log book            |                                       |                      |                           |
| PE27.35                          | Attends to emergency calls promptly  | A                                   | SH                     | Y           | DOAP session  | Document in Log Book            |                                       |                      |                           |
| <b>Topic: Respiratory system</b> |  | <b>Number of competencies: (20)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                       |                      |                           |
| PE28.1                           | Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis  | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | ENT                  |                           |
| PE28.2                           | Discuss the etio-pathogenesis of Pharyngo Tonsillitis                                | K                                   | KH                     | Y           | Lecture, Small group discussion                               | Written/ Viva voce              |                                       | ENT                  |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE28.3  | Discuss the clinical features and management of Pharyngo Tonsillitis   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | ENT                  |                           |
| PE28.4  | Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM)  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | ENT                  |                           |
| PE28.5  | Discuss the etio-pathogenesis, clinical features and management of Epiglottitis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | ENT                  |                           |
| PE28.6  | Discuss the etio-pathogenesis, clinical features and management of Acute laryngo- trachea-bronchitis                                       | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | ENT                  |                           |
| PE28.7  | Discuss the etiology, clinical features and management of Stridor in children  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | ENT                  |                           |
| PE28.8  | Discuss the types, clinical presentation, and management of foreign body aspiration in infants and children                                | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | ENT                  |                           |
| PE28.9  | Elicit, document and present age appropriate history of a child with upper respiratory problem including Stridor                           | S                 | SH                     | Y           | Bedside clinics, skill lab             | Skill Assessment                |                                       | ENT                  |                           |
| PE28.10 | Perform otoscopic examination of the ear   | S                 | SH                     | Y           | DOAP session                           | Skills Assessment               |                                       | ENT                  |                           |
| PE28.11 | Perform throat examination using tongue depressor  | S                 | SH                     | Y           | DOAP session                           | Skills Assessment               |                                       | ENT                  |                           |
| PE28.12 | Perform examination of the nose  | S                 | SH                     | Y           | DOAP session                           | Skills Assessment               |                                       | ENT                  |                           |
| PE28.13 | Analyse the clinical symptoms and interpret physical findings and make a provisional / differential diagnosis in a child with ENT symptoms | S                 | SH                     | Y           | Bedside clinics                        | Skills Assessment               |                                       |                      |                           |
| PE28.14 | Develop a treatment plan and document appropriately in a child with upper respiratory symptoms   | S                 | SH                     | Y           | Bedside clinics                        | Skills Assessment               |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods           | Suggested Assessment<br>methods          | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|--|---------------------------------------|-----------------------|---------------------------|
| PE28.15  | Stratify risk in children with stridor using IMNCI guidelines  | S                 | SH                     | Y           | Bedside clinics                                  | Log book documentation                   |                                       |                       |                           |
| PE28.16  | Interpret blood tests relevant to upper respiratory problems   | S                 | SH                     | N           | Bedside clinics, Small group discussion          | Log book                                 |                                       |                       |                           |
| PE28.17  | Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case of management<br>Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in pediatric chest X-rays | S                 | SH                     | Y           | Bedside clinics, Small group discussion          | Skills Assessment                        |                                       | ENT, Radiodiagnosis   |                           |
| PE28.18  | Describe the etio-pathogenesis, diagnosis, clinical features, management and prevention of lower respiratory infections including bronchiolitis, wheeze associated LRTI Pneumonia and empyema  | S                 | SH                     | Y           | Bedside clinics, Small group discussion, Lecture | Skill Assessment/<br>Written/ Viva voce  |                                       |                       |                           |
| PE28.19  | Describe the etio-pathogenesis, diagnosis, clinical features, management and prevention of asthma in children  | S                 | SH                     | Y           | Bedside clinics, Small group discussion, Lecture | Skill Assessment/<br>Written/ Viva voce  |                                       | Respiratory Medicine  |                           |
| PE28.20  | Counsel the child with asthma on the correct use of inhalers in a simulated environment  | S                 | SH                     | Y           | Bedside clinics, Small group discussion, Lecture | Skills Assessment/<br>Written/ Viva voce |                                       | Respiratory Medicine  |                           |
| <b>Topic: Anemia and other Hemato-oncologic disorders in children</b> <b>Number of competencies: (20 )</b> <b>Number of procedures that require certification: (NIL)</b> |  |                   |                        |             |  |  |                                       |                       |                           |
| PE29.1   | Discuss the etio-pathogenesis, clinical features, classification and approach to a child with anaemia  | K                 | KH                     | Y           | Lecture, Small group discussion                  | Written/ Viva voce                       |                                       | Pathology, Physiology |                           |
| PE29.2   | Discuss the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia   | K                 | KH                     | Y           | Lecture, Small group discussion                  | Written/ Viva voce                       |                                       | Pathology, Physiology |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--------------------------|---------------------------|
| PE29.3  | Discuss the etiopathogenesis, clinical features and management of VIT B12, Folate deficiency anaemia   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology,<br>Physiology |                           |
| PE29.4  | Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic anaemia and hemolytic uremic syndrome | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology,<br>Physiology |                           |
| PE29.5  | Discuss the National Anaemia Control Program   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Community Medicine       |                           |
| PE29.6  | Discuss the cause of thrombocytopenia in children: describe the clinical features and management of Idiopathic Thrombocytopenic Purpura (ITP)  | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology                |                           |
| PE29.7  | Discuss the etiology, classification, pathogenesis and clinical features of Hemophilia in children   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology                |                           |
| PE29.8  | Discuss the etiology, clinical presentation and management of Acute Lymphoblastic Leukemia in children   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology                |                           |
| PE29.9  | Discuss the etiology, clinical presentation and management of lymphoma in children   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pathology                |                           |
| PE29.10 | Elicit, document and present the history related to Hematology   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skills Station                  |                                       |                          |                           |
| PE29.11 | Identify external markers for hematological disorders e.g.. Jaundice, Pallor, Petechiae purpura, Ecchymosis, Lymphadenopathy, bone tenderness, loss of weight, Mucosal and large joint bleed                       | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill assessment                |                                       |                          |                           |
| PE29.12 | Perform examination of the abdomen, demonstrate organomegaly   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill assessment                |                                       |                          |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE29.13  | Analyse symptoms and interpret physical signs to make a provisional/ differential diagnosis                                | S                 | SH                     | Y           | Bedside clinics, Skill lab             | Skill assessment                |                                       |                      |                           |
| PE29.14  | Interpret CBC, LFT   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill assessment                |                                       |                      |                           |
| PE29.15  | Perform and interpret peripheral smear   | S                 | SH                     | Y           | DOAP session                           | Document in log book            |                                       |                      |                           |
| PE29.16  | Discuss the indications for Hemoglobin electrophoresis and interpret report  | K                 | K                      | N           | Small group discussion                 | Viva voce                       |                                       | Biochemistry         |                           |
| PE29.17  | Demonstrate performance of bone marrow aspiration in manikin   | S                 | SH                     | Y           | Skills lab                             | Document in log Book            |                                       |                      |                           |
| PE29.18  | Enumerate the referral criteria for Hematological conditions   | S                 | SH                     | Y           | Bedside clinics, Small group activity  | Viva voce                       |                                       |                      |                           |
| PE29.19  | Counsel and educate patients about prevention and treatment of anemia  | A/C               | SH                     | Y           | Bedside clinics, Skills lab            | Document in log book            |                                       |                      |                           |
| PE29.20  | Enumerate the indications for splenectomy and precautions  | K                 | K                      | N           | Small group Activity                   | Viva voce                       |                                       |                      |                           |
| <b>Topic: Systemic Pediatrics-Central Nervous system</b> <span style="margin-left: 150px;"><b>Number of competencis: (23)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification:(NIL)</b></span> |  |                   |                        |             |  |                                 |                                       |                      |                           |
| PE30.1   | Discuss the etio-pathogenesis, clinical features , complications, management and prevention of meningitis in children      | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology         |                           |
| PE30.2   | Distinguish bacterial, viral and tuberculous meningitis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology         |                           |
| PE30.3   | Discuss the etio-pathogenesis, classification, clinical features, complication and management of Hydrocephalus in children | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |

| Number  | <b>COMPETENCY</b><br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE30.4  | Discuss the etio-pathogenesis, classification, clinical features, and management of Microcephaly in children             | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.5  | Enumerate the Neural tube defects. Discuss the causes, clinical features, types, and management of Neural Tube defect    | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.6  | Discuss the etio-pathogenesis, clinical features, and management of Infantile hemiplegia                                 | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.7  | Discuss the etio-pathogenesis, clinical features, complications and management of Febrile seizures in children           | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.8  | Define epilepsy. Discuss the pathogenesis, clinical types, presentation and management of Epilepsy in children           | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.9  | Define status Epilepticus. Discuss the clinical presentation and management  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.10 | Discuss the etio-pathogenesis, clinical features and management of Mental retardation in children                        | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.11 | Discuss the etio-pathogenesis, clinical features and management of children with cerebral palsy                          | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.12 | Enumerate the causes of floppiness in an infant and discuss the clinical features, differential diagnosis and management | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.13 | Discuss the etio-pathogenesis, clinical features, management and prevention of Poliomyelitis in children                 | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology         |                           |
| PE30.14 | Discuss the etio-pathogenesis, clinical features and management of Duchene muscular dystrophy                            | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.15 | Discuss the etio-pathogenesis, clinical features and management of Ataxia in children                                    | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE30.16 | Discuss the approach to and management of a child with headache   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                      |                           |
| PE30.17 | Elicit document and present an age appropriate history pertaining to the CNS  | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                      |                           |
| PE30.18 | Demonstrate the correct method for physical examination of CNS including identification of external markers. Document and present clinical findings | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                      |                           |
| PE30.19 | Analyse symptoms and interpret physical findings and propose a provisional / differential diagnosis   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                      |                           |
| PE30.20 | Interpret and explain the findings in a CSF analysis  | S                 | SH                     | Y           | Small group discussion                 | Log book                        |                                       | Microbiology         |                           |
| PE30.21 | Enumerate the indication and discuss the limitations of EEG, CT, MRI  | K                 | K                      | N           | Bedside clinics                        | Log book                        |                                       |                      |                           |
| PE30.22 | Interpret the reports of EEG, CT, MRI   | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Log book                        |                                       | Radiodiagnosis       |                           |
| PE30.23 | Perform in a mannequin lumbar puncture. Discuss the indications, contraindication of the procedure  | S                 | SH                     | Y           | Bedside clinics, Skills lab            | Skill Assessment                |                                       |                      |                           |

**Topic: Allergic Rhinitis , Atopic Dermatitis, Bronchial Asthma , Urticaria Angioedema**

**Number of competencies: (12)**

**Number of procedures that require certification: (NIL)**

|        |   |   |    |   |                                   |                    |  |     |  |
|--------|---|---|----|---|-----------------------------------|--------------------|--|-----|--|
| PE31.1 | Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children        | K | KH | Y | Lecture, Small group discussion   | Written/ Viva voce |  | ENT |  |
| PE31.2 | Recognize the clinical signs of Allergic Rhinitis   | S | SH | Y | Bedside clinics' Skill Lab        | Skill Assessment   |  | ENT |  |
| PE31.3 | Describe the etio-pathogenesis, clinical features and management of Atopic dermatitis in Children | K | KH | Y | Lecture<br>Small group discussion | Written/ Viva voce |  | ENT |  |

| Number                                  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                        | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                     | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|--|---------------------------|
| PE31.4                                  | Identify Atopic dermatitis and manage   | S                                   | SH                     |             | Bedside clinics<br>Skills lab                                 | Skill Assessment                |                                       | Dermatology,<br>Venereology &<br>Leprosy |                           |
| PE31.5                                  | Discuss the etio-pathogenesis, clinical types, presentations, management and prevention of childhood Asthma                       | K                                   | KH                     | Y           | Lecture<br>Small group<br>discussion                          | Written/ Viva voce              |                                       |  |                           |
| PE31.6                                  | Recognise symptoms and signs of Asthma  | S                                   | SH                     | Y           | Bedside clinic, Small<br>group activity                       | Skill Assessment                |                                       |  |                           |
| PE31.7                                  | Develop a treatment plan for Asthma appropriate to clinical presentation & severity   | S                                   | SH                     | Y           | Bedside clinic, Small<br>group activity                       | Skill Assessment                |                                       |  |                           |
| PE31.8                                  | Enumerate criteria for referral   | K                                   | KH                     | Y           | Bedside clinic, Small<br>group activity                       | Written/ Viva voce              |                                       |  |                           |
| PE31.9                                  | Interpret CBC and CX Ray in Asthma  | S                                   | SH                     | Y           | Bedside clinic, Small<br>group activity                       | Skill Assessment                |                                       |  |                           |
| PE31.10                                 | Enumerate the indications for PFT   | K                                   | K                      | N           | Bedside clinic, Small<br>group activity                       | Viva voce                       |                                       |  |                           |
| PE31.11                                 | Observe administration of Nebulisation  | S                                   | SH                     | Y           | DOAP session  | Document in log book            |                                       |  |                           |
| PE31.12                                 | Discuss the etio-pathogenesis, clinical features and complications and management of Urticaria Angioedema                         | K                                   | KH                     | Y           | Lecture, Small group<br>discussion                            | Written/ Viva voce              |                                       |  |                           |
| <b>Topic: Chromosomal Abnormalities</b> |   | <b>Number of competencies: (13)</b> |                        |             | <b>Number of procedures that require certification: (NIL)</b> |                                 |                                       |  |                           |
| PE32.1                                  | Discuss the genetic basis, risk factors, complications, prenatal diagnosis, management and genetic counselling in Down's Syndrome | K                                   | KH                     | Y           | Lecture, Small group<br>discussion                            | Written/ Viva voce              |                                       | Human Anatomy                            |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                             | Horizontal<br>Integration                        |
|---------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--|--|
| PE32.2  | Identify the clinical features of Down's Syndrome  | S                 | SH                     | Y           | Bedside clinics, Skills<br>lab         | log book                        |                                       | General Medicine                                 |  |
| PE32.3  | Interpret normal Karyotype and recognize Trisomy 21  | S                 | SH                     | Y           | Bedside clinics, Skills<br>lab         | Log book                        |                                       |  | General Medicine                                 |
| PE32.4  | Discuss the referral criteria and Multidisciplinary approach to management   | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       |  |  |
| PE32.5  | Counsel parents regarding 1. Present child<br>2. Risk in the next pregnancy  | A/C               | SH                     | N           | Bedside clinics, Skills<br>lab         | Log book                        |                                       |  |  |
| PE32.6  | Discuss the genetic basis, risk factors, clinical features, complications, prenatal diagnosis, management and genetic counselling in Turner's Syndrome | K                 | KH                     | N           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | General Medicine,<br>Obstetrics &<br>Gynaecology |  |
| PE32.7  | Identify the clinical features of Turner Syndrome  | S                 | SH                     | N           | Bedside clinics, Skills<br>lab         | Log book                        |                                       | General Medicine                                 |  |
| PE32.8  | Interpret normal Karyotype and recognize the Turner Karyotype  | S                 | SH                     | N           | Bedside clinics, Skills<br>lab         | log book                        |                                       | General Medicine,<br>Obstetrics &<br>Gynaecology |  |
| PE32.9  | Discuss the referral criteria and multidisciplinary approach to management of Turner Syndrome  | K                 | KH                     | N           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       |  | General Medicine,<br>Obstetrics &<br>Gynaecology |
| PE32.10 | Counsel parents regarding 1. Present child<br>2. Risk in the next pregnancy  | A/C               | SH                     | N           | Bedside clinics, Skills<br>lab         | Log book                        |                                       |  |  |
| PE32.11 | Discuss the genetic basis, risk factors, complications, prenatal diagnosis, management and genetic counselling in Klinefelter Syndrome                 | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | General Medicine                                 |  |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods     | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE32.12   | Identify the clinical features of Klinefelter Syndrome   | S                 | SH                     | N           | Bedside clinics, Skills<br>lab             | Log book                        |                                       | General Medicine     |                           |
| PE32.13   | Interpret normal Karyotype and recognize the Klinefelter Karyotype   | S                 | SH                     | N           | Bedside clinics, Skills<br>lab             | Log book                        |                                       | General Medicine     |                           |
| <b>Topic: Endocrinology</b> <span style="margin-left: 200px;"><b>Number of competencies: ( 11)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (02)</b></span> |  |                   |                        |             |  |                                 |                                       |                      |                           |
| PE33.1  | Describe the etio-pathogenesis clinical features, management of Hypothyroidism in children                                 | K                 | KH                     | Y           | Lecture, Small group<br>discussion         | Written/ Viva voce              |                                       |                      |                           |
| PE33.2  | Recognize the clinical signs of Hypothyroidism and refer   | S                 | SH                     | Y           | Bedside clinics, Skill<br>Lab              | Skill Assessment                |                                       |                      |                           |
| PE33.3  | Interpret and explain neonatal thyroid screening report  | S                 | SH                     | Y           | Bedside clinics, Small<br>group discussion | Skill Assessment                |                                       |                      |                           |
| PE33.4  | Discuss the etio-pathogenesis, clinical types, presentations, complication and management of Diabetes mellitus in children | K                 | KH                     | Y           | Lecture, Small group<br>discussions        | Written/ Viva voce              |                                       |                      |                           |
| PE33.5  | Interpret Blood sugar reports and explain the diagnostic criteria for Type 1 Diabetes                                      | S                 | SH                     | Y           | Bedside clinic, small<br>group activity    | Skill Assessment                |                                       |                      |                           |
| PE33.6  | Perform and interpret Urine Dip Stick for Sugar  | S                 | P                      | Y           | DOAP session                               | Skill Assessment                | 3                                     | Biochemistry         |                           |
| PE33.7  | Perform genital examination and recognize Ambiguous Genitalia and refer appropriately                                      | S                 | SH                     | Y           | Bedside clinic<br>Skills lab               | Skill Assessment                |                                       |                      |                           |
| PE33.8  | Define precocious and delayed Puberty  | K                 | KH                     | Y           | Lecture, Small group<br>discussion         | Written/ Viva voce              |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                           | Horizontal<br>Integration |
|--|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--|---------------------------|
| PE33.9   | Perform Sexual Maturity Rating (SMR) and interpret   | S                 | SH                     | Y           | Bedside clinics<br>Skills Lab          | Skill Assessment                |                                       |  |                           |
| PE33.10  | Recognize precocious and delayed Puberty and refer   | S                 | SH                     | Y           | Bedside clinics<br>Skills Lab          | log book                        |                                       |  |                           |
| PE33.11  | Identify deviations in growth and plan appropriate referral  | S                 | P                      | Y           | Bedside clinics<br>Skills Lab          | log book                        | 2                                     |  |                           |
| <b>Topic:Vaccine preventable Diseases - Tuberculosis</b> <span style="margin-left: 150px;"><b>Number of competencies: ( 20)</b></span> <span style="margin-left: 150px;"><b>Number of procedures that require certification: (03)</b></span> |  |                   |                        |             |  |                                 |                                       |  |                           |
| PE34.1   | Discuss the epidemiology, clinical features, clinical types, complications of Tuberculosis in Children and Adolescents | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology                                   | Respiratory Medicine      |
| PE34.2   | Discuss the various diagnostic tools for childhood tuberculosis  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology                                   | Respiratory Medicine      |
| PE34.3   | Discuss the various regimens for management of Tuberculosis as per National Guidelines                                 | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology, Community Medicine, Pharmacology | Respiratory Medicine      |
| PE34.4   | Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Microbiology, Community Medicine, Pharmacology | Respiratory Medicine      |
| PE34.5   | Able to elicit, document and present history of contact with tuberculosis in every patient encounter                   | S                 | SH                     | Y           | Bedside clinics, Skill lab             | Skill Assessment                |                                       |  | Respiratory Medicine      |
| PE34.6   | Identify a BCG scar  | S                 | P                      | Y           | Bedside clinics, Skills lab            | Skill Assessment                | 3                                     | Microbiology                                   | Respiratory Medicine      |
| PE34.7   | Interpret a Mantoux test   | S                 | P                      | Y           | Bedside clinics<br>Skills lab          | Skill assessment                | 3                                     | Microbiology                                   | Respiratory Medicine      |
| PE34.8   | Interpret a Chest Radiograph   | S                 | SH                     | Y           | Bedside clinics<br>Skills lab          | Skill assessment                |                                       | Radiodiagnosis                                 | Respiratory Medicine      |



| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods        | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|----------------------|---------------------------|
| PE34.9  | Interpret blood tests in the context of laboratory evidence for tuberculosis  | S                 | SH                     | N           | Bedside clinics,<br>Small group<br>discussion | log book                        |                                       | Microbiology         | Respiratory Medicine      |
| PE34.10 | Discuss the various samples for demonstrating the organism e.g. Gastric Aspirate, Sputum , CSF, FNAC  | K                 | KH                     | Y           | Bedside clinics,<br>Small group<br>discussion | Written/ Viva voce              |                                       | Microbiology         | Respiratory Medicine      |
| PE34.11 | Perform AFB staining  | S                 | P                      | Y           | DOAP session                                  | Log book/Journal                | 3                                     | Microbiology         | Respiratory Medicine      |
| PE34.12 | Enumerate the indications and discuss the limitations of methods of culturing M.Tuberculi   | K                 | KH                     | Y           | Small group<br>discussion                     | Written/ Viva voce              |                                       | Microbiology         | Respiratory Medicine      |
| PE34.13 | Enumerate the newer diagnostic tools for Tuberculosis including BACTEC CBNAAT and their indications   | K                 | K                      | N           | Lecture, Small group<br>discussion            | Written/ Viva voce              |                                       |                      |                           |
| PE34.14 | Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and management of fever in children   | K                 | KH                     | Y           | Lecture, Small group<br>discussion            | Written/ Viva voce              |                                       | Microbiology         |                           |
| PE34.15 | Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and management of child with exanthematous illnesses like Measles, Mumps, Rubella & Chicken pox | K                 | KH                     | Y           | Lecture, Small group<br>discussion            | Written/ Viva voce              |                                       | Microbiology         |                           |
| PE34.16 | Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and management of child with Diphtheria, Pertussis, Tetanus.                                    | K                 | KH                     | Y           | Lecture, Small group<br>discussion            | Written/ Viva voce              |                                       | Microbiology         |                           |
| PE34.17 | Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and management of child with Typhoid  | K                 | KH                     | Y           | Lecture, Small group<br>discussion            | Written/ Viva voce              |                                       | Microbiology         |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                         | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|---------------------------------|---------------------------|
| PE34.18  | Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and management of child with Dengue, Chikungunya and other vector born diseases   | K                                   | KH                     | Y           | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Microbiology                    |                           |
| PE34.19  | Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and management of children with Common Parasitic infections, malaria, leishmaniasis, filariasis, helminthic infestations, amebiasis, giardiasis | K                                   | KH                     | Y           | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Microbiology                    |                           |
| PE34.20  | Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and management of child with Rickettsial diseases   | K                                   | KH                     | Y           | Lecture, Small group discussion                                | Written/ Viva voce              |                                       | Microbiology                    |                           |
| <b>Topic: The role of the physician in the community</b>   |   | <b>Number of competencies: (01)</b> |                        |             | <b>Number of procedures that require certification : (NIL)</b> |                                 |                                       |                                 |                           |
| PE35.1   | Identify, discuss and defend medicolegal, socio-cultural and ethical issues as they pertain to health care in children (including parental rights and right to refuse treatment)  | K                                   | KH                     | Y           | Small group discussion   | Written/ Viva voce              |                                       |                                 |                           |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH- Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |   |                                     |                        |             |  |                                 |                                       |                                 |                           |
| <b>Integration</b>   |   |                                     |                        |             |  |                                 |                                       |                                 |                           |
| <b>Human Anatomy</b>   |   |                                     |                        |             |  |                                 |                                       |                                 |                           |
| AN25.4   | Describe embryological basis of:<br>1) atrial septal defect, 2)ventricular septal defect , 3)Fallot's tetralogy & 4) tracheo-oesophageal fistula  | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce              |                                       | General Medicine,<br>Pediatrics | Physiology                |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                       | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--|---------------------------|
| AN25.5 | Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta                          | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                       | General Medicine,<br>Pediatrics            | Physiology                |
| AN25.9 | Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & surface projection of valves of heart               | K/S               | SH                     | Y           | Practical                              | Viva voce/ skill<br>assessment  |                                       | General Medicine,<br>Pediatrics            | Physiology                |
| AN63.2 | Describe anatomical basis of congenital hydrocephalus  | K                 | KH                     | N           | Lecture                                | Written                         |                                       | Pediatrics                                 | Physiology                |
| AN64.3 | Describe various types of open neural tube defects with its embryological basis  | K                 | KH                     | N           | Lecture                                | Written/ Viva voce              |                                       | Obstetrics &<br>Gynaecology,<br>Pediatrics |                           |
| AN74.1 | Describe the various modes of inheritance with examples  | K                 | KH                     | Y           | Lecture                                | Written                         |                                       | General Medicine,<br>Pediatrics            |                           |
| AN74.2 | Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance  | K                 | KH                     | Y           | Lecture                                | Written                         |                                       | General Medicine,<br>Pediatrics            |                           |
| AN74.4 | Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Hemophilia, Duchene's muscular dystrophy & Sickle cell anaemia | K                 | KH                     | N           | Lecture                                | Written                         |                                       | General Medicine,<br>Pediatrics            |                           |
| AN75.1 | Describe the structural and numerical chromosomal aberrations  | K                 | KH                     | Y           | Lecture                                | Written                         |                                       | Pediatrics                                 |                           |
| AN75.2 | Explain the terms mosaics and chimeras with example  | K                 | KH                     | N           | Lecture                                | Written                         |                                       | Pediatrics                                 |                           |
| AN75.3 | Describe the genetic basis & clinical features of Prader Willi syndrome, Edward syndrome & Patau syndrome  | K                 | KH                     | N           | Lecture                                | Written                         |                                       | Pediatrics                                 |                           |
| AN75.4 | Describe genetic basis of variation; polymorphism and mutation   | K                 | KH                     | Y           | Lecture                                | Written                         |                                       | Pediatrics                                 |                           |

| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                       | Horizontal<br>Integration |
|---------------------|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--|---------------------------|
| AN75.5              | Describe the principles of genetic counselling   | K                 | KH                     | Y           | Lecture                                | Written                         |                                       | Pediatrics, Obstetrics<br>& Gynaecology    |                           |
| <b>Physiology</b>   |  |                   |                        |             |  |                                 |                                       |  |                           |
| PY11.6              | Describe physiology of Infancy   | K                 | KH                     | N           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | Pediatrics                                 |                           |
| PY11.9              | Interpret growth charts  | K                 | KH                     | Y           | Small group teaching                   | Practical/OSPE/ Viva<br>voce    |                                       | Pediatrics                                 |                           |
| PY11.10             | Interpret anthropometric assessment of infants   | K                 | KH                     | Y           | Small group teaching                   | Practical/OSPE/Viva<br>voce     |                                       | Pediatrics                                 |                           |
| <b>Biochemistry</b> |  |                   |                        |             |  |                                 |                                       |  |                           |
| BI5.3               | Describe the digestion and absorption of dietary proteins  | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | Pediatrics                                 |                           |
| BI5.4               | Describe common disorders associated with protein metabolism   | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | Pediatrics                                 |                           |
| BI7.3               | Describe gene mutations and basic mechanism of regulation of gene expression   | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | Pediatrics                                 |                           |
| BI7.4               | Describe applications of recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | Pediatrics, General<br>Medicine            |                           |
| BI8.1               | Discuss the importance of various dietary components and explain importance of dietary fibre                           | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | General Medicine,<br>Pediatrics, Pathology |                           |
| BI8.2               | Describe the types and causes of protein energy malnutrition and its effects   | K                 | KH                     | Y           | Lecture, Small group<br>discussion     | Written/ Viva voce              |                                       | General Medicine,<br>Pediatrics, Pathology |                           |

| Number              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                             | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--|---------------------------|
| BI8.5               | Summarize the nutritional importance of commonly used items of food including fruits and vegetables. (macro-molecules & its importance)   | K                 | KH                     | Y           | Lecture , Small group discussion       | Written/ Viva voce              |                                       | Community Medicine, General Medicine, Pediatrics |                           |
| BI10.5              | Describe antigens and concepts involved in vaccine development  | K                 | KH                     | Y           | Lecture , Small group discussion       | Written/ Viva voce              |                                       | Pathology, Pediatrics, Microbiology              |                           |
| <b>Pathology</b>    |   |                   |                        |             |  |                                 |                                       |  |                           |
| PA12.2              | Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Biochemistry, Pediatrics                         |                           |
| PA21.2              | Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and hemophilias   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                                       |                           |
| PA28.12             | Define, classify and describe the genetics, inheritance etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | General Medicine, Pediatrics                     |                           |
| PA28.14             | Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                                       |                           |
| PA31.4              | Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia   | K                 | KH                     | N           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics, General Medicine                     |                           |
| PA35.2              | Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                                       |                           |
| <b>Microbiology</b> |   |                   |                        |             |  |                                 |                                       |  |                           |

| Number              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|-------------------------------|---------------------------|
| MI1.8               | Describe the mechanisms of immunity and response of the host immune system to infections  | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                       | Pediatrics                    | Pathology                 |
| MI1.9               | Discuss the immunological basis of vaccines and describe the Universal Immunisation schedule  | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                       | Paediatrics                   |                           |
| MI1.10              | Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                       | Paediatrics                   |                           |
| MI3.1               | Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features, and diagnostic modalities of these agents          | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | General Medicine, Paediatrics | Pathology                 |
| MI3.2               | Identify the common etiologic agents of diarrhea and dysentery  | S                 | SH                     | Y           | DOAP session                           | Skill assessment                |                                       | General Medicine, Paediatrics |                           |
| MI5.1               | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis   | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                       | General Medicine, Paediatrics | Pathology                 |
| MI5.2               | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis   | K                 | KH                     | Y           | Lecture                                | Written/ Viva voce              |                                       | General Medicine, Paediatrics | Pathology                 |
| MI5.3               | Identify the microbial agents causing meningitis  | S                 | SH                     | Y           | DOAP session                           | Skill assessment                |                                       | General Medicine, Paediatrics |                           |
| <b>Pharmacology</b> |   |                   |                        |             |  |                                 |                                       |                               |                           |
| PH1.12              | Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction  | K/S               | SH                     | Y           | Lecture, practical                     | Written/ Viva voce              |                                       | Pediatrics, General Medicine  |                           |

| Number                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods        | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                          | Horizontal<br>Integration |
|---------------------------|---|-------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|---|---------------------------|
| PH1.43                    | Describe and discuss the rational use of antimicrobials including antibiotic stewardship program  | K                 | KH                     | Y           | Lecture                                       | Written/ Viva voce              |                                       | General Medicine<br>Pediatrics                | Microbiology              |
| PH1.56                    | Describe basic aspects of Geriatric and Pediatric pharmacology  | K                 | KH                     | Y           | Lecture                                       | Written/ Viva voce              |                                       | Pediatrics                                    |                           |
| PH2.4                     | Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations   | S                 | SH                     | Y           | DOAP sessions                                 | Skills assessment               |                                       | Pharmacology,<br>General Medicine             |                           |
| <b>Community Medicine</b> |   |                   |                        |             |   |                                 |                                       |   |                           |
| CM3.3                     | Describe the aetiology and basis of water borne diseases /jaundice/hepatitis/ diarrheal diseases  | K                 | KH                     | Y           | Lecture, Small group discussion, DOAP session | Written/ Viva voce              |                                       | Microbiology, General<br>Medicine, Pediatrics |                           |
| CM5.1                     | Describe the common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions               | K                 | KH                     | Y           | Lecture, Small group discussion               | Written/ Viva voce              |                                       | General Medicine,<br>Pediatrics               |                           |
| CM5.2                     | Describe and demonstrate the correct method of performing a nutritional assessment of individuals, families and the community by using the appropriate method | S                 | SH                     | Y           | DOAP session                                  | Skill Assessment                |                                       | General Medicine,<br>Pediatrics               |                           |
| CM5.3                     | Define and describe common nutrition related health disorders (including macro-PEM, Micro-iron, Zn, iodine, Vit. A), their control and management.            | K                 | KH                     | Y           | Lecture, Small group discussion               | Written/ Viva voce              |                                       | General Medicine,<br>Pediatrics               |                           |
| CM5.4                     | Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment  | S                 | SH                     | Y           | DOAP session                                  | Skill Assessment                |                                       | General Medicine,<br>Pediatrics               |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods        | Suggested Assessment<br>methods      | Number<br>required<br>to certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|-------------|---|--------------------------------------|---------------------------------------|------------------------------|---------------------------|
| CM5.5  | Describe the methods of nutritional surveillance, principles of nutritional education and rehabilitation in the context of socio-cultural factors                  | K                 | KH                     | Y           | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | General Medicine, Pediatrics |                           |
| CM5.6  | Enumerate and discuss the National Nutrition Policy, important national nutritional Programs including the Integrated Child Development Services Scheme (ICDS) etc | K                 | KH                     | Y           | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pediatrics                   |                           |
| CM5.8  | Describe and discuss the importance and methods of food fortification and effects of additives and adulteration  | K                 | KH                     | Y           | Lecture, Small group discussion               | Written/ Viva voce                   |                                       | Pediatrics                   |                           |
| CM6.1  | Formulate a research question for a study  | K                 | KH                     | Y           | Small group, Lecture, DOAP session            | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.2  | Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data       | S                 | SH                     | Y           | Small group discussion, Lecture, DOAP session | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.3  | Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs                        | S                 | SH                     | Y           | Small group discussion, Lecture, DOAP session | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM6.4  | Enumerate, discuss and demonstrate common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion     | S                 | SH                     | Y           | Small group discussion, Lecture, DOAP session | Written/ Viva voce/ Skill Assessment |                                       | General Medicine, Pediatrics |                           |
| CM8.1  | Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases  | K                 | KH                     | Y           | Small group discussion, Lecture               | Written/ Viva voce                   |                                       | General Medicine, Pediatrics | Microbiology, Pathology   |
| CM8.3  | Enumerate and describe disease specific National Health Programs including their prevention and treatment of a case  | K                 | KH                     | Y           | Small group discussion, Lecture               | Written/ Viva voce                   |                                       | General Medicine, Pediatrics |                           |
| CM8.4  | Describe the principles and enumerate the measures to control a disease epidemic   | K                 | KH                     | Y           | Small group discussion, Lecture               | Written/ Viva voce                   |                                       | General Medicine, Pediatrics |                           |



| Number                                    | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods         | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                 | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| CM8.5                                     | Describe and discuss the principles of planning, implementing and evaluating control measures for disease at community level bearing in mind the public health importance of the disease | K                 | KH                     | Y           | Small group discussion, Lecture                | Written / Viva voce             |                                       | General Medicine, Pediatrics         |                           |
| CM9.2                                     | Define, calculate and interpret demographic indices including birth rate, death rate, fertility rates  | S                 | SH                     | Y           | Lecture, Small group discussion, DOAP sessions | Skill assessment                |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.1                                    | Describe the current status of Reproductive, maternal, newborn and Child Health  | K                 | KH                     | Y           | Small group discussion, Lecture                | Written/ Viva voce              |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.2                                    | Enumerate and describe the methods of screening high risk groups and common health problems  | K                 | KH                     | Y           | Small group discussion, Lecture                | Written/ Viva voce              |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.3                                    | Describe local customs and practices during pregnancy, childbirth, lactation and child feeding practices   | K                 | KH                     | Y           | Small group discussion, Lecture                | Written/ Viva voce              |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.4                                    | Describe the reproductive, maternal, newborn & child health (RMCH); child survival and safe motherhood interventions   | K                 | KH                     | Y           | Small group discussion, Lecture                | Written/ Viva voce              |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.5                                    | Describe Universal Immunization Program; Integrated Management of Neonatal and Childhood Illness (IMNCI) and other existing Programs   | K                 | KH                     | Y           | Small group discussion, Lecture                | Written/ Viva voce              |                                       | Pediatrics                           |                           |
| <b>Forensic Medicine &amp; Toxicology</b> |  |                   |                        |             |  |                                 |                                       |                                      |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods                  | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration   | Horizontal<br>Integration |
|---|--|-------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|--|---------------------------|
| FM1.9   | Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports especially<br>– maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres.<br>-- maintenance of medico-legal register like accident register.<br>-- documents of issuance of wound certificate<br>-- documents of issuance of drunkenness certificate.<br>-- documents of issuance of sickness and fitness certificate.<br>-- documents for issuance of death certificate.<br>-- documents of Medical Certification of Cause of Death - Form Number 4 and 4A<br>-- documents for estimation of age by physical, dental and radiological examination and issuance of certificate | K                 | KH                     | Y           | Lecture, Small group discussion                         | Written/ Viva voce              |                                       | Radiodiagnosis, General Surgery, General Medicine, Paediatrics |                           |
| FM2.27  | Define and discuss infanticide, foeticide and stillbirth   | K                 | KH                     | Y           | Lecture, Small group discussions                        | Written/ Viva voce              |                                       | Pediatrics   |                           |
| FM2.28  | Describe and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP session of ossification centres, Hydrostatic test, Sudden infants death syndrome and Munchausen's syndrome by proxy  | K                 | KH                     | Y           | Lecture, Small group discussions, Autopsy, DOAP session | Written/ Viva voce/ OSCE        |                                       | Pediatrics, Human Anatomy                                      |                           |
| FM3.29  | Describe and discuss child abuse and battered baby syndrome  | K                 | K/KH                   | Y           | Lecture, Small group discussion                         | Written/ Viva voce              |                                       | Pediatrics   |                           |
| <b>Dermatology, Venereology &amp; Leprosy</b> |  |                   |                        |             |   |                                 |                                       |  |                           |
| DR5.1   | Describe the etiology, microbiology, pathogenesis, natural history, clinical features, presentations and complications of scabies  | K                 | KH                     | Y           | Lecture, Small group discussion                         | Written/ Viva voce              |                                       | Pediatrics   |                           |
| DR5.2   | Identify and differentiate scabies from other lesions  | S                 | SH                     | Y           | Bedside clinic  | Skill assessment                |                                       | Pediatrics   |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods          | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration                       | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|-------------|---|---------------------------------|---------------------------------------|--|---------------------------|
| DR5.3  | Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies for scabies                            | K                 | KH                     | Y           | Lecture, Small group discussion                 | Written/ Viva voce              |                                       | Pediatrics                                 | Pharmacology              |
| DR6.1  | Describe the etiology, pathogenesis and diagnostic features of pediculosis   | K                 | KH                     | Y           | Lecture, Small group discussion                 | Written/ Viva voce              |                                       | Pediatrics                                 | Microbiology              |
| DR6.2  | Identify and differentiate pediculosis from other skin lesions   | S                 | SH                     | Y           | Bedside clinic                                  | Skill assessment                |                                       | Pediatrics                                 |                           |
| DR7.1  | Describe the etiology, microbiology, pathogenesis, clinical presentations and diagnostic features of dermatophytes                       | K                 | KH                     | Y           | Lecture, Small group discussion                 | Written/ Viva voce              |                                       | Pediatrics                                 | Microbiology              |
| DR8.1  | Describe the etiology, microbiology, pathogenesis, clinical presentations and diagnostic features of common viral infections of the skin | K                 | KH                     | Y           | Lecture, Small group discussion                 | Written/ Viva voce              |                                       | Pediatrics                                 | Microbiology              |
| DR17.1 | Enumerate and identify the cutaneous findings in vitamin A deficiency  | K/S               | SH                     | Y           | Lecture, Small group discussion, Bedside clinic | Skill assessment/ Viva voce     |                                       | General Medicine, Pediatrics, Biochemistry |                           |
| DR17.2 | Enumerate and describe the various skin changes in Vitamin B complex deficiency  | K                 | KH                     | Y           | Lecture   | Written/ Viva voce              |                                       | General Medicine, Pediatrics, Biochemistry |                           |
| DR17.3 | Enumerate and describe the various changes in Vitamin C deficiency   | K                 | KH                     | Y           | Lecture   | Written/ Viva voce              |                                       | General Medicine, Pediatrics, Biochemistry |                           |
| DR17.4 | Enumerate and describe the various changes in Zinc deficiency  | K                 | KH                     | Y           | Lecture, Small group discussion                 | Written/ Viva voce              |                                       | General Medicine, Pediatrics, Biochemistry |                           |

**Anesthesiology**

| Number            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|-------------------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|---------------------------------|---------------------------|
| AS2.1             | Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates   | S                 | SH                     | N           | DOAP session                           | Skill assessment                |                                       | General Medicine,<br>Pediatrics |                           |
| <b>Psychiatry</b> |   |                   |                        |             |  |                                 |                                       |                                 |                           |
| PS14.1            | Enumerate and describe the magnitude and etiology of psychiatric disorders occurring in childhood and adolescence                             | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                      |                           |
| PS14.2            | Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence      | S                 | SH                     | Y           | Bedside clinic, DOAP session           | Skill assessment                |                                       | Pediatrics                      |                           |
| PS14.3            | Describe the treatment of stress related disorders including behavioural, psychosocial and pharmacologic therapy                              | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                      |                           |
| PS14.4            | Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment        | S                 | SH                     | Y           | Bedside clinic, DOAP session           | Skill assessment                |                                       | Pediatrics                      |                           |
| PS14.5            | Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders occurring in childhood and adolescence | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                      |                           |
| PS15.1            | Describe the aetiology and magnitude of mental retardation  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                      |                           |
| PS15.2            | Describe and discuss intelligence quotient and its measurement  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                      |                           |
| PS15.3            | Elicit and document a history and clinical examination and choose appropriate investigations in a patient with mental retardation             | K/S               | SH                     | Y           | Bedside clinic, DOAP session           | Skill assessment                |                                       | Pediatrics                      |                           |
| PS15.4            | Describe the psychosocial interventions and treatment used in mental retardation  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Pediatrics                      |                           |

| Number                             | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|------------------------------------|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|--------------------------|---------------------------|
| <b>General Medicine</b>            |   |                   |                        |             |  |                                 |                                       |                          |                           |
| IM23.1                             | Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses             | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.2                             | Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital  | K                 | KH                     | Y           | Lecture, Small group discussions       | Written/ Viva voce              |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.3                             | Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Biochemistry | Pediatrics                |
| IM23.4                             | Enumerate the indications for enteral and parenteral nutrition in critically ill patients   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       | Physiology, Biochemistry | Pediatrics                |
| <b>Obstetrics &amp; Gynecology</b> |   |                   |                        |             |  |                                 |                                       |                          |                           |
| OG1.2                              | Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and morbidity audit                         | K                 | KH                     | Y           | Lecture, Small group discussion        | Short notes                     |                                       | Community Medicine       | Pediatrics                |
| OG18.1                             | Describe and discuss the assessment of maturity of the newborn, diagnosis of birth asphyxia, principles of resuscitation, common problems   | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                          | Pediatrics                |
| OG18.2                             | Demonstrate the steps of neonatal resuscitation in a simulated environment  | S                 | SH                     | Y           | DOAP session                           | Skill assessment                |                                       |                          | Pediatrics                |
| OG18.3                             | Describe and discuss the diagnosis of birth asphyxia  | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                          | Pediatrics                |
| OG18.4                             | Describe the principles of resuscitation of the newborn and enumerate the common problems encountered                                       | K                 | KH                     | Y           | Lecture, Small group discussion        | Written/ Viva voce              |                                       |                          | Pediatrics                |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested Teaching<br>Learning methods               | Suggested Assessment<br>methods | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|-------------|--|---------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>Physical Medicine &amp; Rehabilitation</b> |   |                   |                        |             |  |                                 |                                       |                      |                           |
| PM3.1   | Describe and discuss the clinical features, types, evaluation, diagnosis and management of cerebral palsy   | K                 | KH                     | Y           | Lecture, Small group discussion                      | Written/ Viva voce              |                                       | Human Anatomy        | Pediatrics                |
| PM3.2   | Recognize, describe and discuss the spectrum of multiple disability : cognitive, motor, visual and hearing in cerebral palsy                              | K                 | KH                     | Y           | Lecture, Small group discussion                      | Written/ Viva voce              |                                       |                      | Pediatrics                |
| PM3.3   | Recognize, describe and discuss the role of special education in children with learning disabilities  | K                 | K                      | Y           | Lecture, Small group discussion                      | Written/ Viva voce              |                                       |                      | Pediatrics                |
| PM3.4   | Demonstrate spasticity, rigidity and dystonia in children with cerebral palsy   | S                 | SH                     | Y           | DOAP session, Small group discussion, Bedside clinic | Skill assessment                |                                       |                      | Pediatrics                |
| PM3.5   | Enumerate the indications and describe the therapies for spasticity including medications, serial casts, nerve blocks, botulinum toxin injections         | K                 | KH                     | Y           | Lecture, Small group discussion                      |                                 |                                       | Pharmacology         | Pediatrics, Orthopedics   |
| PM3.6   | Enumerate the indications and describe prevention of joint subluxations and contractures by proper positioning, and use of special chairs, and appliances | K                 | KH                     | Y           | DOAP session, Small group discussion, Bedside clinic |                                 |                                       |                      | Pediatrics                |
| PM3.7   | Enumerate the first aid measures to be used in patients with seizures   | K                 | K                      | Y           | Lecture, Small group discussion                      | Written/ Viva voce              |                                       |                      | Pediatrics                |
| PM4.2   | Describe and discuss the principles of management of chronic pain and role of common modalities (moist heat, ultrasound, Short wave diathermy)            | K                 | KH                     | Y           | Lecture, Small group discussion                      | Written/ Viva voce              |                                       |                      | Pediatrics                |

**PSYCHIATRY (CODE: PS)**

| Number                                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>PSYCHIATRY</b>                         |   |                                     |                        |               |   |                                |                                       |                      |                           |
| <b>Topic: Doctor patient relationship</b> |   | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS1.1                                     | Establish rapport and empathy with patients   | A/C                                 | SH                     | Y             | DOAP session  | Skill station                  |                                       |                      |                           |
| PS1.2                                     | Describe the components of communication  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS1.3                                     | Demonstrate breaking of bad news in a simulated environment   | A/C                                 | SH                     | Y             | DOAP session  | Skill station                  |                                       |                      |                           |
| PS1.4                                     | Describe and demonstrate the importance of confidentiality in patient encounters                            | A/C                                 | SH                     | Y             | DOAP session  | Faculty observation            |                                       |                      |                           |
| <b>Topic: Mental health</b>               |   | <b>Number of competencies: (05)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b>  |                                |                                       |                      |                           |
| PS2.1                                     | Define stress and describe its components and causes  | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS2.2                                     | Describe the role of time management, study skills, balanced diet and sleep wake habits in stress avoidance | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Viva voce                      |                                       |                      |                           |
| PS2.3                                     | Define and describe the principles and components of learning memory and emotions                           | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS2.4                                     | Describe the principles of personality development and motivation   | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS2.5                                     | Define and distinguish normality and abnormality  | K                                   | K                      | Y             | Lecture, Small group discussion                               | Viva voce                      |                                       |                      |                           |
| <b>Topic: Introduction to psychiatry</b>  |   | <b>Number of competencies: (12)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS3.1                                     | Describe the growth of psychiatry as a medical specialty, its history and contribution to society           | K                                   | KH                     | Y             | Lecture   | Written/ Viva voce             |                                       |                      |                           |



| Number                            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method           | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|-----------------------------------|---|-------------------------------------|------------------------|---------------|---|--|---------------------------------------|----------------------|---------------------------|
| PS3.2                             | Enumerate, describe and discuss important signs & symptoms of common mental disorders   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      |                           |
| PS3.3                             | Elicit, present and document a history in patients presenting with a mental disorder  | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment                         |                                       |                      |                           |
| PS3.4                             | Describe the importance of establishing rapport with patients   | S/A                                 | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment/<br>Faculty observation |                                       |                      |                           |
| PS3.5                             | Perform, demonstrate and document a minimal examination   | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment                         |                                       |                      |                           |
| PS3.6                             | Describe and discuss biological, psychological & social factors & their interactions in the causation of mental disorders     | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      |                           |
| PS3.7                             | Enumerate and describe common organic psychiatric disorders, magnitude, etiology and clinical features                        | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      | General Medicine          |
| PS3.8                             | Enumerate and describe the essential investigations in patients with organic psychiatric disorders                            | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      | General Medicine          |
| PS3.9                             | Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment                         |                                       |                      |                           |
| PS3.10                            | Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders                        | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      |                           |
| PS3.11                            | Enumerate the appropriate conditions for specialist referral in patients with psychiatric disorders                           | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      |                           |
| PS3.12                            | Describe, discuss and distinguish psychotic & non-psychotic (Mood, Anxiety, Stress related) disorders                         | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      |                           |
| <b>Topic: Psychotic disorders</b> |   | <b>Number of competencies: (07)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |  |                                       |                      |                           |
| PS4.1                             | Describe the magnitude and etiology of alcohol and substance use disorders  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                       |                                       |                      | General Medicine          |
| PS4.2                             | Elicit, describe and document clinical features of alcohol and substance use disorders  | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment                         |                                       |                      | General Medicine          |

| Number                            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|-----------------------------------|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS4.3                             | Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      | General Medicine          |
| PS4.4                             | Describe the treatment of alcohol and substance abuse disorders including behavioural and pharmacologic therapy               | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS4.5                             | Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment                         | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       | AETCOM               |                           |
| PS4.6                             | Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse                  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS4.7                             | Enumerate the appropriate conditions for specialist referral in patients with alcohol and substance abuse disorders           | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Psychotic disorders</b> |   | <b>Number of competencies: (06)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS5.1                             | Classify and describe the magnitude and etiology of schizophrenia & other psychotic disorders                                 | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS5.2                             | Enumerate, elicit, describe and document clinical features, positive s  | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS5.3                             | Describe the treatment of schizophrenia including behavioural and pharmacologic therapy                                       | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS5.4                             | Demonstrate family education in a patient with schizophrenia in a simulated environment                                       | K/S/A/C                             | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS5.5                             | Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia                                | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS5.6                             | Enumerate the appropriate conditions for specialist referral in patients with psychotic disorders                             | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Depression</b>          |   | <b>Number of competencies: (07)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |

| Number                          | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---------------------------------|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS6.1                           | Classify and describe the magnitude and etiology of depression  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS6.2                           | Enumerate, elicit, describe and document clinical features in patients with depression                    | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS6.3                           | Enumerate and describe the indications and interpret laboratory and other tests used in depression        | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS6.4                           | Describe the treatment of depression including behavioural and pharmacologic therapy                      | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS6.5                           | Demonstrate family education in a patient with depression in a simulated environment                      | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS6.6                           | Enumerate and describe the pharmacologic basis and side effects of drugs used in depression               | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS6.7                           | Enumerate the appropriate conditions for specialist referral in patients with depression                  | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Bipolar disorders</b> |   | <b>Number of competencies: (07)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS7.1                           | Classify and describe the magnitude and etiology of bipolar disorders                                     | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS7.2                           | Enumerate, elicit, describe and document clinical features in patients with bipolar disorders             | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS7.3                           | Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS7.4                           | Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy               | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS7.5                           | Demonstrate family education in a patient with bipolar disorders in a simulated environment               | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS7.6                           | Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders        | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS7.7  | Enumerate the appropriate conditions for specialist referral in patients with bipolar disorders                  | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Anxiety disorders</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>        |  |                   |                        |               |                                       |                                |                                       |                      |                           |
| PS8.1  | Enumerate and describe the magnitude and etiology of anxiety disorders   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| PS8.2  | Enumerate, elicit, describe and document clinical features in patients with anxiety disorders                    | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS8.3  | Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders        | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS8.4  | Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy                      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS8.5  | Demonstrate family education in a patient with anxiety disorders in a simulated environment                      | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS8.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS8.7  | Enumerate the appropriate conditions for specialist referral in anxiety disorders                                | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Stress related disorders</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |               |                                       |                                |                                       |                      |                           |
| PS9.1  | Enumerate and describe the magnitude and etiology of stress related disorders                                    | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| PS9.2  | Enumerate, elicit, describe and document clinical features in patients with stress related disorders             | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS9.3  | Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS9.4  | Describe the treatment of stress related disorders including behavioural and psychosocial therapy                | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| PS9.5  | Demonstrate family education in a patient with stress related disorders in a simulated environment               | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS9.6   | Enumerate and describe the pharmacologic basis and side effects of drugs used in stress related disorders                                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| PS9.7   | Enumerate the appropriate conditions for specialist referral in stress disorders  | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Somatoform disorders</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>  |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PS10.1  | Enumerate and describe the magnitude and etiology of somatoform, dissociative and conversion disorders                                    | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine          |
| PS10.2  | Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders             | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      | General Medicine          |
| PS10.3  | Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      | General Medicine          |
| PS10.4  | Describe the treatment of <b>somatoform</b> disorders including behavioural, psychosocial and pharmacologic therapy                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS10.5  | Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a simulated environment               | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS10.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders        | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS10.7  | Enumerate the appropriate conditions for specialist referral in patients with somato form dissociative and conversion disorders           | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Personality disorders</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PS11.1  | Enumerate and describe the magnitude and etiology of personality disorders  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| PS11.2  | Enumerate, elicit, describe and document clinical features in patients with personality disorders   | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS11.3  | Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders                 | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS11.4  | Describe the treatment of <b>personality</b> disorders including behavioural, psychosocial and pharmacologic therapy          | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS11.5  | Demonstrate family education in a patient with personality disorders in a simulated environment                               | S/A/C             | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS11.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders                        | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS11.7  | Enumerate the appropriate conditions for specialist referral  | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Psychosomatic disorders</b> <span style="margin-left: 200px;"><b>Number of competencies: (07)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PS12.1  | Enumerate and describe the magnitude and etiology of psychosomatic disorders  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine          |
| PS12.2  | Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      | General Medicine          |
| PS12.3  | Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders                    | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      | General Medicine          |
| PS12.4  | Describe the treatment of <b>psychosomatic</b> disorders including behavioural, psychosocial and pharmacologic therapy        | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         | General Medicine          |
| PS12.5  | Demonstrate family education in a patient with psychosomatic disorders in a simulated environment                             | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       |                      |                           |
| PS12.6  | Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders                      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS12.7  | Enumerate the appropriate conditions for specialist referral  | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>Topic: Psychosexual and gender identity disorders</b>         |  | <b>Number of competencies: (07)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS13.1   | Enumerate and describe the magnitude and etiology of psychosexual and gender identity disorders  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS13.2   | Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS13.3   | Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual and gender identity disorders               | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS13.4   | Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial and pharmacologic therapy               | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharmacology         |                           |
| PS13.5   | Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment                             | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       |                      |                           |
| PS13.6   | Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosexual and gender identity disorders                      | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS13.7   | Enumerate the appropriate conditions for specialist referral   | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Psychiatric disorders in childhood and adolescence</b> |  | <b>Number of competencies: (06)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS14.1   | Enumerate and describe the magnitude and etiology of psychiatric disorders occurring in childhood and adolescence                                | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pediatrics           |                           |
| PS14.2   | Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence         | S                                   | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       | Pediatrics           |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS14.3   | Describe the treatment of stress related disorders including behavioural, psychosocial and pharmacologic therapy                              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           |                           |
| PS14.4   | Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment        | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       | Pediatrics           |                           |
| PS14.5   | Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders occurring in childhood and adolescence | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           |                           |
| PS14.6   | Enumerate the appropriate conditions for specialist referral in children and adolescents with psychiatric disorders                           | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Mental retardation</b> <span style="float: right;">Number of competencies: (04 )</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>                  |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PS15.1   | Describe the aetiology and magnitude of mental retardation  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           |                           |
| PS15.2   | Describe and discuss intelligence quotient and its measurement  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           |                           |
| PS15.3   | Elicit and document a history and clinical examination and choose appropriate investigations in a patient with mental retardation             | K/S               | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       | Pediatrics           |                           |
| PS15.4   | Describe the psychosocial interventions and treatment used in mental retardation  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           |                           |
| <b>Topic: Psychiatric disorders in the elderly</b> <span style="float: right;">Number of competencies: (05)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PS16.1   | Enumerate and describe common psychiatric disorders in the elderly including dementia, depression and psychosis                               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine          |
| PS16.2   | Describe the aetiology and magnitude of psychiatric illness in the elderly  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| PS16.3   | Describe the therapy of psychiatric illness in elderly including psychosocial and behavioural therapy   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |



| Number                                | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|---------------------------------------|---|--------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PS16.4                                | Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment  | S                                    | SH                     | Y             | Bedside clinic, DOAP session                                  | Skill assessment               |                                       | General Medicine     |                           |
| PS16.5                                | Enumerate the appropriate conditions for specialist referral in psychiatric disorders in the elderly  | K                                    | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Psychiatric emergencies</b> |   | <b>Number of competencies: (03)</b>  |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS17.1                                | Enumerate and describe the recognition and clinical presentation of psychiatric emergencies (Suicide, Deliberate Self Harm, Violent behaviour)                      | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS17.2                                | Describe the initial stabilisation and management of psychiatric emergencies  | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS17.3                                | Enumerate the appropriate conditions for specialist referral in patients with psychiatric emergencies   | K                                    | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Therapeutics</b>            |   | <b>Number of competencies: (03 )</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS18.1                                | Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs in psychiatric disorders                                       | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pharamcology         |                           |
| PS18.2                                | Enumerate the indications for modified electroconvulsive therapy  | K                                    | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| PS18.3                                | Enumerate and describe the principles and role of psychosocial interventions in psychiatric illness including psychotherapy, behavioural therapy and rehabilitation | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Miscellaneous</b>           |   | <b>Number of competencies: (06)</b>  |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| PS19.1                                | Describe the relevance, role and status of community psychiatry   | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Community Medicine   |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                   | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| PS19.2  | Describe the objectives strategies and contents of the National Mental Health Act   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine                     |                           |
| PS19.3  | Describe and discuss the basic legal and ethical issues in psychiatry   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Forensic Medicine & Toxicology, AETCOM |                           |
| PS19.4  | Enumerate and describe the salient features of the prevalent mental health laws in India  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine                     |                           |
| PS19.5  | Describe the concept and principles of preventive psychiatry and mental health promotion (positive mental health); and community education            | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine                     |                           |
| PS19.6  | Enumerate and describe the identifying features and the principles of participatory management of mental illness occurring during and after disasters | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |  |                           |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |   |                   |                        |               |                                       |                                |                                       |  |                           |

### Integration

| Physiology   |  |   |    |   |                                 |                   |  |            |               |
|--------------|--|---|----|---|---------------------------------|-------------------|--|------------|---------------|
| PY10.7       | Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities | K | KH | Y | Lecture, Small group discussion | Written/Viva voce |  | Psychiatry | Human Anatomy |
| PY10.8       | Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production                             | K | KH | Y | Lecture, Small group discussion | Written/Viva voce |  | Psychiatry |               |
| PY10.9       | Describe and discuss the physiological basis of memory, learning and speech  | K | KH | Y | Lecture, Small group discussion | Written/Viva voce |  | Psychiatry |               |
| PY10.12      | Identify normal EEG forms  | S | S  | Y | Small group teaching            | OSPE/Viva voce    |  | Psychiatry |               |
| Pharmacology |  |   |    |   |                                 |                   |  |            |               |

| Number                                    | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration   | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|------------------------|---------------------------|
| PH1.19                                    | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, antipsychotic, antidepressant drugs, antimaniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, antiepileptics drugs) | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Psychiatry, Physiology |                           |
| PH1.20                                    | Describe the effects of acute and chronic ethanol intake. Describe the symptoms and management of methanol and ethanol poisonings  | K                 | KH                     | Y             | Lecture, Small group discussions      | Written/ Viva voce             |                                       | Psychiatry             |                           |
| PH1.22                                    | Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)   | K                 | KH                     | Y             | Lecture, Small group discussions      | Written/Viva voce              |                                       | Psychiatry             | Forensic Medicine         |
| PH1.23                                    | Describe the process and mechanism of drug deaddiction   | K/ S              | KH                     | Y             | Lecture, Small group discussions      | Written/Viva voce              |                                       | Psychiatry             |                           |
| PH5.5                                     | Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management   | K                 | KH                     | Y             | Small group discussion                | Short note/Viva voce           |                                       | Psychiatry             |                           |
| PH5.6                                     | Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs.  | A/C               | SH                     | Y             | Small group discussion                | Skill station                  |                                       | Psychiatry             |                           |
| <b>Community Medicine</b>                 |  |                   |                        |               |                                       |                                |                                       |                        |                           |
| CM15.1                                    | Define and describe the concept of mental Health   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry             |                           |
| CM15.2                                    | Describe warning signals of mental health disorder   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry             |                           |
| CM15.3                                    | Describe National Mental Health program  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry             |                           |
| <b>Forensic Medicine &amp; Toxicology</b> |  |                   |                        |               |                                       |                                |                                       |                        |                           |

| Number                  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                 | Horizontal<br>Integration |
|-------------------------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--------------------------------------|---------------------------|
| FM3.17                  | Describe and discuss the sexual perversions fetichism, transvestism, voyeurism, sadism, necrophagia, masochism, exhibitionism, frotteurism, Necrophilia                                      | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Psychiatry |                           |
| FM5.1                   | Classify common mental illnesses including post-traumatic stress disorder (PTSD)   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry                           |                           |
| FM5.2                   | Define, classify and describe delusions, hallucinations, illusion, lucid interval and obsessions with exemplification  | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry                           |                           |
| FM5.3                   | Describe civil and criminal responsibilities of a mentally ill person  | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry                           |                           |
| FM5.4                   | Differentiate between true insanity from feigned insanity  | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry                           |                           |
| FM5.5                   | Describe & discuss Delirium tremens  | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry, General Medicine         |                           |
| FM5.6                   | Describe the Indian Mental Health Act, 1987 with special reference to admission, care and discharge of a mentally ill person   | K                 | K/KH                   | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Psychiatry                           |                           |
| <b>General Medicine</b> |  |                   |                        |               |                                       |                                |                                       |                                      |                           |
| IM17.14                 | Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy   | A/C               | SH                     | N             | DOAP session                          | Skill Assessment               |                                       | Pharmacology                         | Psychiatry                |
| IM21.8                  | Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture                                      | K                 | KH                     | Y             | DOAP session                          | Skill assessment               |                                       | Forensic Medicine, Psychiatry        |                           |
| IM24.2                  | Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components   | S                 | SH                     | Y             | Bedside clinic, DOAP session          | Skill assessment               |                                       | Psychiatry                           |                           |
| IM24.5                  | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of depression in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                                      | Psychiatry                |

| Number            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>Integration |
|-------------------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| IM24.7            | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the elderly             | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| IM24.19           | Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on health   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| <b>Pediatrics</b> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| PE1.2             | Discuss and describe the patterns of growth in infants, children and Adolescents  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| PE1.3             | Discuss and describe the methods of assessment of growth including use of WHO and Indian national standards. Enumerate the parameters used for assessment of physical growth in infants, children and adolescents | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| PE1.5             | Define development and discuss the normal developmental milestones with respect to motor, behaviour, social, adaptive and language  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| PE5.4             | Describe the clinical features, diagnosis and management of Breath Holding spells   | K                 | K                      | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| PE5.5             | Describe the clinical features, diagnosis and management of Temper tantrums   | K                 | K                      | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| PE5.7             | Describe the clinical features, diagnosis and management of Fussy infant  | K                 | K                      | N             | Lecture, Small group discussion       | Written                        |                                       |                      | Psychiatry                |
| PE5.10            | Discuss the role of child guidance clinic in children with Behavioral problems and the referral criteria  | K                 | K                      | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |
| PE6.2             | Describe the physical , physiological and psychological changes during Adolescence (Puberty)  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Psychiatry                |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical integration                 | Horizontal<br>Integration    |
|---|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--------------------------------------|------------------------------|
| PE6.4   | Describe Adolescent sexuality and common problems related to it  | K                 | KH                     | N             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                                      | Psychiatry                   |
| PE6.5   | Explain Adolescent Nutrition and common nutritional problems   | K                 | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                                      | Psychiatry                   |
| PE6.6   | Discuss the common Adolescent Eating disorders ( Anorexia Nervosa, Bulimia)  | K                 | KH                     | N             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                                      | Psychiatry                   |
| PE6.7   | Describe the common mental health problems during Adolescence  | K                 | KH                     | Y             | Lecture, Small Group discussion                               | Written/ Viva voce             |                                       |                                      | Psychiatry                   |
| PE6.13  | Enumerate the prevalence and the importance of recognition of sexual drug abuse in adolescents and children  | K                 | K                      | N             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                                      | Psychiatry                   |
| <b>Physical Medicine &amp; Rehabilitation</b> |  |                   |                        |               |   |                                |                                       |                                      |                              |
| PM 9.1  | Describe rehabilitative aspects as they pertain to the elderly including patients with dementia, depression, incontinence immobility and nutritional needs   | K                 | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                                      | General Medicine, Psychiatry |
| <b>Dermatology, Venereology &amp; Leprosy</b> |  |                   |                        |               |   |                                |                                       |                                      |                              |
| DR9.7   | Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma  | K                 | KH                     | Y             | Lecture, Small group discussion                               | Written / Viva voce            |                                       | General Medicine                     | Pharmacology, Psychiatry     |
| <b>Forensic Medicine &amp; Toxicology</b>     |  |                   |                        |               |   |                                |                                       |                                      |                              |
| FM2.5   | Discuss moment of death, modes of death- coma, asphyxia and syncope  | K                 | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Psychiatry                           | Pathology                    |
| FM3.14  | <b>SEXUAL OFFENCES</b><br>Describe and discuss the examination of the victim of an alleged case of rape, and the preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic, DOAP session | Written/ Viva voce / OSCE      |                                       | Obstetrics & Gynaecology, Psychiatry |                              |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br><b>P</b> | Vertical integration                 | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---|--------------------------------|--|--------------------------------------|---------------------------|
| FM3.15 | SEXUAL OFFENCES<br>Describe and discuss examination of accused and victim of sodomy, preparation of report, framing of opinion, preservation and despatch of trace evidences in such cases  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic, DOAP session | Written/ Viva voce / OSCE      |  | Obstetrics & Gynaecology, Psychiatry |                           |
| FM3.16 | SEXUAL OFFENCES<br>Describe and discuss adultery and unnatural sexual offences- sodomy, incest, lesbianism, buccal coitus, bestiality, indecent assault and preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases | K                 | K/KH                   | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |  | Obstetrics & Gynaecology, Psychiatry |                           |

**DERMATOLOGY, VENEROLOGY AND LEPROSY (CODE: DR)**



| Number | COMPETENCY<br>The student should be able to | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|

## DERMATOLOGY, VENEREOLOGY & LEPROSY

|  |  |                                     |    |   |   |   |  |  |  |
|--|--|-------------------------------------|----|---|---|---|--|--|--|
| <b>Topic: Acne</b>                     |  | <b>Number of competencies:(03)</b>  |    |   | <b>Number of procedures that require certificaion:(NIL)</b> |   |  |  |  |
| DR1.1                                  | Enumerate the causative and risk factors of acne   | K                                   | K  | Y | Lecture, Small group discussion                             | Written/ Viva voce                      |  |  |  |
| DR1.2                                  | Identify and grade the various common types of acne  | S                                   | SH | Y | Bedside clinic  | Skill assessment                        |  |  |  |
| DR1.3                                  | Describe the treatment and preventive measures for various kinds of acne   | K                                   | K  | Y | Lecture, Small group discussion                             | Written/ Viva voce                      |  |  |  |
| <b>Topic: Vitiligo</b>                 |  | <b>Number of competencies: (02)</b> |    |   | <b>Number of procedures that require certificaion:(NIL)</b> |   |  |  |  |
| DR2.1                                  | Identify and differentiate vitiligo from other causes of hypopigmented lesions   | S                                   | S  | Y | Bedside clinic  | Skill assessment                        |  |  |  |
| DR2.2                                  | Describe the treatment of vitiligo   | K                                   | K  | Y | Lecture, Small group discussion                             | Written/ Viva voce                      |  |  |  |
| <b>Topic: Papulosquamous disorders</b> |  | <b>Number of competencies:(03)</b>  |    |   | <b>Number of procedures that require certificaion:(NIL)</b> |   |  |  |  |
| DR3.1                                  | Identify and distinguish psoriatic lesions from other causes   | K                                   | SH | Y | Bedside clinic  | Skill assessment/<br>Written/ Viva voce |  |  |  |
| DR3.2                                  | Demonstrate the grattage test  | S                                   | SH | Y | Bedside clinic  | Skill assessment                        |  |  |  |
| DR3.3                                  | Enumerate the indications for and describe the various modalities of treatment of psoriasis including topical, systemic and phototherapy | K                                   | KH | Y | Lecture, Small group discussion                             | Written/ Viva voce                      |  |  |  |
| <b>Topic: Lichen Planus</b>            |  | <b>Number of competencies:(02)</b>  |    |   | <b>Number of procedures that require certificaion:(NIL)</b> |   |  |  |  |
| DR4.1                                  | Identify and distinguish lichen planus lesions from other causes   | S                                   | SH | Y | Bedside clinic  | Skill assessment                        |  |  |  |

| Number                          | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration     |
|---------------------------------|--|--------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|-------------------------------|
| DR4.2                           | Enumerate and describe the treatment modalities for lichen planus  | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                               |
| <b>Topic: Scabies</b>           |  | <b>Number of competencies:(03)</b>   |                        |               | <b>Number of procedures that require certificaion:(NIL)</b>   |                                |                                       |                      |                               |
| DR5.1                           | Describe the etiology, microbiology, pathogenesis, natural history, clinical features, presentations and complications of scabies in adults and children | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pediatrics           |                               |
| DR5.2                           | Identify and differentiate scabies from other lesions in adults and children   | S                                    | SH                     | Y             | Bedside clinic  | Skill assessment               |                                       | Pediatrics           |                               |
| DR5.3                           | Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies for scabies  | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pediatrics           | Pharmacology                  |
| <b>Topic: Pediculosis</b>       |  | <b>Number of competencies : (02)</b> |                        |               | <b>Number of procedures that require certificaion:(NIL)</b>   |                                |                                       |                      |                               |
| DR6.1                           | Describe the etiology pathogenesis and diagnostic features of pediculosis in adults and children   | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pediatrics           | Microbiology                  |
| DR6.2                           | Identify and differentiate pediculosis from other skin lesions in adults and children  | S                                    | SH                     | Y             | Bedside clinic  | Skill assessment               |                                       | Pediatrics           |                               |
| <b>Topic: Fungal Infections</b> |  | <b>Number of competencies: (03)</b>  |                        |               | <b>Number of procedures that require certificaion:(NIL)</b>   |                                |                                       |                      |                               |
| DR7.1                           | Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of dermatophytes in adults and children             | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pediatrics           | Microbiology                  |
| DR7.2                           | Identify Candida species in fungal scrapings and KOH mount   | S                                    | SH                     | Y             | DOAP session  | Skill assessment               |                                       |                      | Microbiology                  |
| DR7.3                           | Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy                           | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | Microbiology,<br>Pharmacology |
| <b>Topic: Viral infections</b>  |  | <b>Number of competencies (07)</b>   |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                               |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| DR8.1  | Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin in adults and children | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pediatrics           | Microbiology              |
| DR8.2  | Identify and distinguish herpes simplex and herpes labialis from other skin lesions  | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      |                           |
| DR8.3  | Identify and distinguish herpes zoster and varicella from other skin lesions   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      |                           |
| DR8.4  | Identify and distinguish viral warts from other skin lesions   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      |                           |
| DR8.5  | Identify and distinguish molluscum contagiosum from other skin lesions   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      |                           |
| DR8.6  | Enumerate the indications, describe the procedure and perform a Tzanck smear   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      |                           |
| DR8.7  | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin           | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Pharmacology              |

**Topic: Leprosy**

**Number of competencies: (07)**

**Number of procedures that require certification:(NIL)**

|       |  |   |    |   |                                 |                                  |  |                  |                                     |
|-------|--|---|----|---|---------------------------------|----------------------------------|--|------------------|-------------------------------------|
| DR9.1 | Classify, describe the epidemiology, etiology, microbiology, pathogenesis, clinical presentations and diagnostic features of Leprosy | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce               |  | General Medicine | Microbiology,<br>Community Medicine |
| DR9.2 | Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination                 | S | SH | Y | Bedside clinic                  | Bedside clinic/ Skill assessment |  | General Medicine |                                     |
| DR9.3 | Enumerate the indications and observe the performance of a slit skin smear in patients with leprosy                                  | S | KH | Y | Bedside clinic, DOAP session    | Written/ Viva voce               |  |                  |                                     |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration        |
|--|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|----------------------------------|
| DR9.4  | Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pharmacology                     |
| DR9.5  | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pharmacology, Community Medicine |
| DR9.6  | Describe the treatment of Leprosy based on the WHO guidelines   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pharmacology, Community Medicine |
| DR9.7  | Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pharmacology, Psychiatry         |
| <b>Topic: Sexually Transmitted Diseases</b> <span style="margin-left: 200px;"><b>Number of competencies: (11)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification:(NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                                  |
| DR10.1   | Identify and classify syphilis based on the presentation and clinical manifestations  | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       | General Medicine     | Microbiology                     |
| DR10.2   | Identify spirochete in a dark ground microscopy   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      | Microbiology                     |
| DR10.3   | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Pharmacology, Microbiology       |
| DR10.4   | Describe the prevention of congenital syphilis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                                  |
| DR10.5   | Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease   | C                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       | General Medicine     |                                  |
| DR10.6   | Describe the etiology, diagnostic and clinical features of non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)                                      | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     | Microbiology                     |

| Number                              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                        | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration     | Horizontal<br>Integration  |
|-------------------------------------|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|--------------------------|----------------------------|
| DR10.7                              | Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)   | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       | General Medicine         | Microbiology               |
| DR10.8                              | Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV) | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine         | Pharmacology, Microbiology |
| DR10.9                              | Describe the syndromic approach to ulcerative sexually transmitted disease  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine         |                            |
| DR10.10                             | Describe the etiology, diagnostic and clinical features and management of gonococcal and non-gonococcal urethritis  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine         |                            |
| DR10.11                             | Describe the etiology, diagnostic and clinical features and management of vaginal discharge   | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | Obstetrics & Gynaecology |                            |
| <b>Topic: HIV</b>                   |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b> |                                |                                       |                          |                            |
| DR11.1                              | Describe the etiology, pathogenesis and clinical features of the dermatologic manifestations of HIV and its complications including opportunistic infections                                  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine         | Microbiology               |
| DR11.2                              | Identify and distinguish the dermatologic manifestations of HIV, its complications, opportunistic infections and adverse reactions  | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       | General Medicine         | Microbiology               |
| DR11.3                              | Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV   | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine         | Pharmacology, Microbiology |
| <b>Topic: Dermatitis and Eczema</b> |   | <b>Number of competencies: (07)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b> |                                |                                       |                          |                            |
| DR12.1                              | Describe the aetiopathogenesis of eczema  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       |                          |                            |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| DR12.2   | Identify eczema and differentiate it from lichenification and changes of aging  | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       |                      |                           |
| DR12.3   | Classify and grade eczema   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| DR12.4   | Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the treatment of eczema | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| DR12.5   | Define erythroderma. Enumerate and identify the causes of erythroderma. Discuss the treatment                                       | S                 | KH                     | Y             | Bedside clinic                        | Written/ Skill assessment      |                                       |                      |                           |
| DR12.6   | Identify and distinguish exfoliative dermatitis from other skin lesions   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       |                      |                           |
| DR12.7   | Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions                                   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       | General Medicine     | Pathology, Microbiology   |
| <b>Topic: Vesicubullous Lesions</b> <span style="float: right;">Number of competencies:(03)</span> <span style="float: right;">Number of procedures that require certificaion:(NIL)</span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| DR13.1   | Distinguish bulla from vesicles   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       |                      |                           |
| DR13.2   | Demonstrate the Tzanck test, nikolsky sign and bulla spread sign  | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       |                      |                           |
| DR13.3   | Calculate the body surface area of involvement of vesiculobullous lesions   | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       |                      |                           |
| <b>Topic: Urticaria Angioedema</b> <span style="float: right;">Number of competencies: (05)</span> <span style="float: right;">Number of procedures that require certificaion:(NIL)</span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| DR14.1   | Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Microbiology, Pathology   |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                        | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration  |
|---|--|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|----------------------------|
| DR14.2  | Identify and distinguish urticarial from other skin lesions  | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       |                      |                            |
| DR14.3  | Demonstrate dermographism  | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       |                      |                            |
| DR14.4  | Identify and distinguish angioedema from other skin lesions  | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       |                      |                            |
| DR14.5  | Enumerate the indications and describe the pharmacology indications and adverse reactions of drugs used in the urticaria and angioedema                | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       |                      | Pharmacology               |
| <b>Topic: Pyoderma</b>  |  | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b> |                                |                                       |                      |                            |
| DR15.1  | Identify and distinguish folliculitis impetigo and carbuncle from other skin lesions   | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       |                      |                            |
| DR15.2  | Identify staphylococcus on a gram stain  | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       |                      | Microbiology               |
| DR15.3  | Enumerate the indications and describe the pharmacology, indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Surgery      | Microbiology, Pharmacology |
| DR15.4  | Enumerate the indications for surgical referral  | S                                   | KH                     | Y             | DOAP session   | Written/ Viva voce             |                                       | General Surgery      |                            |
| <b>Topic: Collagen Vascular disease</b>                       |  | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b> |                                |                                       |                      |                            |
| <b>See also major competencies listed in General Medicine</b> |  |                                     |                        |               |  |                                |                                       |                      |                            |
| DR16.1  | Identify and distinguish skin lesions of SLE   | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       | General Medicine     | Pathology                  |

| Number  | COMPETENCY<br>The student should be able to                                     | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                        | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration                             | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|--|---------------------------|
| DR16.2  | Identify and distinguish Raynaud's phenomenon                                   | S                                   | SH                     | Y             | Bedside clinic   | Skill assessment               |                                       | General Medicine                                 | Pathology                 |
| <b>Topic: Nutritional Deficiencies and Skin</b> |   | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b> |                                |                                       |  |                           |
| DR17.1  | Enumerate and identify the cutaneous findings in vitamin A deficiency           | K/S                                 | SH                     | Y             | Lecture, Small group discussion, Bedside clinic              | Skill assessment/<br>Viva voce |                                       | General Medicine,<br>Pediatrics,<br>Biochemistry |                           |
| DR17.2  | Enumerate and describe the various skin changes in Vitamin B complex deficiency | K                                   | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       | General Medicine,<br>Pediatrics,<br>Biochemistry |                           |
| DR17.3  | Enumerate and describe the various changes in Vitamin C deficiency              | K                                   | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       | General Medicine,<br>Pediatrics,<br>Biochemistry |                           |
| DR17.4  | Enumerate and describe the various changes in Zinc deficiency                   | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine,<br>Pediatrics,<br>Biochemistry |                           |
| <b>Topic: Systemic diseases and the skin</b>    |   | <b>Number of competencies:(02)</b>  |                        |               | <b>Number of procedures that require certification:(NIL)</b> |                                |                                       |  |                           |
| DR18.1  | Enumerate the cutaneous features of Type 2 diabetes                             | K                                   | K                      | Y             | Lecture, Small group discussion                              | Written/ Viva voce             |                                       | General Medicine                                 |                           |
| DR18.2  | Enumerate the cutaneous features of hypo/hyper-thyroidism                       | K                                   | K                      | Y             | Lecture, Small group   | Written/ Viva voce             |                                       | General Medicine                                 |                           |

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.

Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,

Column F: DOAP session – Demonstrate, Observe, Assess, Perform.

Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation

## Integration



| Number               | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration               | Horizontal<br>Integration |
|----------------------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|------------------------------------|---------------------------|
| <b>Human Anatomy</b> |  |                   |                        |               |                                       |                                |                                       |                                    |                           |
| AN4.2                | Describe structure & function of skin with its appendages  | K                 | KH                     | Y             | Lecture, DOAP session                 | Written/ Viva voce             |                                       | Dermatology, Venereology & Leprosy |                           |
| AN4.4                | Describe modifications of deep fascia with its functions   | K                 | KH                     | Y             | Lecture, DOAP session                 | Written/ Viva voce             |                                       | Dermatology, Venereology & Leprosy |                           |
| AN4.5                | Explain principles of skin incisions   | K                 | KH                     | N             | Lecture                               | Written                        |                                       | Dermatology, Venereology & Leprosy |                           |
| <b>Pathology</b>     |  |                   |                        |               |                                       |                                |                                       |                                    |                           |
| PA34.1               | Describe the risk factors, pathogenesis, pathology and natural history of squamous cell carcinoma of the skin  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Dermatology, Venereology & Leprosy |                           |
| PA34.2               | Describe the risk factors, pathogenesis, pathology and natural history of basal cell carcinoma of the skin   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Dermatology, Venereology & Leprosy |                           |
| PA34.3               | Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors, morphology, clinical features and metastases of melanoma | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Dermatology, Venereology & Leprosy |                           |
| PA34.4               | Identify, distinguish and describe common tumors of the skin   | S                 | SH                     | N             | DOAP session                          | Skill Assessment               |                                       | Dermatology, Venereology & Leprosy |                           |

**Microbiology**

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---|---------------------------|
| MI4.3  | Describe the etio-pathogenesis of Skin and soft tissue infections and discuss the clinical course, and the laboratory diagnosis.                          | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Dermatology,<br>Venereology &<br>Leprosy, General<br>Surgery          |                           |
| MI7.2  | Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures, wherever relevant. | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       | Dermatology,<br>Venereology &<br>Leprosy, Obstetrics &<br>Gynaecology |                           |

#### Pharmacology

|        |  |   |    |   |         |                    |  |  |              |
|--------|--|---|----|---|---------|--------------------|--|--|--------------|
| PH1.46 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs | K | KH | Y | Lecture | Written/ Viva voce |  | Dermatology,<br>Venereology &<br>Leprosy | Microbiology |
| PH1.57 | Describe drugs used in skin disorders  | K | KH | Y | Lecture | Written/ Viva voce |  | Dermatology,<br>Venereology &<br>Leprosy |              |

#### Pediatrics

|        |                                       |   |    |  |                               |                  |  |  |  |
|--------|---------------------------------------|---|----|--|-------------------------------|------------------|--|--|--|
| PE31.4 | Identify Atopic dermatitis and manage | S | SH |  | Bedside clinics, Skill<br>Lab | Skill Assessment |  | Dermatology,<br>Venereology &<br>Leprosy |  |
|--------|---------------------------------------|---|----|--|-------------------------------|------------------|--|--|--|

**PHYSICAL MEDICINE & REHABILITATION (CODE: PM)**

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration     |
|---|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|-------------------------------|
| <b>PHYSICAL MEDICINE &amp; REHABILITATION</b>   |  |                                     |                        |               |   |                                |                                       |                      |                               |
| <b>Topic: Introduction to Physical Medicine</b> |  | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b>  |                                |                                       |                      |                               |
| PM1.1   | Define and describe the scope of physical Medicine and Rehabilitation and functional restoration                     | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                               |
| PM1.2   | Define and describe disability, its cause, and magnitude, identification and prevention of disability                | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics |
| PM1.3   | Define and describe the methods to identify and prevent disability   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics |
| PM1.4   | Enumerate the rights and entitlements of differently abled persons   | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics |
| <b>Topic: Cerebrovascular accident</b>          |  | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b>  |                                |                                       |                      |                               |
| PM2.1   | Describe the causes of disability in the patient with a cerebrovascular accident                                     | K                                   | KH                     | Y             | Lecture, small group discussion                               | Written/ Viva voce             |                                       | Human Anatomy        | General Medicine              |
| PM2.2   | Describe and discuss the treatment of rigidity and spasticity  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine              |
| PM2.3   | Describe and discuss the principles of early mobilizations, mobility aids and splints                                | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine              |
| PM2.4   | Describe and discuss the impact of co-morbidities on the rehabilitation of the patient with cerebrovascular accident | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine              |
| <b>Topic: Cerebral Palsy</b>                    |  | <b>Number ocompetencies: (07)</b>   |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                               |
| PM3.1   | Describe and discuss the clinical features, types, evaluation, diagnosis and management of cerebral palsy            | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Human Anatomy        | Pediatrics                    |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PM3.2  | Recognize, Describe and discuss the spectrum of multiple disability: cognitive, motor, visual and hearing in cerebral palsy                               | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       |                      | Pediatrics                |
| PM3.3  | Recognize describe and discuss the role of special education in children with learning disabilities   | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       |                      | Pediatrics                |
| PM3.4  | Demonstrate spasticity rigidity and dystonia in children with cerebral palsy  | S                 | SH                     | Y             | DOAP session, Small group discussion, Bedside clinic | Skill assessment               |                                       |                      | Pediatrics                |
| PM3.5  | Enumerate the indications and describe the therapies for spasticity including medications, serial casts, nerve blocks, botulinum toxin injections         | K                 | KH                     | Y             | Lecture, Small group discussion                      |                                |                                       | Pharmacology         | Pediatrics, Orthopedics   |
| PM3.6  | Enumerate the indications and describe prevention of joint subluxations and contractures by proper positioning, and use of special chairs, and appliances | K                 | KH                     | Y             | DOAP session, Small group discussion, Bedside clinic |                                |                                       |                      | Pediatrics                |
| PM3.7  | Enumerate the first aid measures to be used in patients with seizures   | K                 | K                      | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       |                      | Pediatrics                |

**Topic: Musculoskeletal system**

**Number of competencies : (05)**

**Number of procedures that require certification: (NIL)**

|       |  |   |    |   |                                 |                    |  |  |                               |
|-------|--|---|----|---|---------------------------------|--------------------|--|--|-------------------------------|
| PM4.1 | Describe the common patterns, clinical features, investigations, diagnosis and treatment of common causes of arthritis                         | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  | General Medicine, Orthopedics |
| PM4.2 | Describe and discuss the principles of management of chronic pain and role of common modalities (moist heat, ultrasound, Short wave diathermy) | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  | Pediatrics                    |
| PM4.3 | Observe in a mannequin or equivalent the administration of an intra-articular injection  | S | KH | N | DOAP session                    | Skill assessment   |  |  | Orthopedics                   |
| PM4.4 | Describe the role of exercise as a therapeutic modality  | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  |                               |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration        |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|----------------------------------|
| PM4.5   | Demonstrate correct assessment of muscle strength and range of movements  | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic       | Skill assessment               |                                       |                      | General Medicine,<br>Orthopedics |
| <b>Topic: Amputation</b> <span style="margin-left: 200px;"><b>Number of competencies : (04)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span>               |   |                   |                        |               |                                       |                                |                                       |                      |                                  |
| PM5.1   | Enumerate the indications and describe the principles of amputation   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       |                      | Orthopedics, General<br>Surgery  |
| PM5.2   | Describe the principles of early mobilization, evaluation of the residual limb, contralateral limb and the influence of co-morbidities                                | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       |                      | Orthopedics                      |
| PM5.3   | Demonstrate the correct use of crutches in ambulation and postures to correct contractures and deformities  | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic       | Skill assessment               |                                       |                      | Orthopedics                      |
| PM5.4   | Identify the correct prosthesis for common amputations  | S                 | SH                     | Y             | DOAP session                          | Skill assessment<br>written    |                                       |                      | Orthopedics                      |
| <b>Topic: Lower motor neuron lesion</b> <span style="margin-left: 200px;"><b>Number of competencies :(04)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                                  |
| PM6.1   | Perform and demonstrate a clinical examination of sensory and motor deficits of peripheral nerve  | S                 | SH                     | Y             | Bedside clinic                        | Skill assessment               |                                       |                      | General Medicine                 |
| PM6.2   | Enumerate the indications and describe the principles of nerve conduction velocity and EMG  | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       |                      | General Medicine                 |
| PM6.3   | Describe the principles principles of skin traction, serial casts and surgical treatment including contracture release, tendon transfer, osteotomies and arthrodesis. | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       |                      | Orthopedics                      |
| PM6.4   | Describe the principles of orthosis for ambulation in PPRP  | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       |                      | Orthopedics                      |
| <b>Topic: Spinal injury</b> <span style="margin-left: 200px;"><b>Number of competencies:(09)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span>              |   |                   |                        |               |                                       |                                |                                       |                      |                                  |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration     |
|--------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|-------------------------------|
| PM7.1  | Describe and discuss the clinical features, diagnostic work up and management of spinal cord injury   | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       |                      | Orthopedics                   |
| PM7.2  | Describe and demonstrate process of transfer, application of collar restraints while maintaining airway and prevention of secondary injury in a mannequin/model | S                 | SH                     | Y             | DOAP session, Small group discussion, Bedside clinic | Skill assessment               |                                       |                      | Orthopedics                   |
| PM7.3  | Perform and demonstrate a correct neurological examination in a patient with spinal injury and determine the neurologic level of injury                         | S                 | SH                     | Y             | Bed side clinic                                      | Skill assessment               |                                       |                      | Orthopedics                   |
| PM7.4  | Assess bowel and bladder function and identify common patterns of bladder dysfunction   | S                 | KH                     | Y             | Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics |
| PM7.5  | Enumerate the indications and identify the common mobility aids and appliances, wheel chairs  | S                 | S                      | Y             | DOAP session   | Skill assessment /Viva voce    |                                       |                      | Orthopedics                   |
| PM7.6  | Enumerate the indications and describe the pharmacology and side effects of commonly used drugs in neuropathic bladder  | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       | Pharmacology         | General Medicine              |
| PM7.7  | Enumerate and describe common life threatening complications following SCI like Deep vein Thrombosis, Aspiration Pneumonia, Autonomic dysreflexia               | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics |
| PM7.8  | Enumerate the causes of, describe and classify Pressure Sores,their prevention, and treatment.  | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       |                      | General Surgery               |
| PM7.9  | Enumerate the indications of debridement, and Split thickness skin grafting.  | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce             |                                       |                      | General Surgery               |

**Topic: Traumatic brain injury (TBI)**

**Number of competencies:(05)**

**Number of procedures that require certification: (NIL)**

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration                      |
|---|--|------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|--|
| PM8.1   | Describe the clinical features, evaluation, diagnosis and management of disability following traumatic brain injury  | K                                  | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics, General Surgery |
| PM8.2   | Describe and discuss cognitive dysfunction like deficits in attention, memory and communication.   | K                                  | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine                               |
| PM8.3   | Describe and discuss common behavior and mood changes following TBI.   | K                                  | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine                               |
| PM8.4   | Describe metabolic co-morbidities like SIADH, diabetes mellitus, insipidus and endocrine dysfunction following TBI   | K                                  | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine                               |
| PM8.5   | Describe the vocational opportunities and community based rehabilitation following TBI   | K                                  | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine                               |
| <b>Topic: Geriatrics</b>  |  | <b>Number of competencies:(01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |  |
| PM 9.1  | Describe rehabilitative aspects as they pertain to the elderly including patients with dementia, depression, incontinence immobility and nutritional needs | K                                  | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      | General Medicine, Psychiatry                   |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |  |                                    |                        |               |   |                                |                                       |                      |  |

## Integration

| General Medicine |   |   |    |   |                                 |                    |  |  |   |
|------------------|---|---|----|---|---------------------------------|--------------------|--|--|---|
| IM18.16          | Enumerate the indications, describe and observe the multidisciplinary rehabilitation of patients with a CVA   | S | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  | Physical Medicine & Rehabilitation              |
| IM24.13          | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  | Orthopedics, Physical Medicine & Rehabilitation |



| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/S<br>H/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration                       |
|---------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---|
| IM24.16 | Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Orthopedics, Physical Medicine & Rehabilitation |

**Pediatrics**

|       |  |   |    |   |   |                    |  |  |                                    |
|-------|--|---|----|---|---|--------------------|--|--|------------------------------------|
| PE3.8 | Discuss the etio-pathogenesis, clinical presentation and multi-disciplinary approach in the management of Cerebral palsy | K | KH | Y | Lecture, Small group discussion, Bed side clinics | Written/ Viva voce |  |  | Physical Medicine & Rehabilitation |
|       |  |   |    |   |   |                    |  |  |                                    |

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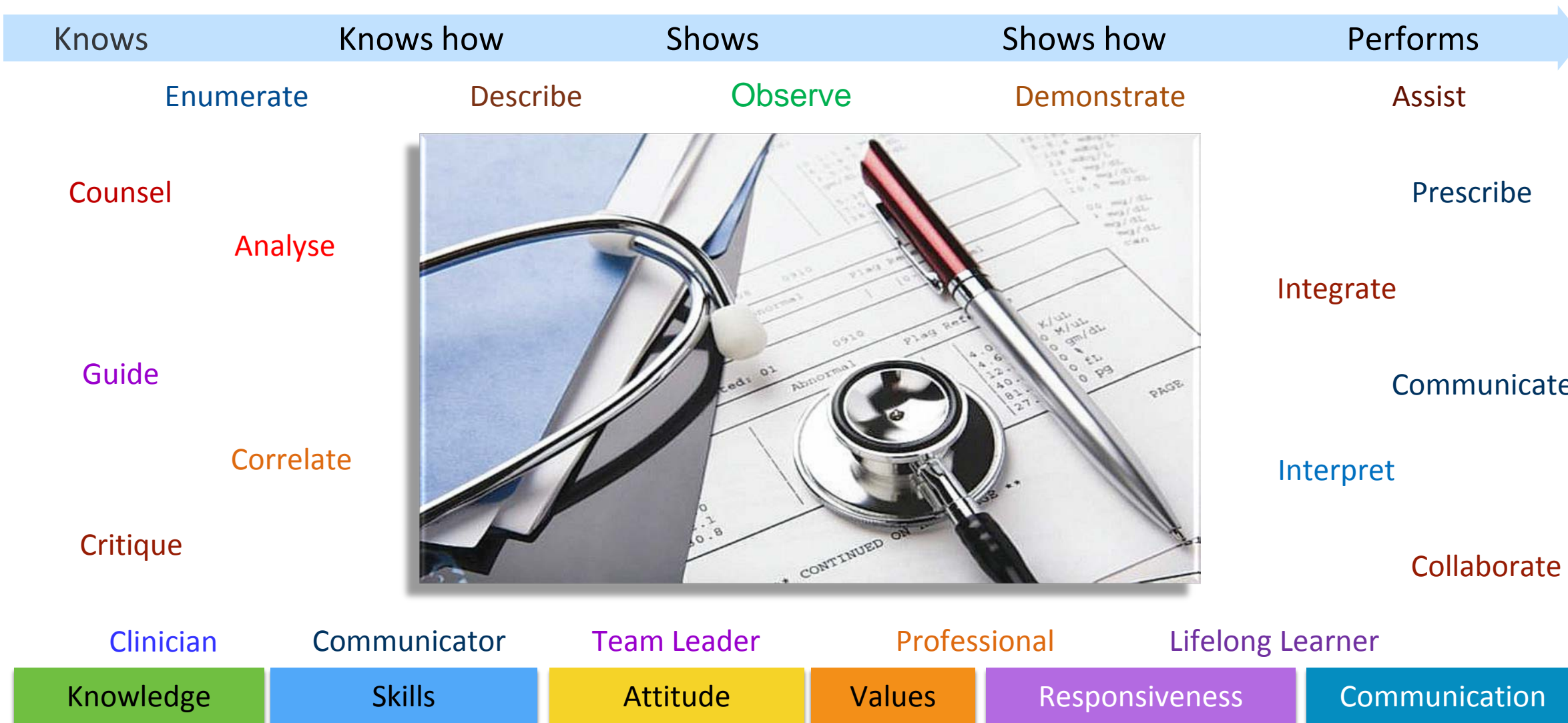
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# MEDICAL COUNCIL OF INDIA

## COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE



VOLUME-III (2018)



**COMPETENCY BASED UNDERGRADUATE CURRICULUM  
FOR THE  
INDIAN MEDICAL GRADUATE**

**2018**



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### BOARD OF GOVERNORS IN SUPERSESSION OF MEDICAL COUNCIL OF INDIA

#### FOREWORD

The Medical Council of India, aware of its responsibilities in creation of trained health manpower, has been engaged for the past few years in updating the medical curriculum for undergraduates and postgraduates to be in consonance with the changing health needs of the country. The task of updating and reorganization of the postgraduate curriculum in nearly 50 broad specialty disciplines to the competency pattern was accomplished by the Academic Cell of the Council with the help of subject experts and members of its Reconciliation Board and have been uploaded on the Council Website for use of the medical fraternity.

The Council visualized that the Indian Medical Graduate, at the end of the undergraduate training program, should be able to recognize "health for all" as a national goal and should be able to fulfill his/her societal obligations towards the realization of this goal. To fulfill the mandate of the undergraduate medical curriculum which is to produce a clinician, who understands and is able to provide preventive, promotive, curative, palliative and holistic care to his patients, the curriculum must enunciate clearly the competencies the student must be imparted and must have learnt, with clearly defined teaching-learning strategies and effective methods of assessment. The student should be trained to effectively communicate with patients and their relatives in a manner respectful of the patient's preferences, values, beliefs, confidentiality and privacy and to this purpose, a book on Attitude, Ethics & Communication was prepared by the Medical Council of India; the teaching faculty of medical colleges have been receiving training on this module since 2015.

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-2-

Competency based Medical Education provides an effective outcome-based strategy where various domains of teaching including teaching learning methods and assessment form the framework of competencies. Keeping this objective as the core ingredient, the Medical Council of India with the help of panel of experts drawn from across the country, laid the basic framework for the revised undergraduate medical curriculum. Over the past four years, a group of highly committed medical professionals working as Members of the MCI Reconciliation Board developed this information into a document incorporating appropriate teaching-learning strategies, tools and techniques of teaching, and modes of assessment which have culminated in the current competency based undergraduate curriculum. We understand that maximum efforts were made to encourage integrated teaching between traditional subject areas using a problem-based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both the understanding and resolution of the problem. All efforts have been made to de-emphasize compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases. We are proud of their work accomplishment and congratulate them in the onerous task accomplished.

It gives us great satisfaction to state that the '**competency based undergraduate curriculum**' that has been prepared by the Medical Council of India would definitely serve the cause of medical education and in creating a competent Indian Medical Graduate to serve the community.

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# **COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE**

## **Preamble**

The new Graduate Medical Education Regulations attempts to stand on the shoulder of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to take the learner to provide health care to the evolving needs of the nation and the world.

More than twenty years have passed since the existing Regulations on Graduate Medical Education, 1997 was notified, necessitating a relook at all aspects of the various components in the existing regulations and adapt them to the changing demography, socio-economic context, perceptions, values and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration. The strong and forward looking fundamentals enshrined in the Regulations on Graduate Medical Education, 1997 has made this job easier. A comparison between the 1997 Regulations and proposed Graduate Medical Education Regulations, 2018 will reveal that the 2018 Regulations have evolved from several key principles enshrined in the 1997 Regulations.

The thrust in the new regulations is continuation and evolution of thought in medical education making it more learner-centric, patient-centric, gender-sensitive, outcome -oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using “broad competencies”; instead, the reports have written end of phase subject (sub) competencies. These “sub-competencies” can be mapped to the global competencies in the Graduate Medical Education Regulations.

A significant attempt has been made in the outcome driven undergraduate curriculum to provide the orientation and the skills necessary for life-long learning to enable proper care of the patient. In particular, the curriculum provides for early clinical exposure, electives and longitudinal care. Skill acquisition is an indispensable component of the learning process in medicine. The curriculum reinforces this aspect by necessitating certification of certain essential skills. The experts and the writing group have factored in patient availability, access, consent, number of students in a class etc. in suggesting skill acquisition and assessment methods; use of skills labs, simulated and guided environments are encouraged. In the pre-internship years,- the highest level of skill acquisition is a show how (SH) in a simulated or guided environment; few skills require independent performance and certification - these are marked with P (for performance). Opportunity to 'perform' these skills will be available during internship.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated curriculum time in the form of a longitudinal program based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter-disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought, social and economic position and gender.

In addition to the above, an attempt has been made to allow students from diverse educational streams and backgrounds to transition appropriately through a Foundation Course. Dedicated time has been allotted for self directed learning and co-curricular activities.

Formative and internal assessments have been streamlined to achieve the objectives of the curriculum. Minor tweaks to the summative assessment have been made to reflect evolving thought and regulatory requirements. Curricular governance and support have been strengthened, increasing the involvement of Curriculum Committee and Medical Education Departments/Units.

The curriculum document in conjunction with the new Graduate Medical Education Regulations (GMR), when notified, must be seen as a "living document" that should evolve as stakeholder requirements and aspirations change. We hope that the current GMR does just that. The Medical Council of India is

grateful to all the teachers, subject experts, process experts, patients, students and trainees who have contributed through invaluable inputs, intellectual feedbacks and valuable time spent to make this possible. This document would not have been possible without the dedicated and unstinting intellectual, mental and time-consuming efforts of the members of the Reconciliation Board of the Council and the Academic Cell of MCI.

## How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created by subject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. They must be used with reference to and in the context of the Regulations.

### Section 1

#### Competencies for the Indian Medical Graduate

**Section 1** - provides the global competencies extracted from the Graduate Medical Education Regulations, 2018. The global competencies identified as defining the roles of the **Indian Medical Graduate** are the broad competencies that the learner has to aspire to achieve; teachers and curriculum planners must ensure that the learning experiences are aligned to this Manual.

#### Extract from the Graduate Medical Education Regulations, 2018

##### 2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an “Indian Medical Graduate” (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed:-

## **2.1. National Goals**

At the end of undergraduate program, the Indian Medical Graduate should be able to:

- (a) recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.
- (b) learn every aspect of National policies on health and devote herself/himself to its practical implementation.
- (c) achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- (d) develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- (e) become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

## **2.2. Institutional Goals**

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should:

- (a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.
- (b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
- (c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.
- (d) be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

- (e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
- (f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:
  - (i) Family Welfare and Maternal and Child Health (MCH);
  - (ii) Sanitation and water supply;
  - (iii) Prevention and control of communicable and non-communicable diseases;
  - (iv) Immunization;
  - (v) Health Education;
  - (vi) Indian Public Health Standards (IPHS) at various level of service delivery;
  - (vii) Bio-medical waste disposal; and
  - (viii) Organizational and or institutional arrangements.
- (g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.
- (h) be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
- (i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
- (j) be competent to work in a variety of health care settings.
- (k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.



All efforts must be made to equip the medical graduate to acquire the skills as detailed in Table 11 Certifiable procedural skills – A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate, as given in the Graduate Medical Education Regulations, 2018

### **2.3. Goals for the Learner**

In order to fulfil this goal, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

- 2.3.1. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- 2.3.2. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.
- 2.3.3. Communicator with patients, families, colleagues and community.
- 2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.
- 2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

### **3. Competency Based Training Programme of the Indian Medical Graduate**

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

#### **3.1. *Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion***

- 3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- 3.1.2. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
- 3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

- 3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- 3.1.5. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.6. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- 3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- 3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- 3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- 3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- 3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
  - i) Disease prevention,
  - ii) Health promotion and cure,
  - iii) Pain and distress alleviation, and
  - iv) Rehabilitation and palliation.

- 3.1.13 Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.
- 3.1.14 Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.
- 3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

**3.2. *Leader and member of the health care team and system***

- 3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- 3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- 3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- 3.2.4 Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- 3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- 3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

**3.3. *Communicator with patients, families, colleagues and community***

- 3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- 3.3.2 Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- 3.3.3 Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making.

**3.4. Lifelong learner committed to continuous improvement of skills and knowledge**

3.4.1. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4. Demonstrate ability to search (including through electronic means), and critically reevaluate the medical literature and apply the information in the care of the patient.

3.4.5. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

**3.5. *Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession***

3.5.1. Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2. Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3. Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4. Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5. Demonstrate a commitment to the growth of the medical profession as a whole.

## Section 2

### Subject-wise outcomes

Section 2 contains subject-wise outcomes so called “sub-competencies” that must be achieved at the end of instruction in that subject. These are organised in tables and have two parts. The core subject outcomes are in first part. The second part in the same document (titled Integration) contains outcomes/competencies in other subjects which have been identified by experts in those subjects as requiring alignment or integration with the core subject.

Outcomes (competencies) in each subject are grouped according to topics number-wise. It is important to review the individual outcomes (competencies) in the light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified. The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’ indicates independent performance without supervision and is required rarely in the pre-internship period. The outcome is a core (Y - must achieve) or a non-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under the section “definitions used in this document”. The suggested number of times a skill must be performed independently for certification in the learner’s log book is also given. Last two columns indicate subjects within the same phase and other phases with which the topic can be taught - together - aligned (temporal coordination), shared, correlated or nested.

The number of topics and competencies in each subject are given below:

## **Topics & outcomes in Pre-clinical & Para-clinical subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                           | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|---|-------------------------|---------------------------|
| 1.             | <b>Human Anatomy</b>                      | 82                      | 409                       |
| 2.             | <b>Physiology</b>                         | 11                      | 137                       |
| 3.             | <b>Biochemistry</b>                       | 11                      | 89                        |
| 4.             | <b>Pharmacology</b>                       | 05                      | 85                        |
| 5.             | <b>Pathology</b>                          | 36                      | 182                       |
| 6.             | <b>Microbiology</b>                       | 08                      | 54                        |
| 7.             | <b>Forensic Medicine &amp; Toxicology</b> | 14                      | 162                       |
|                | <b>Total</b>                              | <b>167</b>              | <b>1118</b>               |

## **Topics & outcomes in Medicine and Allied subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                               | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|---|-------------------------|---------------------------|
| <b>1.</b>      | <b>Community Medicine</b>                     | 20                      | 107                       |
| <b>2.</b>      | <b>General Medicine</b>                       | 26                      | 506                       |
| <b>3.</b>      | <b>Respiratory Medicine</b>                   | 02                      | 47                        |
| <b>4.</b>      | <b>Pediatrics</b>                             | 35                      | 406                       |
| <b>5.</b>      | <b>Psychiatry</b>                             | 19                      | 117                       |
| <b>6.</b>      | <b>Dermatology, Venereology &amp; Leprosy</b> | 18                      | 73                        |
| <b>7.</b>      | <b>Physical Medicine &amp; Rehabilitation</b> | 09                      | 43                        |
|                | <b>Total</b>                                  | <b>129</b>              | <b>1299</b>               |

## **Topics & outcomes in Surgery and Allied subjects**

| <b>Sr. No.</b> | <b>Subjects</b>                     | <b>Number of topics</b> | <b>Number of outcomes</b> |
|----------------|-------------------------------------|-------------------------|---------------------------|
| <b>1.</b>      | <b>General Surgery</b>              | 30                      | 133                       |
| <b>2.</b>      | <b>Ophthalmology</b>                | 09                      | 60                        |
| <b>3.</b>      | <b>Otorhinolaryngology</b>          | 04                      | 76                        |
| <b>4.</b>      | <b>Obstetrics &amp; Gynaecology</b> | 38                      | 126                       |
| <b>5.</b>      | <b>Orthopedics</b>                  | 14                      | 39                        |
| <b>6.</b>      | <b>Anesthesiology</b>               | 10                      | 46                        |
| <b>7.</b>      | <b>Radiodiagnosis</b>               | 01                      | 13                        |
| <b>8.</b>      | <b>Radiotherapy</b>                 | 05                      | 16                        |
| <b>9.</b>      | <b>Dentistry</b>                    | 05                      | 23                        |
|                | <b>Total</b>                        | <b>116</b>              | <b>532</b>                |



## **Section 3**

### **Sample topics used for alignment & integration**

Section 3 contains a sample selection of topics that run across the phases which can be used for alignment and integration. These are suggestions and institutions can select their own set of topics which can run across phases.

It is important to design the curriculum with a view to ensure with several broad outcomes in mind: a) achievement of the broad competencies by the learner at the end of the MBBS program, b) retain the subject - wise character of learning and assessment and ensure that phase-wise subject outcomes are met and assessed, c) teaching topics that are similar together thereby reducing redundancy and allowing the learner to integrate the concept as the most important step in integration (alignment or temporal coordination) (see document on integration), and d) align learning and assessment experiences to the outcome and the level of achievement specified.

## **Understanding the competencies table**

## Understanding the competencies table

| A  | B   | C      | D         | E    | F                                  | G                           | H                           | I                    | J                      |
|--|---|--------|-----------|------|------------------------------------|-----------------------------|-----------------------------|----------------------|------------------------|
| No.                                      | Competencies  | Domain | K/KH/SH/P | Core | Suggested Teaching Learning Method | Suggested Assessment method | No. required to certify (P) | Vertical Integration | Horizontal Integration |
| <b>Physiology</b>                        |   |        |           |      |                                    |                             |                             |                      |                        |
| <b>Summary</b>                           |   |        |           |      |                                    |                             |                             |                      |                        |
| Name of Topic: <b>General Physiology</b> |   |        |           |      |                                    |                             |                             |                      |                        |
| Number of Competencies: <b>(08)</b>      |   |        |           |      |                                    |                             |                             |                      |                        |
| PY1.1                                    | Describe the structure and functions of a                                     | K      | KH        | Y    | Lectures, Small group discussion   | Written/Viva                |                             |                      | Biochemistry           |
| IM15.4                                   | Elicit <i>document</i> and present a medical history that helps delineate the | S      | SH        | Y    | Bed Side clinic, DOAP              | Skill assessment            |                             | Community Medicine   |                        |

Description of competency

Unique number of the competency. First two alphabets represent the subject (see list); number following alphabet reflects topic number, following period is a running number.

Identifies the domain or domains addressed  
K - Knowledge  
S - Skill  
A - Attitude  
C - Communication

Identifies the level of competency required based on the Miller's pyramid  
K - Knows  
KH - Knows How  
S - Skill  
SH - Show How  
P - Perform independently

Identifies if the competency is core or desirable.  
Y indicates Core; N-non-core

Identifies the suggested learning method.  
DOAP - Demonstrate (by Student) Observe, Assist Perform

Identifies the suggested assessment method  
Skill assessment - Clinics, Skills lab, Practicals etc.

no of times a skill needs to be done independently to be certified for independent performance; Rarely used in UG

Subject (s) in the same phase with which the competency can be horizontally integrated or aligned to allow a more wholesome understanding

Subject (s) in other phases with which the competency can be vertically integrated to increase relevance or improve basic understanding

\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

## **Deriving learning objectives from competencies**

## Deriving learning objectives from competencies

|    |   |  |
|----|---|--|
| K  | Knows   | A knowledge attribute – Usually enumerates or describes  |
| KH | Knows how                                     | A higher level of knowledge – is able to discuss or analyse  |
| S  | Shows   | A skill attribute: is able to identify or demonstrate the steps  |
| SH | Shows how                                     | A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour   |
| P  | Performs (under supervision or independently) | Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results |

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

|         |  |
|---------|--|
| PA42.1* | At the end of the session the <b>phase II student</b> must be able to enumerate the most common causes of meningitis correctly                                 |
| PA42.2* | At the end of the session the <b>phase II student</b> must be able to enumerate the components of CSF analysis correctly                                       |
| PA42.3* | At the end of the session the <b>phase II student</b> must be able to <b>describe</b> the CSF features for a given etiology of meningitis <b>accurately</b>    |
| PA42.4* | At the end of the session the <b>phase II student</b> must be able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> |

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

**\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

## **Deriving learning methods from competencies**

## Deriving learning methods from competencies

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|         |   |  |
|---------|---|--|
| PA42.1* | At the end of the session the <b>Phase II student</b> must be able to enumerate the most common causes of meningitis <b>correctly</b>                           | Lecture → small group discussion                             |
| PA42.2* | At the end of the session the <b>Phase II student</b> must be able to enumerate the components of a CSF analysis <b>correctly</b>                               | Related objectives can be combined into one teaching session |
| PA42.3* | At the end of the session the <b>Phase II student</b> must be able to <b>describe</b> the CSF features for a given etiologic of meningitis <b>accurately</b>    |  |
| PA42.4* | At the end of the session the <b>Phase II student</b> must the able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> | small group discussion, practical session                    |

\*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

## **Deriving assessment methods from competencies**



## Deriving assessment methods from competencies-1

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|         |   |     |    |   |
|---------|---|-----|----|---|
| PA42.3* | Identify the etiology of meningitis based on given CSF parameters | K/S | SH | Y |
|---------|---|-----|----|---|

**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|         |  |   |
|---------|--|---|
| PA42.1* | At the end of the session the <del>Phase I</del> <b>Phase II student</b> must be able to enumerate the most common causes of meningitis correctly              | Short note or part of structured essay: Enumerate 5 causes of meningitis based on their prevalence in India   |
| PA42.2* | At the end of the session the <b>Phase II student</b> must be able to enumerate the components of a CSF analysis correctly                                     | Short note or part of structured essay: Enumerate the components tested in a CSF analysis   |
| PA42.3* | At the end of the session the <b>Phase II student</b> must be able to <b>describe</b> the CSF features for a given aetiology of meningitis <b>accurately</b>   | Short note or part of structured essay:<br>Describe the CSF findings that are characteristic of tuberculous meningitis  |
| PA42.4* | At the end of the session the <b>Phase II student</b> must be able to identify the aetiology of meningitis correctly from a <b>given set of CSF parameters</b> | Short note / part of the structured essay/ Skill station/ Viva voce<br>Review the CSF findings in the following patient and identify (write or vocalise) the most likely etiology |

\* Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document

## Deriving assessment methods from competencies-2

**Competency:** An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

|        |  |   |    |   |                                    |                       |          |           |
|--------|--|---|----|---|------------------------------------|-----------------------|----------|-----------|
| MI2.4* | List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia. | K | KH | Y | Didactic<br>Small group discussion | Written/<br>Viva voce | Medicine | Pathology |
|--------|--|---|----|---|------------------------------------|-----------------------|----------|-----------|

↓  
**Objective:** Statement of what a learner should be able to do at the end of a specific learning experience

|        |  |
|--------|--|
| MI2.1* | Enumerate the common microbial agents causing anaemia                                  |
| MI2.2* | Describe the morphology of agent (1,2 etc)   |
| MI2.3* | Describe the mode of infection of agent in humans                                      |
| MI2.4* | Discuss the pathogenesis of anemia caused by agent                                     |
| MI2.5* | Describe the clinical course of infection by agent                                     |
| MI2.6* | Enumerate the diagnostic tests to identify the aetiology of agent as a cause of anemia |
| MI2.7* | Discuss the methods to prevent infection by agent                                      |
| MI2.8* | Describe the treatment of infection by agent   |

Integrate concept - not necessarily teachers  
Plan session with teachers of both subjects -teachers from both subjects usually not needed. Ensure redundancy and duplication by reviewing both subjects



Horizontally aligned and integrated with pathology

Vertically integrated with General Medicine



Integrate concept - not necessarily teachers Plan session with teachers from both phases. Make a decision on how much of the information needs to be brought down to this phase to make it relevant. Consider how a competency can ascend over phases: for eg. - can be at a KH -( know how) in phase II but becomes SH in phase III. For vertical integration with clinical subjects, use of a case to link the concept (a well written paper, case is sufficient). Using teachers from both phases is rarely required

# The concept of integration

## Concept of integration used in the Manual

*Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application.* The GMR 2018 applies these principles to the extent that will retain the strengths of silo - based education and assessment while providing experiences that will allow learners to integrate concepts.

Keeping this in mind, the Regulations recommend temporal coordination as described by Harden (called alignment in this document) as the major method to be followed allowing similar topics in different subjects to be thought separately but during the same time frame (Figure 1a ).

In a small proportion - not to exceed 20% of the total curriculum an attempt can be made to Share (Figure 1b) topics or Correlate (Figure 1c) topics by using an integration session. The integration session most preferred will be a case based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed. Care must be taken to ensure that achievement phase - based objectives are given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary.

As much as possible the necessary correlates from other phases must also be introduced while discussing a topic in a given subject - Nesting (Figure 1d) (Harden). Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year.

Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the learner has internalized and integrated the concept and its application.

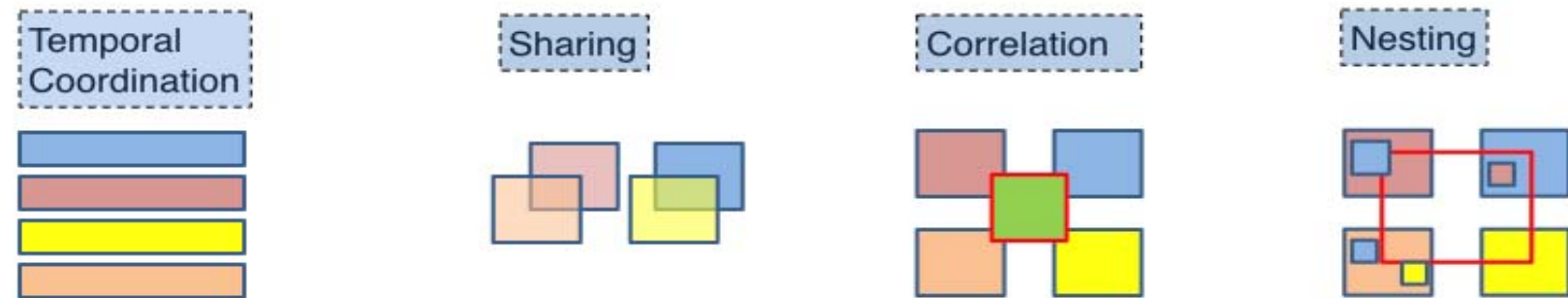


Figure 1 : Integration concepts framed in the GMR. Coloured boxes represent subjects. 1 a. Temporal coordination: The timetable is adjusted so that topics within the subjects or disciplines which are related, are scheduled at the same time. b. Sharing: Two disciplines may agree to plan and jointly implement a teaching program c. Correlation: the emphasis remains on disciplines or subjects with subject-based courses taking up most of the curriculum time. Within this framework, an integrated teaching session or course is introduced in addition to the subject-based teaching (green box with red border) d. Nesting: the teacher targets, within a subject-based course, skills relating to other subjects. Adapted from Harden R Med Edu 2000. 34; 551

## Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve.

In other words: Where do you want to go? or What do you want to become?

2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.

In other words: What should you have? or What should have changed?

3. **Objective:** Statement of what a learner should be able to do at the end of a specific learning experience.

In other words: What the Indian Medical Graduate should know, do, or behave.

### Action Verbs used in this manual

| Knowledge     | Skill                     | Attitude/communicate         |
|---------------|---------------------------|------------------------------|
| Enumerate     | Identify                  | Counsel                      |
| List          | Demonstrate               | Inform                       |
| Describe      | Perform under supervision | Demonstrate understanding of |
| Discuss       | Perform independently     |                              |
| Differentiate | Document                  |                              |
| Define        | Present                   |                              |
| Classify      | Record                    |                              |
| Choose        | Interpret                 |                              |
| Elicit        |                           |                              |
| Report        |                           |                              |

**Note:**

1. Specified essential competencies only will be required to be performed independently at the end of the final year MBBS.
2. The word 'perform' or 'do' is used ONLY if the task has to be done on patients or in laboratory practical in the pre/para- clinical phases.
3. Most tasks that require performance during undergraduate years will be performed under supervision.
4. If a certification to perform independently has been done, then the number of times the task has to be performed under supervision will be indicated in the last column.

## Explanation of terms used in this manual

|  |   |
|--|---|
| Lecture  | Any instructional large group method including traditional lecture and interactive lecture  |
| Small group discussion                                       | Any instructional method involving small groups of students in an appropriate learning context  |
| DOAP (Demonstration- Observation - Assistance - Performance) | A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently                              |
| Skill assessment   | A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands |
| Core   | A competency that is necessary in order to complete the requirements of the subject (traditional must know)   |
| Non-Core   | A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know)   |
| National Guidelines  | Health programs as relevant to the competency that are part of the National Health Program  |

### Domains of learning

|   |               |
|---|---------------|
| K | Knowledge     |
| S | Skill         |
| A | Attitude      |
| C | Communication |

### Levels of competency

|    |   |  |
|----|---|--|
| K  | Knows   | A knowledge attribute - Usually enumerates or describes  |
| KH | Knows how                                     | A higher level of knowledge - is able to discuss or analyze  |
| S  | Shows   | A skill attribute: is able to identify or demonstrate the steps  |
| SH | Shows how                                     | A skill attribute: is able to interpret/ demonstrate a complex procedure requiring thought, knowledge and behavior   |
| P  | Performs (under supervision or independently) | Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results |

**Note:**

In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able to SH - Show how - an informed consent is obtained - it is presumed that the preceding steps - the knowledge, the analytical skills, the skill of communicating have all been obtained.

It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified.

# **Volume III**

## **Competency based Undergraduate Curriculum in Surgery and Allied subjects**



**GENERAL SURGERY (CODE: SU)**

| Number                                     | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|--------------------------|---------------------------|
| <b>GENERAL SURGERY</b>                     |   |                                     |                        |               |   |                                |                                       |                          |                           |
| <b>Topic: Metabolic response to injury</b> |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                          |                           |
| SU1.1                                      | Describe Basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.                      | K                                   | KH                     | Y             | Lecture, Bed side clinic, Small group discussion              | Written/ Viva voce             |                                       | Physiology, Biochemistry |                           |
| SU1.2                                      | Describe the factors that affect the metabolic response to injury.  | K                                   | KH                     | Y             | Lecture, Bed side clinic, Small group discussion              | Written/ Viva voce             |                                       | Biochemistry             |                           |
| SU1.3                                      | Describe basic concepts of perioperative care.  | K                                   | KH                     | Y             | Lecture, Bed side clinic, Small group discussion              | Written/ Viva voce             |                                       |                          |                           |
| <b>Topic: Shock</b>                        |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                          |                           |
| SU2.1                                      | Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring. | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pathology, Physiology    |                           |
| SU2.2                                      | Describe the clinical features of shock and its appropriate treatment.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                          |                           |
| SU2.3                                      | Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care     | A/C                                 | SH                     | Y             | DOAP session  | Skill assessment               |                                       | AETCOM                   |                           |
| <b>Topic: Blood and blood components</b>   |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                          |                           |
| SU3.1                                      | Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion.            | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pathology                |                           |
| SU3.2                                      | Observe blood transfusions.   | S                                   | SH                     | Y             | Small group discussion, DOAP session                          | Skills assessment/ Log book    |                                       |                          |                           |

| Number                                     | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|--------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| SU3.3                                      | Counsel patients and family/ friends for blood transfusion and blood donation.  | A/C                                  | SH                     | Y             | DOAP session  | Skills assessment              |                                       |                      |                           |
| <b>Topic: Burns</b>                        |   | <b>Number of competencies: (04 )</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| SU4.1                                      | Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns. | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Physiology           |                           |
| SU4.2                                      | Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.                               | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| SU4.3                                      | Discuss the Medicolegal aspects in burn injuries.   | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| SU4.4                                      | Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.             | A /C                                 | SH                     | Y             | Small group discussion, Role play, Skills assessment          | Viva voce                      |                                       |                      |                           |
| <b>Topic: Wound healing and wound care</b> |   | <b>Number of competencies: (04 )</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| SU5.1                                      | Describe normal wound healing and factors affecting healing.  | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Pathology            |                           |
| SU5.2                                      | Elicit, document and present a history in a patient presenting with wounds.   | C                                    | SH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| SU5.3                                      | Differentiate the various types of wounds, plan and observe management of wounds.   | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| SU5.4                                      | Discuss medico legal aspects of wounds  | K                                    | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration                     | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|---|---|---------------------------------------|--|---------------------------|
| <b>Topic: Surgical infections</b> <span style="float: right;">Number of competencies: (02)      Number of procedures that require certification: (NIL)</span>              |  |                   |                        |               |   |   |                                       |  |                           |
| SU6.1  | Define and describe the aetiology and pathogenesis of surgical Infections  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                      |                                       | Microbiology                             |                           |
| SU6.2  | Enumerate Prophylactic and therapeutic antibiotics<br>Plan appropriate management  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                      |                                       |  |                           |
| <b>Topic: Surgical Audit and Research</b> <span style="float: right;">Number of competencies: (02)      Number of procedures that require certification: (NIL)</span>      |  |                   |                        |               |   |   |                                       |  |                           |
| SU7.1  | Describe the Planning and conduct of Surgical audit  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                      |                                       | Community Medicine                       |                           |
| SU7.2  | Describe the principles and steps of clinical research in General Surgery  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                      |                                       | Community Medicine                       |                           |
| <b>Topic: Ethics</b> <span style="float: right;">Number of competencies: (03)      Number of procedures that require certification: (NIL)</span>                           |  |                   |                        |               |   |   |                                       |  |                           |
| SU8.1  | Describe the principles of Ethics as it pertains to General Surgery  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce/<br>Skill assessment | -                                     | Forensic Medicine,<br>AETCOM             |                           |
| SU8.2  | Demonstrate Professionalism and empathy to the patient undergoing General Surgery  | A/C               | SH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce/<br>Skill assessment |                                       | Forensic Medicine,<br>AETCOM             |                           |
| SU8.3  | Discuss Medico-legal issues in surgical practice   | A/C               | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce/<br>Skill assessment |                                       | Forensic Medicine,<br>AETCOM             |                           |
| <b>Topic: Investigation of surgical patient</b> <span style="float: right;">Number of competencies (03)      Number of procedures that require certification: (NIL)</span> |  |                   |                        |               |   |   |                                       |  |                           |
| SU9.1  | Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient | C                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce                      |                                       | Biochemistry,<br>Microbiology, Pathology |                           |





| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method               | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|---|--|---------------------------------------|----------------------|---------------------------|
| <b>Topic: Basic Surgical Skills</b>              |   | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |  |                                       |                      |                           |
| SU14.1   | Describe Aseptic techniques, sterilization and disinfection.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                           |                                       | Microbiology         |                           |
| SU14.2   | Describe Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.                       | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                           |                                       |                      |                           |
| SU14.3   | Describe the materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)             | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                           |                                       |                      |                           |
| SU14.4   | Demonstrate the techniques of asepsis and suturing in a simulated environment   | S                                   | SH                     | Y             | DOAP session  | Skill assessment/ Log book                   |                                       |                      |                           |
| <b>Topic: Biohazard disposal</b>                 |   | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |  |                                       |                      |                           |
| SU15.1   | Describe classification of hospital waste and appropriate methods of disposal.  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                           |                                       | Microbiology         |                           |
| <b>Topic: Minimally invasive General Surgery</b> |   | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |  |                                       |                      |                           |
| SU16.1   | Minimally invasive General Surgery: Describe indications advantages and disadvantages of Minimally invasive General Surgery | K                                   | K                      | Y             | Lecture, Demonstration, Bedside clinic, Discussion            | Theory/ Practical / Orals/Written/ Viva voce |                                       |                      |                           |
| <b>Topic: Trauma</b>                             |   | <b>Number of competencies: (10)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |  |                                       |                      |                           |
| SU17.1   | Describe the Principles of FIRST AID  | S                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                           |                                       |                      |                           |
| SU17.2   | Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment                        | S                                   | SH                     | Y             | DOAP session  | Skill assessment                             |                                       |                      | Anaesthesiology           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| SU17.3  | Describe the Principles in management of mass casualties   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| SU17.4  | Describe Pathophysiology, mechanism of head injuries   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| SU17.5  | Describe clinical features for neurological assessment and GCS in head injuries  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| SU17.6  | Chose appropriate investigations and discuss the principles of management of head injuries   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| SU17.7  | Describe the clinical features of soft tissue injuries. Chose appropriate investigations and discuss the principles of management. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| SU17.8  | Describe the pathophysiology of chest injuries.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| SU17.9  | Describe the clinical features and principles of management of chest injuries.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| SU17.10 | Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment.    | S                 | SH                     | Y             | DOAP session                          | Skill assessment/ Log book     |                                       |                      | Anaesthesiology           |

**Topic: Skin and subcutaneous tissue**

**Number of competencies: (03)**

**Number of procedures that require certification: (NIL)**

|        |   |   |    |   |  |   |  |  |  |
|--------|---|---|----|---|--|---|--|--|--|
| SU18.1 | Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections.   | K | KH | Y | Lecture, Small group Discussion                      | Written/ Viva voce                      |  |  |  |
| SU18.2 | Classify skin tumors<br>Differentiate different skin tumors and discuss their management.   | K | KH | Y | Lecture, Small group discussion                      | Written/ Viva voce/<br>Skill assessment |  |  |  |
| SU18.3 | Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan. | S | SH | Y | Bedside clinic, Small group discussion, DOAP session | Skill assessment                        |  |  |  |



| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>Topic: Developmental anomalies of face, mouth and jaws</b>    |  | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| SU19.1   | Describe the etiology and classification of cleft lip and palate   | K                                   | KH                     | Y             | Lecture, Small group<br>Discussion                            | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| SU19.2   | Describe the Principles of reconstruction of cleft lip and palate  | K                                   | KH                     | Y             | Lecture, Small group<br>Discussion                            | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| <b>Topic: Oropharyngeal cancer</b>                               |  | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| SU20.1   | Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer.                                   | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       | ENT                  |                           |
| SU20.2   | Enumerate the appropriate investigations and discuss the Principles of treatment.                                      | K                                   | K                      | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Disorders of salivary glands</b>                       |  | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| SU21.1   | Describe surgical anatomy of the salivary glands, pathology, and clinical presentation of disorders of salivary glands | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| SU21.2   | Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands      | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Endocrine General Surgery: Thyroid and parathyroid</b> |  | <b>Number of competencies: (06)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| SU22.1   | Describe the applied anatomy and physiology of thyroid   | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| SU22.2   | Describe the etiopathogenesis of thyroidal swellings   | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       | Pathology            |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| SU22.3   | Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management | S                 | SH                     | Y             | Bedside clinic                                 | Skill assessment               |                                       |                      |                           |
| SU22.4   | Describe the clinical features, classification and principles of management of thyroid cancer  | K                 | KH                     | Y             | Lecture, Small group discussion                | Written/ Viva voce             |                                       |                      |                           |
| SU22.5   | Describe the applied anatomy of parathyroid  | K                 | KH                     | Y             | Lecture, Small group discussion                | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| SU22.6   | Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management                        | K                 | KH                     | Y             | Lecture, Small group discussion                | Written/ Viva voce             |                                       |                      | General Medicine          |
| <b>Topic: Adrenal glands</b> <span style="margin-left: 200px;"><b>Number of competencies: (03)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |               |  |                                |                                       |                      |                           |
| SU23.1   | Describe the applied anatomy of adrenal glands   | K                 | KH                     | Y             | Lecture, Small group discussion                | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| SU23.2   | Describe the etiology, clinical features and principles of management of disorders of adrenal gland  | K                 | KH                     | Y             | Lecture, Small group discussion                | Written/ Viva voce             |                                       |                      | General Medicine          |
| SU23.3   | Describe the clinical features, principles of investigation and management of Adrenal tumors   | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce             |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|---|---|---------------------------------------|----------------------|---------------------------|
| <b>Topic: Pancreas</b>   |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |   |                                       |                      |                           |
| SU24.1   | Describe the clinical features, principles of investigation, prognosis and management of pancreatitis.                                    | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       | Human Anatomy        |                           |
| SU24.2   | Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumours                     | K                                   | KH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                      |                                       |                      |                           |
| SU24.3   | Describe the principles of investigation and management of Pancreatic disorders including pancreatitis and endocrine tumors.              | K                                   | KH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |
| <b>Topic: Breast</b>   |   | <b>Number of competencies: (05)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |   |                                       |                      |                           |
| SU25.1   | Describe applied anatomy and appropriate investigations for breast disease  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce/<br>Skill assessment |                                       | Human Anatomy        |                           |
| SU25.2   | Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |
| SU25.3   | Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.   | K                                   | KH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/<br>Skill assessment |                                       | Radiodiagnosis       |                           |
| SU25.4   | Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast                                       | A/ C                                | SH                     | Y             | DOAP session  | Skill assessment                        |                                       |                      |                           |
| SU25.5   | Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent                                  | S                                   | SH                     | Y             | DOAP session  | Skill assessment                        |                                       |                      |                           |
| <b>Topic: Cardio-thoracic General Surgery- Chest - Heart and Lungs</b> |   | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |   |                                       |                      |                           |
| SU26.1   | Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases            | K                                   | K                      | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                      |                           |

| Number                          | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N)                       | Suggested Teaching<br>Learning method             | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P                         | Vertical Integration | Horizontal<br>Integration |
|---------------------------------|---|-------------------|------------------------|-------------------------------------|---|---|---|----------------------|---------------------------|
| SU26.3                          | Describe the clinical features of mediastinal diseases and the principles of management   | K                 | K                      | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce                      |   |                      |                           |
| SU26.4                          | Describe the etiology, pathogenesis, clinical features of tumors of lung and the principles of management                           | K                 | K                      | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce                      |   |                      |                           |
| <b>Topic: Vascular diseases</b> |   |                   |                        |                                     |   |   |   |                      |                           |
|                                 |   |                   |                        | <b>Number of competencies: (08)</b> |   |   | <b>Number of procedures that require certification: (NIL)</b> |                      |                           |
| SU27.1                          | Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.         | K                 | KH                     | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce/<br>Skill assessment |   |                      |                           |
| SU27.2                          | Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease         | S                 | SH                     | Y                                   | DOAP session                                      | Skill assessment                        |   |                      |                           |
| SU27.3                          | Describe clinical features, investigations and principles of management of vasospastic disorders                                    | K                 | KH                     | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce                      |   |                      |                           |
| SU27.4                          | Describe the types of gangrene and principles of amputation   | K                 | KH                     | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce/<br>Skill assessment |   |                      |                           |
| SU27.5                          | Describe the applied anatomy of venous system of lower limb   | K                 | K                      | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce                      |   |                      |                           |
| SU27.6                          | Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins                  | K                 | KH                     | Y                                   | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/<br>Skill assessment |   |                      |                           |
| SU27.7                          | Describe pathophysiology, clinical features, investigations and principles of management of Lymph edema, lymphangitis and Lymphomas | K                 | KH                     | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce/<br>Skill assessment |   |                      |                           |
| SU27.8                          | Demonstrate the correct examination of the lymphatic system   | S                 | SH                     | Y                                   | DOAP session,<br>Bedside clinic                   | Skill assessment                        |   |                      |                           |
| <b>Topic: Abdomen</b>           |   |                   |                        |                                     |   |   |   |                      |                           |
|                                 |   |                   |                        | <b>Number of competencies: (18)</b> |   |   | <b>Number of procedures that require certification: (NIL)</b> |                      |                           |
| SU28.1                          | Describe pathophysiology, clinical features, Investigations and principles of management of Hernias                                 | K                 | KH                     | Y                                   | Lecture, Small group discussion                   | Written/ Viva voce/<br>Skill assessment |   |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                 | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration         | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|---|---|---------------------------------------|------------------------------|---------------------------|
| SU28.2  | Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.   | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic                       | Skill assessment                        |                                       |                              |                           |
| SU28.3  | Describe causes, clinical features, complications and principles of management of peritonitis   | K                 | K                      | Y             | Lecture, Small group<br>discussion,<br>Bedside clinic | Written/ Viva voce                      |                                       |                              |                           |
| SU28.4  | Describe pathophysiology, clinical features, investigations and principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors                            | K                 | K                      | Y             | Lecture, Small group<br>discussion,<br>Demonstration  | Written/ Viva voce                      |                                       |                              |                           |
| SU28.5  | Describe the applied Anatomy and physiology of esophagus  | K                 | K                      | Y             | Lecture, Small group<br>discussion,<br>Demonstration  | Written/ Viva voce                      |                                       | Human Anatomy,<br>Physiology |                           |
| SU28.6  | Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus  | K                 | K                      | Y             | Lecture, Small group<br>discussion,<br>Demonstration  | Written/ Viva voce                      |                                       |                              |                           |
| SU28.7  | Describe the applied anatomy and physiology of stomach  | K                 | KH                     | Y             | Lecture, Small group<br>discussion                    | Written/ Viva voce                      |                                       | Human Anatomy                |                           |
| SU28.8  | Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach | K                 | KH                     | Y             | Lecture, Small group<br>discussion                    | Written/ Viva voce/<br>Skill assessment |                                       |                              |                           |
| SU28.9  | Demonstrate the correct technique of examination of a patient with disorders of the stomach   | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic                       | Skill assessment                        |                                       |                              |                           |
| SU28.10 | Describe the applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumors of the liver      | K                 | KH                     | Y             | Lecture, Small group<br>discussion,<br>Demonstration  | Written/ Viva voce                      |                                       | Human Anatomy                |                           |
| SU28.11 | Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis - prophylaxis | K                 | KH                     | Y             | Lecture, Small group<br>discussion,<br>Demonstration  | Written/ Viva voce                      |                                       | Human Anatomy                |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|--|---|---------------------------------------|----------------------|---------------------------|
| SU28.12  | Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system                   | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration       | Written/ Viva voce                      |                                       | Human Anatomy        |                           |
| SU28.13  | Describe the applied anatomy of small and large intestine   | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration       | Written/ Viva voce                      |                                       | Human Anatomy        |                           |
| SU28.14  | Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration       | Written/ Viva voce                      |                                       |                      |                           |
| SU28.15  | Describe the clinical features, investigations and principles of management of diseases of Appendix including appendicitis and its complications.                           | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration       | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |
| SU28.16  | Describe applied anatomy including congenital anomalies of the rectum and anal canal  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration       | Written/ Viva voce/<br>Skill assessment |                                       | Human Anatomy        |                           |
| SU28.17  | Describe the clinical features, investigations and principles of management of common anorectal diseases  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration       | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |
| SU28.18  | Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan                                    | S                 | SH                     | Y             | Bedside clinic, DOAP session, Small group discussion | Skill assessment                        |                                       |                      |                           |
| <b>Topic: Urinary System</b> <span style="margin-left: 200px;"><b>Number of competencies: (11)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |               |  |   |                                       |                      |                           |
| SU29.1   | Describe the causes, investigations and principles of management of Hematuria   | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       |                      |                           |
| SU29.2   | Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system   | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       | Human Anatomy        |                           |

| Number                                  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------------------------|------------------------|---------------|---|---|---------------------------------------|----------------------|---------------------------|
| SU29.3                                  | Describe the Clinical features, Investigations and principles of management of urinary tract infections                    | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       | Microbiology         |                           |
| SU29.4                                  | Describe the clinical features, investigations and principles of management of hydronephrosis                              | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                      |                           |
| SU29.5                                  | Describe the clinical features, investigations and principles of management of renal calculi                               | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                      |                           |
| SU29.6                                  | Describe the clinical features, investigations and principles of management of renal tumours                               | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                      |                           |
| SU29.7                                  | Describe the principles of management of acute and chronic retention of urine  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                      |                           |
| SU29.8                                  | Describe the clinical features, investigations and principles of management of bladder cancer                              | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                      |                           |
| SU29.9                                  | Describe the clinical features, investigations and principles of management of disorders of prostate                       | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |
| SU29.10                                 | Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent                                      | S                                   | SH                     | Y             | DOAP session  | Skill assessment                        |                                       |                      |                           |
| SU29.11                                 | Describe clinical features, investigations and management of urethral strictures   | K                                   | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration             | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |
| <b>Topic: Penis, Testis and scrotum</b> |  | <b>Number of competencies: (06)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |   |                                       |                      |                           |
| SU30.1                                  | Describe the clinical features, investigations and principles of management of phimosis, paraphimosis and carcinoma penis. | K                                   | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration             | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method          | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| SU30.2   | Describe the applied anatomy clinical features, investigations and principles of management of undescended testis.   | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       | Human Anatomy        |                           |
| SU30.3   | Describe the applied anatomy clinical features, investigations and principles of management of epididymo-orchitis  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       | Human Anatomy        |                           |
| SU30.4   | Describe the applied anatomy clinical features, investigations and principles of management of varicocele  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       | Human Anatomy        |                           |
| SU30.5   | Describe the applied anatomy, clinical features, investigations and principles of management of Hydrocele  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       | Human Anatomy        |                           |
| SU30.6   | Describe classification, clinical features, investigations and principles of management of tumours of testis   | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| <p><b>Column C: K- Knowledge, S – Skill , A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |  |                   |                        |               |  |                                      |                                       |                      |                           |
| <b>Integration</b>   |  |                   |                        |               |  |                                      |                                       |                      |                           |
| <b>Human Anatomy</b>   |  |                   |                        |               |  |                                      |                                       |                      |                           |
| AN6.3  | Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN9.2  | Breast-Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast | K                 | KH                     | Y             | Practical, Lecture                             | Written/ Viva voce                   |                                       | General Surgery      |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| AN10.4  | Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage   | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       | General Surgery      |                           |
| AN10.6  | Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN10.7  | Explain anatomical basis of enlarged axillary lymph nodes  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN11.3  | Describe the anatomical basis of Venepuncture of cubital veins   | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                   |                                       | General Surgery      |                           |
| AN12.8  | Describe anatomical basis of Claw hand   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Surgery      |                           |
| AN12.10 | Explain infection of fascial spaces of palm  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN12.11 | Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions                  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN12.12 | Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN12.13 | Describe the anatomical basis of Wrist drop  | K                 | KH                     | Y             | Lecture  | Written/Viva voce                    |                                       | General Surgery      |                           |
| AN12.14 | Identify & describe compartments deep to extensor retinaculum  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN15.3  | Describe and demonstrate boundaries, floor, roof and contents of femoral triangle  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration                | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------------------|---------------------------|
| AN15.4 | Explain anatomical basis of Psoas abscess & Femoral hernia  | K                 | KH                     | N             | Lecture, DOAP session                                    | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN16.2 | Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections   | K                 | KH                     | Y             | Lecture, DOAP session                                    | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN16.3 | Explain the anatomical basis of Trendelenburg sign  | K                 | KH                     | Y             | Lecture, DOAP session                                    | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN18.3 | Explain the anatomical basis of foot drop   | K                 | KH                     | Y             | Lecture, DOAP session                                    | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN19.3 | Explain the concept of "Peripheral heart"   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN20.4 | Explain anatomical basis of enlarged inguinal lymph nodes   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN20.5 | Explain anatomical basis of varicose veins and deep vein thrombosis   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN20.9 | Identify & demonstrate palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, great and small saphenous veins | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Viva voce/ Skill assessment             |                                       | General Medicine<br>General Surgery |                           |
| AN23.1 | Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus   | K/S               | SH                     | Y             | Practical, Lecture, DOAP session                         | Written/ Viva voce/<br>Skill assessment |                                       | General Surgery                     |                           |
| AN23.2 | Describe & demonstrate the extent, relations, tributaries of thoracic duct and enumerate its applied anatomy  | K/S               | SH                     | Y             | Practical, Lecture, DOAP session                         | Written/ Viva voce/<br>Skill assessment |                                       | General Surgery                     |                           |
| AN23.7 | Mention the extent, relations and applied anatomy of lymphatic duct   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                      |                                       | General Surgery                     |                           |
| AN27.1 | Describe the layers of scalp, its blood supply, its nerve supply and surgical importance  | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                      |                                       | General Surgery                     |                           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| AN28.8  | Explain surgical importance of deep facial vein  | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN28.9  | Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN28.10 | Explain the anatomical basis of Frey's syndrome  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN29.2  | Explain anatomical basis of Erb's & Klumpke's palsy  | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN29.3  | Explain anatomical basis of wry neck   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN30.1  | Describe the cranial fossae & identify related structures.   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/Skill assessment  |                                       | General Surgery      |                           |
| AN30.2  | Describe & identify major foramina with structures passing through them  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN33.2  | Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN33.4  | Explain the clinical significance of pterygoid venous plexus   | K                 | KH                     | Y             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN33.5  | Describe the features of dislocation of temporomandibular joint  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| AN34.1 | Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN34.2 | Describe the basis of formation of submandibular stones  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN35.2 | Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN35.5 | Describe & demonstrate extent, drainage & applied anatomy of cervical lymph nodes  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN35.8 | Describe the anatomically relevant clinical features of Thyroid swellings  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN35.9 | Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN43.5 | Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels | K/S               | SH                     | Y             | Practical  | Viva voce/ Skill assessment          |                                       | General Surgery      |                           |
| AN43.6 | Demonstrate surface projection of Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & Accessory nerve  | K/S               | SH                     | N             | Practical  | Viva voce/ Skill assessment          |                                       | General Surgery      |                           |
| AN44.1 | Describe & demonstrate the Planes (transpyloric, transtuberular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
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| AN44.4 | Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN44.5 | Explain the anatomical basis of inguinal hernia.  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | General Surgery      |                           |
| AN44.6 | Describe & demonstrate attachments of muscles of anterior abdominal wall  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN44.7 | Enumerate common Abdominal incisions  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN46.1 | Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN46.4 | Explain the anatomical basis of varicocele  | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN46.5 | Explain the anatomical basis of Phimosis & Circumcision   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |
| AN47.1 | Describe & identify boundaries and recesses of Lesser & Greater sac   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN47.2 | Name & identify various peritoneal folds & pouches with its explanation.  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | General Surgery      |                           |
| AN47.3 | Explain anatomical basis of Ascites & Peritonitis   | K                 | KH                     | N             | Lecture  | Written                              |                                       | General Surgery      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
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| AN47.4  | Explain anatomical basis of Subphrenic abscess  | K                 | KH                     | N             | Lecture  | Written                        |                                       | General Surgery      |                           |
| AN47.5  | Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)  | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written                        |                                       | General Surgery      |                           |
| AN47.6  | Explain the anatomical basis of Splenic notch, accessory spleens, Kehr's sign, different types of vagotomy, liver biopsy (site of needle puncture), referred pain in cholecystitis, Obstructive jaundice, referred pain around umbilicus, radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach | K                 | KH                     | N             | Lecture  | Written                        |                                       | General Surgery      |                           |
| AN47.7  | Mention the clinical importance of Calot's triangle   | K                 | KH                     | N             | Lecture  | Written                        |                                       | General Surgery      |                           |
| AN47.10 | Enumerate the sites of portosystemic anastomosis  | K                 | KH                     | Y             | Lecture  | Written                        |                                       | General Surgery      |                           |
| AN47.11 | Explain the anatomic basis of hematemesis & caput medusae in portal hypertension  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       | General Surgery      |                           |
| AN47.14 | Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia   | K                 | KH                     | N             | Lecture  | Written                        |                                       | General Surgery      |                           |
| AN48.5  | Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation  | K                 | KH                     | N             | Lecture  | Written                        |                                       | General Surgery      |                           |
| AN48.6  | Describe neurological basis of automatic bladder  | K                 | KH                     | N             | Lecture  | Written                        |                                       | General Surgery      |                           |
| AN48.7  | Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer   | K                 | KH                     | N             | Lecture  | Written                        |                                       | General Surgery      |                           |

| Number              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                             | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
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| AN48.8              | Mention the structures palpable during vaginal & rectal examination   | K                 | KH                     | N             | Lecture   | Written                                 |                                       | Obstetrics &<br>Gynaecology General<br>Surgery                |                           |
| AN49.4              | Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa  | K/S               | SH                     | Y             | Practical, Lecture,<br>Small group<br>discussion, DOAP<br>session | Written/ Viva voce/<br>Skill assessment |                                       | General Surgery   |                           |
| AN52.5              | Describe the development and congenital anomalies of diaphragm  | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Surgery   |                           |
| AN52.6              | Describe the development and congenital anomalies of foregut, midgut & hindgut  | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Surgery   |                           |
| AN52.7              | Describe the development of urinary system  | K                 | KH                     | Y             | Lecture   | Written/ Viva voce                      |                                       | General Surgery   |                           |
| AN53.1              | Identify & hold the bone in the anatomical position, describe the salient features, articulations & demonstrate the attachments of muscle groups                | K/S               | SH                     | Y             | Lecture, DOAP<br>session  | Viva voce/ Skill<br>assessment          |                                       | General Surgery,<br>Obstetrics &<br>Gynaecology               |                           |
| AN55.1              | Demonstrate the surface marking of regions and planes of abdomen, superficial inguinal ring, deep inguinal ring, McBurney's point, Renal Angle & Murphy's point | K/S               | SH                     | Y             | Practical, Lecture,<br>Small group<br>discussion, DOAP<br>session | Viva voce/ Skill<br>assessment          |                                       | General Surgery   |                           |
| AN55.2              | Demonstrate the surface projections of: stomach, liver, fundus of gall bladder, spleen, duodenum, pancreas, ileocaecal junction, kidneys & root of mesentery    | K/S               | SH                     | Y             | Practical, Lecture,<br>Small group<br>discussion, DOAP<br>session | Viva voce/ Skill<br>assessment          |                                       | General Surgery   |                           |
| <b>Biochemistry</b> |   |                   |                        |               |   |   |                                       |   |                           |
| BI10.1              | Describe the cancer initiation promotion oncogenes & oncogene activation.   | K                 | KH                     | Y             | Lectures, Small group<br>discussion                               | Written/ viva voce                      |                                       | Obstetrics &<br>Gynaecology,<br>General Surgery,<br>Pathology |                           |

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| B110.2           | Describe various biochemical tumor markers and the biochemical basis of cancer therapy.                                    | K                 | KH                     | Y             | Lectures, Small group discussion      | Written/ viva voce                      |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| B110.3           | Describe the cellular and humoral components of the immune system & describe the types and structure of antibody           | K                 | KH                     | Y             | Lectures, Small group discussion      | Written/ viva voce                      |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| <b>Pathology</b> |  |                   |                        |               |                                       |   |                                       |  |                           |
| PA4.1            | Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |
| PA4.2            | Enumerate and describe the mediators of acute inflammation   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |
| PA5.1            | Define and describe the process of repair and regeneration including wound healing and its types                           | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |
| PA6.3            | Define and describe shock, its pathogenesis and its stages   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |
| PA8.1            | Describe the diagnostic role of cytology and its application in clinical care  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |
| PA8.2            | Describe the basis of exfoliative cytology including the technique, stains used  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce/<br>Skill assessment |                                       | General Surgery                                      |                           |
| PA19.1           | Enumerate the causes and describe the differentiating features of lymphadenopathy  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |
| PA19.2           | Describe the pathogenesis and pathology of tuberculous lymphadenitis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |
| PA19.4           | Describe and discuss the pathogenesis pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                      |                                       | General Surgery                                      |                           |



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| PA19.5  | Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen  | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       | General Surgery                      |                           |
| PA19.6  | Enumerate and differentiate the causes of splenomegaly  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery,<br>General Medicine |                           |
| PA22.4  | Enumerate blood components and describe their clinical uses   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery,<br>General Medicine |                           |
| PA24.4  | Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                      |                           |
| PA24.5  | Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                      |                           |
| PA24.6  | Describe and etiology and pathogenesis and pathologic and distinguishing features of inflammatory bowel disease   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                      |                           |
| PA24.7  | Describe the etiology and pathogenesis and pathologic and distinguishing features of carcinoma of the colon   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                      |                           |
| PA25.2  | Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine,<br>General Surgery |                           |
| PA25.4  | Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine,<br>General Surgery |                           |
| PA25.5  | Describe the etiology, pathogenesis and complications of portal hypertension  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine,<br>General Surgery |                           |
| PA28.10 | Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Human Anatomy,<br>General Surgery    |                           |

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| PA28.13 | Define, classify and describe the etiology, pathogenesis, pathology, laboratory urinary findings, distinguishing features, progression and complications of renal stone disease and obstructive uropathy | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |
| PA28.16 | Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |
| PA29.1  | Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors                               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |
| PA29.2  | Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |
| PA29.3  | Describe the pathogenesis, pathology, hormonal dependency, presenting and distinguishing features, urologic findings and diagnostic tests of benign prostatic hyperplasia                                | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |
| PA29.4  | Describe the pathogenesis, pathology, hormonal dependency, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate                                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |
| PA29.5  | Describe the etiology, pathogenesis, pathology and progression of prostatitis  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |
| PA31.1  | Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Human Anatomy,<br>General Surgery |                           |
| PA31.2  | Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast                                 | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery                   |                           |

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| PA31.3              | Describe and identify the morphologic and microscopic features of carcinoma of the breast  | S                 | SH                     | N             | DOAP session                             | Skill assessment               |                                       | General Surgery   |                           |
| PA32.1              | Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Human Anatomy ,<br>Physiology, General<br>Medicine, Pathology         |                           |
| PA32.6              | Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer   | K                 | KH                     | N             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | General Surgery   |                           |
| PA32.9              | Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms  | K                 | KH                     | N             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | Human Anatomy,<br>Physiology, General<br>Medicine, General<br>Surgery |                           |
| <b>Microbiology</b> |  |                   |                        |               |  |                                |                                       |   |                           |
| MI1.4               | Classify and describe the different methods of sterilization and disinfection. Discuss the application of the different methods in the laboratory, in clinical and surgical practice | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | General Surgery   |                           |
| MI1.5               | Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice                          | K                 | KH                     | Y             | Small group discussions, Case discussion | Written/ Viva voce/<br>OSPE    |                                       | General Surgery   |                           |
| MI7.1               | Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system  | K                 | KH                     | Y             | Lecture, Small group discussion          | Written/ Viva voce             |                                       | General Surgery   |                           |

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| MI8.7                                     | Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)  | S                 | P                      | Y             | DOAP session                          | Skill assessment               | 3 each in<br>(Hand<br>hygiene &<br>PPE) | General Surgery  | Community Medicine        |
| <b>Community Medicine</b>                 |  |                   |                        |               |                                       |                                |   |  |                           |
| CM13.1                                    | Define and describe the concept of Disaster management   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |   | General Surgery,<br>General Medicine                                   |                           |
| CM13.2                                    | Describe disaster management cycle   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |   | General Surgery,<br>General Medicine                                   |                           |
| CM13.3                                    | Describe man-made disasters in the world and in India  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |   | General Surgery,<br>General Medicine                                   |                           |
| CM13.4                                    | Describe the details of the National Disaster management Authority   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |   | General Surgery,<br>General Medicine                                   |                           |
| <b>Forensic Medicine &amp; Toxicology</b> |  |                   |                        |               |                                       |                                |   |  |                           |
| FM1.9                                     | Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports especially<br>--maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres.<br>-- maintenance of medico-legal register like accident register.<br>-- documents of issuance of wound certificate<br>-- documents of issuance of drunkenness certificate.<br>-- documents of issuance of sickness and fitness certificate.<br>-- documents for issuance of death certificate.<br>-- documents of Medical Certification of Cause of Death - Form Number 4 and 4A<br>-- documents for estimation of age by physical, dental and radiological examination and issuance of certificate | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |   | Radiodiagnosis,<br>General Surgery,<br>General Medicine,<br>Pediatrics |                           |

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| FM2.19 | Investigation of anaesthetic, operative deaths: Describe and discuss special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences  | K                 | KH                     | Y             | Lecture, Small group discussion                                 | Written/ Viva voce             |                                       | Anesthesiology,<br>General Surgery |                           |
| FM2.25 | Describe types of injuries, clinical features, patho-physiology, post-mortem findings and medico-legal aspects in cases of burns, scalds, lightening, electrocution and radiations.   | K                 | KH                     | Y             | Lecture, Small group discussion, Autopsy, DOAP session          | Written/ Viva voce/<br>OSPE    |                                       | General Surgery                    |                           |
| FM3.3  | Mechanical injuries and wounds:<br>Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds and their medico-legal aspects.                                     | K                 | KH                     | Y             | Lectures, Small group discussion, Bed side clinic/ DOAP session | Written/ Viva voce/<br>OSCE    |                                       | General Surgery                    |                           |
| FM3.4  | Mechanical injuries and wounds: define injury, assault & hurt. Describe IPC pertaining to injuries  | K                 | KH                     | Y             | Lectures, Small group discussion                                | Written/ Viva voce             |                                       | General Surgery                    |                           |
| FM3.6  | Mechanical injuries and wounds: Describe healing of injury and fracture of bones with its medico-legal importance   | K                 | K/KH                   | Y             | Lecture, Small group discussion                                 | Written/ Viva voce             |                                       | General Surgery                    |                           |
| FM3.8  | Mechanical injuries and wounds: Describe and discuss different types of weapons including dangerous weapons and their examination.  | K                 | K/KH                   | Y             | Lecture, Small group discussion                                 | Written/ Viva voce             |                                       | General Surgery,<br>Orthopaedics   |                           |
| FM3.9  | Firearm injuries: Describe different types of firearms including structure and components, along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking. | K                 | K/KH                   | Y             | Lecture, Small group discussion                                 | Written/Viva voce              |                                       | General Surgery,<br>Orthopaedics   |                           |

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| FM3.10  | Firearm injuries:<br>Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session           | Written/ Viva voce/<br>OSCE      |                                       | General Surgery,<br>Orthopaedics |                                      |
| FM3.11  | Regional Injuries:<br>Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic or autopsy, DOAP session | Written/ Viva voce/<br>OSCE/OSPE |                                       | General Surgery,<br>Orthopaedics |                                      |
| FM3.12  | Regional Injuries:<br>Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine.  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic or autopsy, DOAP session | Written/ Viva voce/<br>OSCE/OSPE |                                       | General Surgery,<br>Orthopaedics |                                      |
| <b>Dermatology, Venereology &amp; Leprosy</b> |  |                   |                        |               |  |                                  |                                       |                                  |                                      |
| DR15.3  | Enumerate the indications and describe the pharmacology, indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma   | K                 | KH                     | Y             | Lecture, Small group discussion  | Written / Viva voce              |                                       | General Surgery                  | Microbiology,<br>Pharmacology        |
| DR15.4  | Enumerate the indications for surgical referral  | S                 | KH                     | Y             | DOAP session   | Written/Viva voce                |                                       | General Surgery                  |                                      |
| <b>Anesthesiology</b>                         |  |                   |                        |               |  |                                  |                                       |                                  |                                      |
| AS3.1   | Describe the principles of preoperative evaluation   | K                 | KH                     | Y             | Lecture, Small group discussion  | Written/ Viva voce               |                                       |                                  | General Surgery,<br>General Medicine |
| AS3.2   | Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation   | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic  | Skill station                    |                                       |                                  | General Surgery,<br>General Medicine |

| Number                  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method               | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration            |
|-------------------------|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|--------------------------------------|
| AS3.3                   | Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery                                  | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic                     | Skill station                  |                                       |                      | General Surgery,<br>General Medicine |
| AS3.4                   | Choose and interpret appropriate testing for patients undergoing Surgery  | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic                     | Skill station                  |                                       |                      | General Surgery,<br>General Medicine |
| AS3.5                   | Determine the readiness for General Surgery in a patient based on the preoperative evaluation   | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic                     | Skill station                  |                                       |                      | General Surgery,<br>General Medicine |
| AS5.6                   | Observe and describe the principles and steps/ techniques involved in common blocks used in Surgery(including brachial plexus blocks) | S                 | KH                     | Y             | Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce             |                                       |                      | General Surgery                      |
| AS6.3                   | Describe the common complications encountered by patients in the recovery room, their recognition and principles of management        | K                 | KH                     | Y             | Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce             |                                       |                      | General Surgery                      |
| AS9.3                   | Describe the principles of fluid therapy in the preoperative period   | K                 | KH                     | Y             | Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce             |                                       |                      | General Surgery                      |
| AS9.4                   | Enumerate blood products and describe the use of blood products in the preoperative period  | K                 | KH                     | Y             | Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce             |                                       | Pathology            | General Surgery                      |
| AS10.3                  | Describe the role of communication in patient safety  | K                 | KH                     | Y             | Lecture, Small group<br>discussion, DOAP<br>session | Written/ Viva voce             |                                       | AETCOM               | General Surgery                      |
| <b>General Medicine</b> |   |                   |                        |               |   |                                |                                       |                      |                                      |
| IM5.8                   | Describe and discuss the pathophysiology, clinical evolution and complications of cholelithiasis and cholecystitis                    | K                 | K                      | Y             | Lecture, Small group<br>discussion                  | Written/ Viva voce             |                                       | General Surgery      |                                      |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method             | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---|--|---------------------------------------|----------------------|---------------------------|
| IM5.13  | Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease  | K                 | K                      | Y             | Bed side clinic, Small group discussion | Written/ Viva voce                         |                                       | Radiodiagnosis       | General Surgery           |
| IM5.16  | Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites, spontaneous, bacterial peritonitis and hepatic encephalopathy   | K                 | KH                     | Y             | Written, Small group discussion         | Skill assessment/<br>Written/ Viva voce    |                                       | Pharmacology         | General Surgery           |
| IM5.18  | Enumerate the indications for hepatic transplantation  | K                 | K                      | Y             | Written, Small group discussion         | Written/ Viva voce                         |                                       |                      | General Surgery           |
| IM12.6  | Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings | S                 | SH                     | Y             | Bed side clinic, DOAP session           | Skill assessment                           |                                       |                      | General Surgery           |
| IM12.7  | Demonstrate the correct technique to palpate the thyroid   | S                 | SH                     | Y             | Bedside clinic, DOAP session            | Skill assessment                           |                                       |                      | General Surgery           |
| IM12.8  | Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis  | K                 | KH                     | Y             | Bedside clinic, small group discussion  | Short case                                 |                                       |                      | General Surgery           |
| IM12.9  | Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan  | S                 | SH                     | Y             | Bed side clinic, DOAP session           | Skill assessment                           |                                       |                      | General Surgery           |
| IM12.10 | Identify atrial fibrillation, pericardial effusion and bradycardia on ECG  | S                 | SH                     | Y             | Bedside clinic, lab                     | Skill assessment                           |                                       |                      | General Surgery           |
| IM12.11 | Interpret thyroid function tests in hypo-and hyperthyroidism   | S                 | SH                     | Y             | Bedside clinic, lab                     | Skill assessment                           |                                       |                      | General Surgery           |
| IM12.13 | Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs  | K                 | KH                     | Y             | Lecture, Small group discussion         | Viva voce/ Short note                      |                                       | Pharmacology         | General Surgery           |
| IM12.15 | Describe and discuss the indications of thionamide therapy, radio iodine therapy and Surgery in the management of thyrotoxicosis   | K                 | KH                     | Y             | Bedside clinic, Small group discussion  | Short note/ Viva voce,<br>Skill assessment |                                       | Pharmacology         | General Surgery           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---|---|---------------------------------------|--------------------------|---------------------------|
| IM13.7  | Elicit document and present a history that will help establish the aetiology of cancer and includes the appropriate risk factors, duration and evolution                         | S                 | K                      | Y             | Bedside clinic                                | Skill assessment/<br>Short case         |                                       |                          | General Surgery           |
| IM13.8  | Perform and demonstrate a physical examination that includes an appropriate general and local examination that excludes the diagnosis, extent spread and complications of cancer | S                 | SH                     | Y             | Bedside clinic                                | Skill assessment/<br>Short case         |                                       |                          | General Surgery           |
| IM13.9  | Demonstrate in a mannequin the correct technique for performing breast exam, rectal examination and cervical examination and pap smear   | S                 | K                      | Y             | Bedside clinic                                | Skill assessment/<br>Short case         |                                       | Human Anatomy            | General Surgery           |
| IM13.10 | Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis                                       | S                 | K                      | Y             | Bedside clinic                                | Skill assessment/<br>Short case         |                                       |                          | General Surgery           |
| IM13.13 | Describe and assess pain and suffering objectively in a patient with cancer  | K                 | KH                     | Y             | Bedside clinic, Small group discussion        | Short note/ Viva voce                   |                                       | Pharmacology             | General Surgery           |
| IM13.14 | Describe the indications for General Surgery, radiation and chemotherapy for common malignancies   | K                 | KH                     | Y             | Bedside clinic, Small group discussion        | Short note/ Viva voce                   |                                       | Pharmacology             | General Surgery           |
| IM14.14 | Describe and enumerate the indications and side effects of bariatric surgery   | K                 | K                      | Y             | Lecture, Small group discussion               | Short note/ Viva voce                   |                                       |                          | General Surgery           |
| IM15.1  | Enumerate, describe and discuss the aetiology of upper and lower GI bleeding   | K                 | K                      | Y             | Lecture, Small group discussion               | Short note/ Viva voce                   |                                       | Pathology                | General Surgery           |
| IM15.2  | Enumerate describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed                                       | S                 | SH                     | Y             | DOAP session, Small group discussion, Lecture | Written/ Viva voce/<br>Skill assessment |                                       | Pathology                | General Surgery           |
| IM15.3  | Describe and discuss the physiologic effects of acute blood and volume loss  | K                 | K                      | Y             | Lecture, Small group discussion               | Short note/ Viva voce                   |                                       | Pathology,<br>Physiology | General Surgery           |
| IM15.4  | Elicit document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors  | S                 | SH                     | Y             | Bedside clinic                                | Skill assessment                        |                                       |                          | General Surgery           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                | Suggested<br>Assessment method             | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------|---|-------------------|------------------------|---------------|--|--|---------------------------------------|----------------------|---------------------------|
| IM15.5  | Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination                | S                 | SH                     | Y             | Bedside clinic, Skills lab                           | Skill assessment                           |                                       |                      | General Surgery           |
| IM15.6  | Distinguish between upper and lower gastrointestinal bleeding based on the clinical features  | S                 | KH                     | Y             | Lecture, Small group discussion                      | Short note/ Viva voce                      |                                       |                      | General Surgery           |
| IM15.7  | Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent  | S                 | SH                     | Y             | DOAP session   | Skill assessment                           |                                       |                      | General Surgery           |
| IM15.8  | Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis  | S                 | SH                     | Y             | Bedside clinic, Skills lab                           | Skill assessment/<br>Short note/ Viva voce |                                       |                      | General Surgery           |
| IM15.9  | Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test. | S                 | SH                     | Y             | Bedside clinic, DOAP session, Small group discussion | Skill assessment/<br>Short note/ Viva voce |                                       | Pathology            | General Surgery           |
| IM15.10 | Enumerate the indications for endoscopy, colonoscopy and other imaging procedures in the investigation of Upper GI bleeding   | K                 | KH                     | Y             | Lectures, Small group discussion                     | Written/ Viva voce                         |                                       |                      | General Surgery           |
| IM15.11 | Develop, document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion, and specific therapy for arresting blood loss                  | S                 | KH                     | Y             | Lecture, Small group discussion                      | Short note/ Viva voce                      |                                       | Pathology            | General Surgery           |
| IM15.12 | Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion                             | K                 | K                      | Y             | Lecture, Small group discussion                      | Short note/ Viva voce                      |                                       | Pathology            | General Surgery           |
| IM15.13 | Observe cross matching and blood / blood component transfusion  | S                 | SH                     | Y             | Bedside clinic                                       | Short note/ Viva voce/<br>Skill assessment |                                       | Pathology            | General Surgery           |
| IM15.14 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed  | K                 | K                      | Y             | Lecture, Small group discussion                      | Short note/ Viva voce                      |                                       | Pharmacology         | General Surgery           |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|---------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------------|---------------------------|
| IM15.15 | Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori                          | K                 | K                      | Y             | Lecture, Small group discussion       | Short note/ Viva voce          |                                       | Pharmacology, Microbiology | General Surgery           |
| IM15.16 | Enumerate the indications for endoscopic interventions and Surgery   | K                 | K                      | Y             | Lecture, Small group discussion       | Short note/ Viva voce          |                                       |                            | General Surgery           |
| IM15.17 | Determine appropriate level of specialist consultation   | S                 | K                      | Y             | Small group discussion                |                                |                                       |                            | General Surgery           |
| IM15.18 | Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                            | General Surgery           |
| IM16.12 | Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea | K                 | KH                     | Y             | Lectures, Small group discussion      | Written/ Viva voce             |                                       | Pathology                  | General Surgery           |
| IM16.15 | Distinguish, based on the clinical presentation, Crohn's disease from ulcerative colitis   | S                 | SH                     | Y             | Lecture, Small group discussion       | Short note/ Viva voce          |                                       | Pathology                  | General Surgery           |
| IM16.17 | Describe and enumerate the indications for Surgery in inflammatory bowel disease   | K                 | K                      | Y             | Lecture, Small group discussion       | Short note/ Viva voce          |                                       |                            | General Surgery           |
| IM18.15 | Enumerate the indications for Surgery in a hemorrhagic stroke  | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                            | General Surgery           |
| IM19.9  | Enumerate the indications for use of Surgery and botulinum toxin in the treatment of movement disorders  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pharmacology               | General Surgery           |
| IM22.2  | Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Pathology                  | General Surgery           |

| Number                              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration            |
|-------------------------------------|---|-------------------|------------------------|---------------|--|---|---------------------------------------|----------------------|--------------------------------------|
| IM24.11                             | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery   | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                      |                                       |                      | Anesthesiology,<br>General Surgery   |
| <b>Obstetrics &amp; Gynaecology</b> |   |                   |                        |               |  |   |                                       |                      |                                      |
| OG26.2                              | Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae   | K                 | KH                     | N             | Lecture, Small group discussion                  | Written/ Viva voce                      |                                       |                      | General Surgery                      |
| OG33.2                              | Describe the principles of management including Surgery and radiotherapy of benign, pre-malignant (CIN) and malignant Lesions of the Cervix   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                      | General Surgery                      |
| <b>Pediatrics</b>                   |   |                   |                        |               |  |   |                                       |                      |                                      |
| PE21.8                              | Elicit, document and present a history pertaining to diseases of the Genitourinary tract00  | S                 | SH                     | Y             | Bedside clinics, Skills lab                      | Skill Assessment                        |                                       |                      | General Surgery                      |
| PE21.14                             | Recognize common surgical conditions of the abdomen and genitourinary system and enumerate the indications for referral including acute and subacute intestinal obstruction, appendicitis pancreatitis perforation intussusception, Phimosis, undescended testis, Chordee, hypospadiasis, Torsion testis, hernia Hydrocele, Vulval Synechia | S                 | SH                     | Y             | Bed side clinics, Skills lab                     | Log book assessment                     |                                       |                      | General Surgery                      |
| <b>Orthopedics</b>                  |   |                   |                        |               |  |   |                                       |                      |                                      |
| OR1.1                               | Describe and discuss the principles of pre-hospital care and casualty management of a trauma victim including principles of triage  | K/S/A/C           | K/KH                   | Y             | Lecture with video, Small group discussion       | Written/ Viva voce/<br>OSCE/ Simulation |                                       |                      | General Surgery -<br>Anaesthesiology |
| OR1.2                               | Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock  | K/S               | K/KH                   | Y             | Lecture  | Written/ Viva voce/<br>OSCE/ Simulation |                                       |                      | General Surgery                      |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                               | Suggested<br>Assessment method        | Number<br>required<br>to certify<br>P | Vertical Integration       | Horizontal<br>Integration            |
|---|--|-------------------|------------------------|---------------|---|---------------------------------------|---------------------------------------|----------------------------|--------------------------------------|
| OR1.3   | Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries  | K                 | KH/<br>SH              | Y             | Lecture, Small group discussion                                     | Written/ OSCE                         |                                       |                            | General Surgery                      |
| OR1.4   | Describe and discuss the principles of management of soft tissue injuries  | K                 | K/KH                   | Y             | Lecture, Small group discussion                                     | Written Assesment/<br>Viva voce       |                                       |                            | General Surgery                      |
| OR3.1   | Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections<br>a) Acute Osteomyelitis<br>b) Subacute osteomyelitis<br>c) Acute Suppurative arthritis<br>d) Septic arthritis & HIV infection<br>e) Spirochaetal infection<br>f) Skeletal Tuberculosis | K/S               | K/KH/<br>SH            | Y             | Lecture, Small group discussion, Video assisted lecture             | Written/ Viva voce/<br>OSCE           |                                       | Pathology,<br>Microbiology | General surgery                      |
| OR3.3   | Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy  | K/S/A/C           | SH                     | Y             | DOAP session,<br>Video demonstration                                | Viva voce/ OSCE/<br>Skills assessment |                                       |                            | General Surgery                      |
| OR4.1   | Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abscess and caries spine  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Case discussion                    | Written/ Viva voce/<br>OSCE           |                                       | Pathology                  | General surgery                      |
| OR10.1  | Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures   | K                 | K/KH                   | Y             | Lecture, Small group discussion, Video assisted interactive lecture | Written/ Viva voce<br>OSCE            |                                       | Pathology                  | General surgery,<br>Radiotherapy     |
| OR11.1  | Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves  | K                 | K/H                    | Y             | Lecture Small Group discussion, Case discussion                     | Written/ Viva voce/<br>OSCE           |                                       | Human Anatomy              | General Medicine,<br>General surgery |
| <b>Physical Medicine &amp; Rehabilitation</b> |  |                   |                        |               |   |                                       |                                       |                            |                                      |
| PM5.1   | Enumerate the indications and describe the principles of amputation  | K                 | KH                     | Y             | Lecture, Small group discussion                                     | Written/ Viva voce                    |                                       |                            | Orthopedics, General Surgery         |

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|---------------------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---|
| PM7.8               | Enumerate the causes of, describe, classify Pressure sores, prevention, and treatment.                              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Surgery                                 |
| PM7.9               | Enumerate the indications of debridement, and Split thickness skin grafting.  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Surgery                                 |
| PM8.1               | Describe the clinical features, evaluation, diagnosis and management of disability following traumatic brain injury | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics, General Surgery  |
| <b>Radiotherapy</b> |   |                   |                        |               |                                       |                                |                                       |                      |   |
| RT1.1               | Describe and discuss definition of radiation, mechanism of action of radiation, types of radiation                  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       |                      | General Surgery<br>Anaesthesiology              |
| RT1.3               | Enumerate, describe and discuss and classify staging of cancer (AJCC, FIGO etc.)                                    | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Pathology            | General Surgery,<br>General Medicine            |
| RT4.5               | Describe and discuss role of radiation in management of common malignancies in India (region specific)              | K                 | KH                     | Y             | Lecture, Bed side clinic              | Written/ Viva voce             |                                       | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |
| RT4.6               | Describe and discuss radiotherapy for benign disease  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |
| RT4.7               | Counsel patients regarding acute and late effects of radiation and supportive care                                  | K/A/S             | KH                     | Y             | Bedside clinic, Group discussion      | Written/ Viva voce             |                                       | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |
| RT4.8               | Describe oncological emergencies and palliative care  | K/A/S             | K/KH                   | Y             | Lecture, Group discussion             | Written/ Viva voce             |                                       |                      | General Surgery,<br>Obstetrics &<br>Gynaecology |
| RT5.1               | Describe and discuss cancer prevention, screening, vaccination, cancer registry                                     | K                 | K                      | Y             | Group discussion                      | Written/ Viva voce             |                                       | Pathology            | General Surgery,<br>Obstetrics &<br>Gynaecology |

# **OPHTHALMOLOGY (CODE: OP)**

| Number                                 | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>OPHTHALMOLOGY</b>                   |   |                                     |                        |               |  |                                |                                       |                      |                           |
| <b>Topic: Visual Acuity Assessment</b> |   | <b>Number of Competens: (05)</b>    |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |                           |
| OP1.1                                  | Describe the physiology of vision   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Physiology           |                           |
| OP1.2                                  | Define, classify and describe the types and methods of correcting refractive errors   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                      |                           |
| OP1.3                                  | Demonstrate the steps in performing the visual acuity assessment for distance vision, near vision, colour vision, the pin hole test and the menace and blink reflexes   | S                                   | SH                     | Y             | DOAP session, Lecture  | Skill assessment/ Logbook      |                                       |                      |                           |
| OP1.4                                  | Enumerate the indications and describe the principles of refractive surgery   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                      |                           |
| OP1.5                                  | Define, enumerate the types and the mechanism by which strabismus leads to amblyopia  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Lids and Adnexa, Orbit</b>   |   | <b>Number of Competencies: (08)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>  |                                |                                       |                      |                           |
| OP2.1                                  | Enumerate the causes, describe and discuss the aetiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa including Hordeolum externum/ internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag, lagophthalmos | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| OP2.2                                  | Demonstrate the symptoms & clinical signs of conditions enumerated in OP2.1   | S                                   | S                      | Y             | DOAP session   | Skill assessment               |                                       |                      |                           |



| Number                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---------------------------|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| OP2.3                     | Demonstrate under supervision clinical procedures performed in the lid including: bells phenomenon, assessment of entropion/ectropion, perform the regurgitation test of lacrimal sac. massage technique in cong. dacryocystitis, and trichiatic cilia removal by epilation | S                                   | SH                     | Y             | DOAP session,<br>Lecture                                      | Skill assessment               |                                       |                      |                           |
| OP2.4                     | Describe the aetiology, clinical presentation. Discuss the complications and management of orbital cellulitis   | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| OP2.5                     | Describe the clinical features on ocular examination and management of a patient with cavernous sinus thrombosis  | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| OP2.6                     | Enumerate the causes and describe the differentiating features, and clinical features and management of proptosis   | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| OP2.7                     | Classify the various types of orbital tumours. Differentiate the symptoms and signs of the presentation of various types of ocular tumours  | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| OP2.8                     | List the investigations helpful in diagnosis of orbital tumors. Enumerate the indications for appropriate referral  | K                                   | KH                     | Y             | Lecture, Small group<br>discussion                            | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Conjunctiva</b> |   | <b>Number of Competencies (09 )</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| OP3.1                     | Elicit document and present an appropriate history in a patient presenting with a "red eye" including congestion, discharge, pain   | S                                   | SH                     | Y             | DOAP session  | Skill Assessment               |                                       |                      |                           |
| OP3.2                     | Demonstrate document and present the correct method of examination of a "red eye" including vision assessment, corneal lustre, pupil abnormality, ciliary tenderness  | S                                   | SH                     | Y             | DOAP session  | Skill Assessment               |                                       |                      |                           |

| Number                | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-----------------------|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| OP3.3                 | Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications. and management of various causes of conjunctivitis | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| OP3.4                 | Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of trachoma.                         | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| OP3.5                 | Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of vernal catarrh                    | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| OP3.6                 | Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of pterygium                         | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| OP3.7                 | Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of symblepharon                      | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |
| OP3.8                 | Demonstrate correct technique of removal of foreign body from the eye in a simulated environment  | S                                   | SH                     | Y             | DOAP session  | Skill assessment               |                                       |                      |                           |
| OP3.9                 | Demonstrate the correct technique of instillation of eye drops in a simulated environment   | S                                   | SH                     | Y             | DOAP session  | Skill assessment               |                                       |                      |                           |
| <b>Topic: Corneas</b> |   | <b>Number of Competencies: (10)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| OP4.1                 | Enumerate, describe and discuss the types and causes of corneal ulceration  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| OP4.2                 | Enumerate and discuss the differential diagnosis of infective keratitis   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce             |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| OP4.3   | Enumerate the causes of corneal edema   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP4.4   | Enumerate the causes and discuss the management of dry eye  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP4.5   | Enumerate the causes of corneal blindness   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP4.6   | Enumerate the indications and the types of keratoplasty   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP4.7   | Enumerate the indications and describe the methods of tarsorrhaphy  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP4.8   | Demonstrate technique of removal of foreign body in the cornea in a simulated environment   | S                 | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      |                           |
| OP4.9   | Describe and discuss the importance and protocols involved in eye donation and eye banking  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP4.10  | Counsel patients and family about eye donation in a simulated environment   | A/C               | SH                     | Y             | DOAP session                          | Skill assessment               |                                       |                      |                           |
| <b>Topic: Sclera</b> <span style="margin-left: 200px;"><b>Number of competencies: (02)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| OP5.1   | Define, enumerate and describe the aetiology, associated systemic conditions, clinical features complications indications for referral and management of episcleritis | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| OP5.2  | Define, enumerate and describe the aetiology, associated systemic conditions, clinical features, complications, indications for referral and management of scleritis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Medicine     |                           |
| <b>Topic: Iris and Anterior chamber</b> <span style="margin-left: 200px;"><b>Number of Competencies (10)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |   |                   |                        |               |                                       |                                |                                       |                      |                           |
| OP6.1  | Describe clinical signs of intraocular inflammation and enumerate the features that distinguish granulomatous from non-granulomatous inflammation. Identify acute iridocyclitis from chronic condition                                | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP6.2  | Identify and distinguish acute iridocyclitis from chronic iridocyclitis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP6.3  | Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine          |
| OP6.4  | Describe and distinguish hyphema and hypopyon   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP6.5  | Describe and discuss the angle of the anterior chamber and its clinical correlates  | K                 | KH                     |               | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |
| OP6.6  | Identify and demonstrate the clinical features and distinguish and diagnose common clinical conditions affecting the anterior chamber   | S                 | SH                     | Y             | DOAP session, Bedside clinic          | Skill assessment               |                                       |                      |                           |
| OP6.7  | Enumerate and discuss the aetiology, the clinical distinguishing features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above conditions. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Human Anatomy        |                           |

| Number             | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration        | Horizontal<br>Integration |
|--------------------|---|-------------------------------------|------------------------|---------------|---|---|---------------------------------------|-----------------------------|---------------------------|
| OP6.8              | Enumerate and choose the appropriate investigation for patients with conditions affecting the Uvea  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                             |                           |
| OP6.9              | Choose the correct local and systemic therapy for conditions of the anterior chamber and enumerate their indications, adverse events and interactions             | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       |                             |                           |
| OP6.10             | Counsel patients with conditions of the iris and anterior chamber about their diagnosis, therapy and prognosis in an empathetic manner in a simulated environment | A/C                                 | SH                     | Y             | DOAP session  | Skill assessment                        |                                       |                             |                           |
| <b>Topic: Lens</b> |   | <b>Number of Competencies: (06)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |   |                                       |                             |                           |
| OP7.1              | Describe the surgical anatomy and the metabolism of the lens  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       | Biochemistry, Human Anatomy |                           |
| OP7.2              | Describe and discuss the aetio-pathogenesis, stages of maturation and complications of cataract   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Written/ Viva voce                      |                                       | Pathology                   |                           |
| OP7.3              | Demonstrate the correct technique of ocular examination in a patient with a cataract  | S                                   | SH                     | Y             | DOAP session  | Skill assessment                        |                                       |                             |                           |
| OP7.4              | Enumerate the types of cataract surgery and describe the steps, intra-operative and post-operative complications of extracapsular cataract extraction surgery.    | S                                   | KH                     | Y             | DOAP session, Lecture, Small group discussion                 | Written/ Viva voce                      |                                       |                             |                           |
| OP7.5              | To participate in the team for cataract surgery   | S                                   | SH                     | Y             | DOAP session  | Skill assessment/ Logbook documentation |                                       |                             |                           |
| OP7.6              | Administer informed consent and counsel patients for cataract surgery in a simulated environment  | S                                   | SH                     | Y             | DOAP session  | Skill Assessment                        |                                       |                             |                           |

| Number                                 | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration     | Horizontal<br>Integration |
|--|--|------------------------------------|------------------------|---------------|--|---|---------------------------------------|--------------------------|---------------------------|
| <b>Topic: Retina &amp; optic Nerve</b> |  | <b>Number of Competencies (05)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                          |                           |
| OP8.1                                  | Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina  | K                                  | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       | Human Anatomy, Pathology |                           |
| OP8.2                                  | Enumerate the indications for laser therapy in the treatment of retinal diseases (including retinal detachment, retinal degenerations, diabetic retinopathy & hypertensive retinopathy)  | K                                  | K                      | Y             | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                          |                           |
| OP8.3                                  | Demonstrate the correct technique of a fundus examination and describe and distinguish the fundoscopic features in a normal condition and in conditions causing an abnormal retinal exam | S                                  | SH                     | Y             | Lecture, Small group discussion                                | Skill Assessment                        |                                       |                          |                           |
| OP8.4                                  | Enumerate and discuss treatment modalities in management of diseases of the retina   | K                                  | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                          |                           |
| OP8.5                                  | Describe and discuss the correlative anatomy, aetiology, clinical manifestations, diagnostic tests, imaging and management of diseases of the optic nerve and visual pathway             | K                                  | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                          |                           |
| <b>Topic: Miscellaneous</b>            |  | <b>Number of Competencies (05)</b> |                        |               | <b>Number of procedures that require certification: (01)</b>   |   |                                       |                          |                           |
| OP9.1                                  | Demonstrate the correct technique to examine extra ocular movements (Uniocular & Binocular)  | S                                  | P                      | Y             | DOAP session   | Skill Assessment                        | 5                                     |                          |                           |
| OP9.2                                  | Classify, enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus  | K                                  | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce/<br>skill assessment |                                       |                          |                           |
| OP9.3                                  | Describe the role of refractive error correction in a patient with headache and enumerate the indications for referral   | K                                  | K                      | Y             | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                          | General Medicine          |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| OP9.4  | Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020)                  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Community Medicine        |
| OP9.5  | Describe the evaluation and enumerate the steps involved in the stabilisation, initial management and indication for referral in a patient with ocular injury | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      |                           |

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.

Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,

Column F: DOAP session – Demonstrate, Observe, Assess, Perform.

Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation

## Integration

### Human Anatomy

|        |  |     |    |   |  |                    |  |               |  |
|--------|--|-----|----|---|--|--------------------|--|---------------|--|
| AN30.5 | Explain effect of pituitary tumours on visual pathway  | K   | KH | N | Lecture                                    | Written            |  | Ophthalmology |  |
| AN31.3 | Describe anatomical basis of Horner's syndrome   | K   | KH | N | Lecture                                    | Written            |  | Ophthalmology |  |
| AN31.5 | Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus | K   | KH | Y | Lecture                                    | Written            |  | Ophthalmology |  |
| AN41.1 | Describe & demonstrate parts and layers of eyeball   | K/S | SH | Y | Practical, Lecture, Small group discussion | Written/ Viva voce |  | Ophthalmology |  |
| AN41.2 | Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion               | K   | KH | N | Lecture                                    | Written            |  | Ophthalmology |  |

| Number | COMPETENCY<br>The student should be able to                            | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| AN41.3 | Describe the position, nerve supply and actions of intraocular muscles | K                 | KH                     | N             | Lecture                               | Written                        |                                       | Ophthalmology        |                           |

#### Physiology

|         |  |   |    |   |                                 |                                |   |                    |  |
|---------|--|---|----|---|---------------------------------|--------------------------------|---|--------------------|--|
| PY10.17 | Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, Refractive errors, colour blindness, Physiology of pupil and light reflex | K | KH | Y | Lecture, Small group discussion | Written/viva                   |   | Ophthalmology      |  |
| PY10.18 | Describe and discuss the physiological basis of lesion in visual pathway   | K | KH | Y | Lecture, Small group discussion | Written/Viva voce              |   | Ophthalmology      |  |
| PY10.19 | Describe and discuss auditory & visual evoke potentials  | K | KH | Y | Lecture, Small group discussion | Written/ viva                  |   | Ophthalmology      |  |
| PY10.20 | Demonstrate testing of visual acuity, colour and field of vision in volunteer/ simulated environment   | S | P  | Y | DOAP sessions                   | Skill assessment/<br>Viva voce | 1 | ENT, Ophthalmology |  |

#### Pathology

|        |  |   |    |   |                                 |                    |  |               |  |
|--------|--|---|----|---|---------------------------------|--------------------|--|---------------|--|
| PA36.1 | Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma | K | KH | N | Lecture, Small group discussion | Written/ Viva voce |  | Ophthalmology |  |
|--------|--|---|----|---|---------------------------------|--------------------|--|---------------|--|

#### Pharmacology

|        |   |   |    |   |         |                    |  |               |  |
|--------|---|---|----|---|---------|--------------------|--|---------------|--|
| PH1.58 | Describe drugs used in Ocular disorders | K | KH | Y | Lecture | Written/ Viva voce |  | Ophthalmology |  |
|--------|---|---|----|---|---------|--------------------|--|---------------|--|

#### General Medicine

|         |  |   |    |   |                                 |                    |  |  |               |
|---------|--|---|----|---|---------------------------------|--------------------|--|--|---------------|
| IM24.15 | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly | K | KH | Y | Lecture, Small group discussion | Written/ Viva voce |  |  | Ophthalmology |
|---------|--|---|----|---|---------------------------------|--------------------|--|--|---------------|



**OTORHINOLARYNGOLOGY (ENT) (CODE: EN)**

| Number   | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|-------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>OTORHINOLARYNGOLOGY (ENT)</b>   |  |                                     |                        |               |  |                                      |                                       |                      |                           |
| <b>Topic: Anatomy and Physiology of ear, nose, throat, head &amp; neck</b> |  | <b>Number of competencies:(02)</b>  |                        |               | <b>Number of procedures that require certification:(NIL)</b>   |                                      |                                       |                      |                           |
| EN1.1  | Describe the Anatomy & physiology of ear, nose, throat, head & neck  | K                                   | KH                     | Y             | Lecture, Small group discussion, Demonstration                 | Written/ Viva voce/ Skill assessment |                                       | Human Anatomy        |                           |
| EN1.2  | Describe the pathophysiology of common diseases in ENT   | K                                   | KH                     | Y             | Lecture, Small group discussion, Demonstration                 | Written/ Viva voce/ Skill assessment |                                       | Pathology            |                           |
| <b>Topic: Clinical Skills</b>  |  | <b>Number of competencies: (15)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                      |                                       |                      |                           |
| EN2.1  | Elicit document and present an appropriate history in a patient presenting with an ENT complaint                     | K/S/A/C                             | SH                     | Y             | Lecture, Small group discussion, Demonstration                 | Skill assessment                     |                                       |                      |                           |
| EN2.2  | Demonstrate the correct use of a headlamp in the examination of the ear, nose and throat                             | S                                   | SH                     | Y             | DOAP session   | Skill assessment/ OSCE               |                                       |                      |                           |
| EN2.3  | Demonstrate the correct technique of examination of the ear including Otoscopy                                       | K/S/A                               | SH                     | Y             | DOAP session, Bedside clinic                                   | Skill assessment/ OSCE               |                                       |                      |                           |
| EN2.4  | Demonstrate the correct technique of performance and interpret tuning fork tests                                     | K/S/A                               | SH                     | Y             | DOAP session, Bedside clinic                                   | Skill assessment/ OSCE               |                                       |                      |                           |
| EN2.5  | Demonstrate the correct technique of examination of the nose & paranasal sinuses including the use of nasal speculum | S                                   | SH                     | Y             | DOAP session, Bedside clinic                                   | Skill assessment/ OSCE               |                                       |                      |                           |
| EN2.6  | Demonstrate the correct technique of examining the throat including the use of a tongue depressor                    | S                                   | SH                     | Y             | DOAP session, Bedside clinic                                   | Skill assessment/ OSCE               |                                       |                      |                           |
| EN2.7  | Demonstrate the correct technique of examination of neck including elicitation of laryngeal crepitus                 | S                                   | SH                     | Y             | DOAP session, Bedside clinic                                   | Skill assessment                     |                                       |                      |                           |

| Number   | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C                  | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                        | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|--|------------------------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| EN2.8  | Demonstrate the correct technique to perform and interpret pure tone audiogram & impedance audiogram   | K/S                                | SH                     | Y             | DOAP session, Bedside clinic                                 | Skill assessment                     |                                       |                      |                           |
| EN2.9  | Choose correctly and interpret radiological, microbiological & histological investigations relevant to the ENT disorders   | K/S                                | SH                     | Y             | Lecture, Small group discussion, DOAP session                | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN2.10   | Identify and describe the use of common instruments used in ENT surgery  | K                                  | SH                     | Y             | DOAP session, Bedside clinic                                 | Skill assessment                     |                                       |                      |                           |
| EN2.11   | Describe and identify by clinical examination malignant & pre- malignant ENT diseases  | K/S                                | SH                     | Y             | Lecture, Small group discussion, Demonstration               | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN2.12   | Counsel and administer informed consent to patients and their families in a simulated environment  | S/A/C                              | SH                     | Y             | DOAP session, Bedside clinic                                 | Skill assessment                     |                                       |                      |                           |
| EN2.13   | Identify, resuscitate and manage ENT emergencies in a simulated environment (including tracheostomy, anterior nasal packing, removal of foreign bodies in ear, nose, throat and upper respiratory tract) | K/S/A                              | SH                     | Y             | DOAP session, Bedside clinic                                 | Skill assessment                     |                                       |                      |                           |
| EN2.14   | Demonstrate the correct technique to instilling topical medications into the ear, nose and throat in a simulated environment   | K/S                                | SH                     | Y             | DOAP session, Bedside clinic                                 | Skill assessment/ OSCE               |                                       |                      |                           |
| EN2.15   | Describe the national programs for prevention of deafness, cancer, noise & environmental pollution   | K                                  | KH                     | Y             | Lecture, Small group discussion, Demonstration               | Written/ Viva voce                   |                                       |                      |                           |
| <b>Topic: Diagnostic and Therapeutic procedures in ENT</b> |  | <b>Number of competencies:(06)</b> |                        |               | <b>Number of procedures that require certification:(NIL)</b> |                                      |                                       |                      |                           |
| EN3.1  | Observe and describe the indications for and steps involved in the performance of Otomicroscopic examination in a simulated environment  | S                                  | KH                     | N             | Lecture, Small group discussion, Demonstration               | Written/ Viva voce                   |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| EN3.2   | Observe and describe the indications for and steps involved in the performance of diagnostic nasal Endoscopy   | S                 | KH                     | N             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| EN3.3   | Observe and describe the indications for and steps involved in the performance of Rigid/Flexible Laryngoscopy  | K                 | KH                     | N             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| EN3.4   | Observe and describe the indications for and steps involved in the removal of foreign bodies from ear, nose & throat   | K                 | KH                     | N             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| EN3.5   | Observe and describe the indications for and steps involved in the surgical procedures in ear, nose & throat   | K                 | KH                     | N             | Lecture, small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| EN3.6   | Observe and describe the indications for and steps involved in the skills of emergency procedures in ear, nose & throat  | K                 | KH                     | N             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| <b>Topic: Management of diseases of ear, nose &amp; throat</b> <span style="float: right;">Number of competencies: (53)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span> |  |                   |                        |               |   |                                      |                                       |                      |                           |
| EN4.1   | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Otagia                       | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.2   | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of diseases of the external Ear | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.3   | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of ASOM                         | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| EN4.4  | Demonstrate the correct technique to hold visualize and assess the mobility of the tympanic membrane and its mobility and interpret and diagrammatically represent the findings                      | K/S/A             | SH                     | Y             | Clinical, Demonstration                                       | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.5  | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of OME                    | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.6  | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Discharging ear        | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.7  | Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of CSOM                    | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.8  | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of CSOM | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.9  | Demonstrate the correct technique for syringing wax from the ear in a simulated environment  | S                 | SH                     | Y             | DOAP session  | Skill assessment                     |                                       |                      |                           |
| EN4.10 | Observe and describe the indications for and steps involved in myringotomy and myringoplasty   | S                 | KH                     | Y             | DOAP session  | Written/ Viva voce                   |                                       |                      |                           |
| EN4.11 | Enumerate the indications describe the steps and observe a mastoidectomy   | K/S               | KH                     | Y             | DOAP session  | Written/ Viva voce                   |                                       |                      |                           |
| EN4.12 | Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Hearing loss            | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method             | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| EN4.13 | Describe the clinical features, investigations and principles of management of Otosclerosis  | K                 | KH                     | Y             | Lecture, Small group discussion;<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.14 | Describe the clinical features, investigations and principles of management of Sudden Sensorineural Hearing Loss   | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.15 | Describe the clinical features, investigations and principles of management of Noise Induced Hearing Loss  | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.16 | Observe and describe the indications for and steps involved in the performance of pure tone audiometry   | S                 | KH                     | Y             | DOAP session                                      | Written/ Viva                        |                                       |                      |                           |
| EN4.17 | Enumerate the indications and interpret the results of an audiogram  | S                 | SH                     | Y             | DOAP session                                      | Skill assessment                     |                                       |                      |                           |
| EN4.18 | Describe the clinical features, investigations and principles of management of Facial Nerve palsy  | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.19 | Describe the clinical features, investigations and principles of management of Vertigo   | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.20 | Describe the clinical features, investigations and principles of management of Meniere's Disease   | K                 | KH                     | N             | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.21 | Describe the clinical features, investigations and principles of management of Tinnitus  | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.22 | Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Nasal Obstruction | K/S               | SH                     | Y             | Lecture, Small group discussion,<br>Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |

| Number | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| EN4.23 | Describe the clinical features, investigations and principles of management of DNS  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.24 | Enumerate the indications observe and describe the steps in a septoplasty   | S                 | KH                     | Y             | DOAP session  | Written/ Viva voce                   |                                       |                      |                           |
| EN4.25 | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Nasal Polyps              | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.26 | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Adenoids                  | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.27 | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Allergic Rhinitis         | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.28 | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Vasomotor Rhinitis        | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.29 | Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Acute & Chronic Rhinitis | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.30 | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Epistaxis                 | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |

| Number | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|---|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| EN4.31 | Describe the clinical features, investigations and principles of management of trauma to the face & neck  | K/S               | KH                     | N             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| EN4.32 | Describe the clinical features, investigations and principles of management of nasopharyngeal Angiofibroma  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| EN4.33 | Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Acute & Chronic Sinusitis    | K/S               | SH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.34 | Describe the clinical features, investigations and principles of management of Tumors of Maxilla  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce                   |                                       |                      |                           |
| EN4.35 | Describe the clinical features, investigations and principles of management of Tumors of Nasopharynx  | K                 | KH                     | N             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.36 | Describe the clinical features, investigations and principles of management of diseases of the Salivary glands  | K                 | KH                     | N             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.37 | Describe the clinical features, investigations and principles of management of Ludwig's angina  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.38 | Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of dysphagia                              | K/S               | SH                     | Y             | Lecture, Small group discussion, Demonstration                | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.39 | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of Acute & Chronic Tonsillitis | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/ Skill assessment |                                       |                      |                           |



| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---|---|---------------------------------------|----------------------|---------------------------|
| EN4.40 | Observe and describe the indications for and steps involved in a tonsillectomy / adenoidectomy   | S                 | KH                     | Y             | DOAP session  | Written/ Viva voce                      |                                       |                      |                           |
| EN4.41 | Describe the clinical features, investigations and principles of management of Acute & chronic abscesses in relation to Pharynx  | K/S               | KH                     | Y             | Lecture, Small group discussion<br>Demonstration              | Written/ Viva voce                      |                                       |                      |                           |
| EN4.42 | Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of hoarseness of voice | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session, Bedside clinic | Written/ Viva voce/<br>Skill assessment |                                       |                      |                           |
| EN4.43 | Describe the clinical features, investigations and principles of management of Acute & Chronic Laryngitis  | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration             | Written/ Viva voce                      |                                       |                      |                           |
| EN4.44 | Describe the clinical features, investigations and principles of management of Benign lesions of the vocal cord  | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration             | Written/ Viva voce                      |                                       |                      |                           |
| EN4.45 | Describe the clinical features, investigations and principles of management of Vocal cord palsy  | K                 | KH                     | N             | Lecture, Small group discussion,<br>Demonstration             | Written/ Viva voce/ Skill assessment    |                                       |                      |                           |
| EN4.46 | Describe the clinical features, investigations and principles of management of Malignancy of the Larynx & Hypopharynx  | K                 | KH                     | Y             | Lecture, Small group discussion,<br>Demonstration             | Written/ Viva voce/ Skill assessment    |                                       |                      |                           |
| EN4.47 | Describe the clinical features, investigations and principles of management of Stridor   | K                 | KH                     | Y             | Lecture, Small group discussion<br>Demonstration              | Written/ Viva voce/ Skill assessment    |                                       |                      |                           |
| EN4.48 | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Airway Emergencies   | S                 | SH                     | Y             | Lecture, Small group discussion,<br>Demonstration             | Written/ Viva voce/ Skill assessment    |                                       |                      |                           |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method          | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| EN4.49  | Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of foreign bodies in the air & food passages | S                 | SH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.50  | Observe and describe the indications for and steps involved in tracheostomy   | S                 | KH                     | Y             | DOAP session                                   | Written/ Viva voce                   |                                       |                      |                           |
| EN4.51  | Observe and describe the care of the patient with a tracheostomy  | S                 | KH                     | Y             | DOAP session                                   | Written/ Viva voce                   |                                       |                      |                           |
| EN4.52  | Describe the Clinical features, Investigations and principles of management of diseases of Oesophagus   | K                 | ENT                    | N             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       |                      |                           |
| EN4.53  | Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT  | K                 | KH                     | N             | Lecture, Small group discussion, Demonstration | Written/ Viva voce/ Skill assessment |                                       | General Medicine     |                           |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |   |                   |                        |               |  |                                      |                                       |                      |                           |

## Integration

### Human Anatomy

|        |  |   |    |   |         |         |  |     |  |
|--------|--|---|----|---|---------|---------|--|-----|--|
| AN36.1 | Describe the (1) morphology, relations, blood supply and applied anatomy of palatine tonsil and (2) composition of soft palate | K | KH | Y | Lecture | Written |  | ENT |  |
| AN36.2 | Describe the components and functions of waldeyer's lymphatic ring   | K | KH | Y | Lecture | Written |  | ENT |  |
| AN36.3 | Describe the boundaries and clinical significance of pyriform fossa  | K | KH | N | Lecture | Written |  | ENT |  |
| AN36.4 | Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess                               | K | KH | N | Lecture | Written |  | ENT |  |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------|---------------------------|
| AN36.5 | Describe the clinical significance of Killian's dehiscence   | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                  |                           |
| AN37.1 | Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply                                       | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                  |                           |
| AN37.2 | Describe location and functional anatomy of paranasal sinuses  | K                 | KH                     | Y             | Lecture  | Written                              |                                       | ENT                  |                           |
| AN37.3 | Describe anatomical basis of sinusitis & maxillary sinus tumours   | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                  |                           |
| AN38.1 | Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                  |                           |
| AN38.2 | Describe the anatomical aspects of laryngitis  | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                  |                           |
| AN38.3 | Describe anatomical basis of recurrent laryngeal nerve injury  | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                  |                           |
| AN39.2 | Explain the anatomical basis of hypoglossal nerve palsy  | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                  |                           |
| AN40.1 | Describe & identify the parts, blood supply and nerve supply of external ear   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                  |                           |
| AN40.2 | Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube                                | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | ENT                  |                           |
| AN40.3 | Describe the features of internal ear  | K                 | KH                     | N             | Lecture  | Written                              |                                       | ENT                  |                           |

| Number                    | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|---------------------------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-----------------------|---------------------------|
| AN40.4                    | Explain anatomical basis of otitis externa and otitis media   | K                 | KH                     | N             | Lecture                               | Written                        |                                       | ENT                   |                           |
| AN40.5                    | Explain anatomical basis of myringotomy   | K                 | KH                     | N             | Lecture                               | Written                        |                                       | ENT                   |                           |
| <b>Physiology</b>         |   |                   |                        |               |                                       |                                |                                       |                       |                           |
| PY10.13                   | Describe and discuss perception of smell and taste sensation  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written /Viva voce             |                                       | ENT                   |                           |
| PY10.15                   | Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing                              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       | ENT                   |                           |
| PY10.16                   | Describe and discuss pathophysiology of deafness. Describe hearing tests  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written /Viva voce             |                                       | ENT                   |                           |
| PY10.20                   | Demonstrate (i) hearing (ii) testing for smell and (iii) taste sensation in volunteer/ simulated environment              | S                 | P                      | Y             | DOAP sessions                         | Skill assessment/ Viva voce    | 1 each x 3                            | ENT, Ophthalmology    |                           |
| <b>Community Medicine</b> |   |                   |                        |               |                                       |                                |                                       |                       |                           |
| CM3.1                     | Describe the health hazards of air, water, noise, radiation and pollution.  | K                 | KH                     | Y             | Lecture, small group discussion       | Written/ Viva voce             |                                       | General Medicine, ENT |                           |
| <b>Dentistry</b>          |   |                   |                        |               |                                       |                                |                                       |                       |                           |
| DE4.1                     | Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity | K                 | K                      | N             | Lecture                               | Viva voce                      |                                       | Pathology             | ENT                       |
| DE4.2                     | Discuss the role of etiological factors in the formation of precancerous /cancerous lesions                               | K                 | KH                     | Y             | Lecture, Small group discussion       | Viva voce                      |                                       | Pathology             | ENT                       |
| DE4.3                     | Identify potential pre-cancerous /cancerous lesions   | S                 | SH                     | N             | Observation, Bed side clinics         | Skill assessment               |                                       | Pathology             | ENT                       |

| Number                  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-------------------------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| DE4.4                   | Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors   | A/C               | SH                     | Y             | DOAP session                          | Document in Log book           | 2                                     | Pathology            | ENT                       |
| <b>General Medicine</b> |  |                   |                        |               |                                       |                                |                                       |                      |                           |
| IM24.17                 | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | ENT                       |
| <b>Pediatrics</b>       |  |                   |                        |               |                                       |                                |                                       |                      |                           |
| PE14.2                  | Discuss the risk factors, clinical features, Diagnosis and management of Kerosene ingestion  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.1                  | Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.2                  | Discuss the etio-pathogenesis of Pharyngo Tonsillitis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.3                  | Discuss the clinical features and management of Pharyngo Tonsillitis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.4                  | Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM)  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.5                  | Discuss the etio-pathogenesis, clinical features and management of Epiglottitis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.6                  | Discuss the etio-pathogenesis, clinical features and management of Acute laryngo- trachea-bronchitis   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.7                  | Discuss the etiology, clinical features and management of Stridor in children  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE28.8                  | Discuss the types, clinical presentation, and management of foreign body aspiration in infants and children  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |

| Number                 | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|------------------------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| PE28.9                 | Elicit, document and present age appropriate history of a child with upper respiratory problem including Stridor   | S                 | SH                     | Y             | Bedside clinics, skill lab              | Skill Assessment               |                                       | ENT                  |                           |
| PE28.10                | Perform otoscopic examination of the ear   | S                 | SH                     | Y             | DOAP session                            | Skill Assessment               |                                       | ENT                  |                           |
| PE28.11                | Perform throat examination using tongue depressor  | S                 | SH                     | Y             | DOAP session                            | Skill Assessment               |                                       | ENT                  |                           |
| PE28.12                | Perform examination of the nose  | S                 | P                      | Y             | DOAP session                            | Skill Assessment               |                                       | ENT                  |                           |
| PE28.17                | Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case of management. Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in pediatric chest X-rays | S                 | P                      | Y             | Bedside clinics, Small group discussion | Skills Assessment              | 3                                     | ENT, Radiodiagnosis  |                           |
| PE31.1                 | Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children   | K                 | KH                     | Y             | Lecture<br>Small group discussion       | Written/ Viva voce             |                                       | ENT                  |                           |
| PE31.3                 | Describe the etio-pathogenesis, clinical features and management of Atopic dermatitis in children  | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | ENT                  |                           |
| <b>General Surgery</b> |  |                   |                        |               |   |                                |                                       |                      |                           |
| SU20.1                 | Describe etiopathogenesis of oral cancer, symptoms and signs of pharyngeal cancer. Enumerate the appropriate investigations and discuss the principles of treatment.   | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       | ENT                  |                           |

**OBSTETRICS & GYNECOLOGY (CODE: OG)**





| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration        | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|--------------------------------|---------------------------|
| <b>OBSTETRICS &amp; GYNAECOLOGY</b>   |   |                                     |                        |               |  |                                |                                       |                                |                           |
| <b>Topic: Demographic and Vital Statistics</b>  |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                                |                           |
| OG1.1   | Define and discuss birth rate, maternal mortality and morbidity   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Short notes                    |                                       | Community Medicine             |                           |
| OG1.2   | Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and morbidity audit   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Short notes                    |                                       | Community Medicine             | Pediatrics                |
| OG1.3   | Define and discuss still birth and abortion   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Short notes                    |                                       | Forensic Medicine & Toxicology |                           |
| <b>Topic: Anatomy of the female reproductive tract (Basic anatomy and embryology)</b> |   | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                                |                           |
| OG2.1   | Describe and discuss the development and anatomy of the female reproductive tract, relationship to other pelvic organs, applied anatomy as related to Obstetrics and Gynaecology. | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Theory/ Skill station          |                                       | Human Anatomy                  |                           |
| <b>Topic: Physiology of conception</b>  |   | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                                |                           |
| OG3.1   | Describe the physiology of ovulation, menstruation, fertilization, implantation and gametogenesis.  | K                                   | K                      | Y             | Lecture, seminars  | Theory                         |                                       | Physiology                     |                           |
| <b>Topic: Development of the fetus and the placenta</b>                               |   | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                                |                           |
| OG4.1   | Describe and discuss the basic embryology of fetus, factors influencing fetal growth and development, anatomy and physiology of placenta, and teratogenesis                       | K                                   | K                      | Y             | Lecture, Small group discussion                                | Theory                         |                                       | Human Anatomy                  |                           |

| Number   | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method               | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|---|-------------------|------------------------|---------------|--|--|---------------------------------------|-------------------------|---------------------------|
| <b>Topic: Preconception counselling</b> <span style="float: right;">Number of competencies:(02)      Number of procedures that require certification : (NIL)</span>      |   |                   |                        |               |  |  |                                       |                         |                           |
| OG5.1  | Describe, discuss and identify pre-existing medical disorders and discuss their management; discuss evidence-based intrapartum care   | K/S               | SH                     | Y             | Lecture, Bedside clinics                         | Theory/ clinical assessment                  |                                       |                         |                           |
| OG5.2  | Determine maternal high risk factors and verify immunization status   | K/S               | SH                     | Y             | Lecture, Bedside clinics                         | Theory/ clinical assessment                  |                                       |                         |                           |
| <b>Topic: Diagnosis of pregnancy</b> <span style="float: right;">Number of competencies:(01)      Number of procedures that require certification : (NIL)</span>         |   |                   |                        |               |  |  |                                       |                         |                           |
| OG6.1  | Describe, discuss and demonstrate the clinical features of pregnancy, derive and discuss its differential diagnosis, elaborate the principles underlying and interpret pregnancy tests.         | S                 | SH                     | Y             | Lecture, Small group discussion, Bedside clinics | Theory/<br>Clinical assessment/<br>Viva voce |                                       |                         |                           |
| <b>Topic: Maternal Changes in pregnancy</b> <span style="float: right;">Number of competencies: (01)      Number of procedures that require certification : (NIL)</span> |   |                   |                        |               |  |  |                                       |                         |                           |
| OG7.1  | Describe and discuss the changes in the genital tract, cardiovascular system, respiratory, haematology, renal and gastrointestinal system in pregnancy  | K                 | KH                     | Y             | Lecture, seminars                                | Theory                                       |                                       | Physiology              |                           |
| <b>Topic: Antenatal Care</b> <span style="float: right;">Number of competencies: (08)      Number of procedures that require certification : (NIL)</span>                |   |                   |                        |               |  |  |                                       |                         |                           |
| OG8.1  | Enumerate, describe and discuss the objectives of antenatal care, assessment of period of gestation; screening for high-risk factors.   | K                 | KH                     | Y             | Small group discussion, Bedside clinics, Lecture | Written/ Viva voce/<br>Skill assessment      |                                       | Community Medicine      |                           |
| OG8.2  | Elicit document and present an obstetric history including menstrual history, last menstrual period, previous obstetric history, comorbid conditions, past medical history and surgical history | K/S               | SH                     | Y             | Small group discussion, Bedside clinics, Lecture | Written/ Viva voce/<br>Skill assessment      |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------|---------------------------|
| OG8.3  | Describe, demonstrate, document and perform an obstetrical examination including a general and abdominal examination and clinical monitoring of maternal and fetal well-being;                           | K/S               | SH                     | Y             | Bed side clinic, DOAP session                        | Skill assessment                        |                                       |                         |                           |
| OG8.4  | Describe and demonstrate clinical monitoring of maternal and fetal well-being  | K/S               | SH                     | Y             | Bedside clinic, DOAP session, Small group discussion | Skill assessment/<br>Written/ Viva voce |                                       |                         |                           |
| OG8.5  | Describe and demonstrate pelvic assessment in a model  | K/S               | SH                     | Y             | DOAP session   | Skill assessment                        |                                       |                         |                           |
| OG8.6  | Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy   | K/S               | SH                     | Y             | DOAP session,<br>Bedside clinic                      | Skill assessment                        |                                       |                         |                           |
| OG8.7  | Enumerate the indications for and types of vaccination in pregnancy  | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       |                         |                           |
| OG8.8  | Enumerate the indications and describe the investigations including the use of ultrasound in the initial assessment and monitoring in pregnancy  | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       |                         |                           |
| <b>Topic: Complications in early pregnancy</b> <span style="margin-left: 200px;"><b>Number of competencies: (05)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |               |  |   |                                       |                         |                           |
| OG9.1  | Classify, define and discuss the aetiology and management of abortions including threatened, incomplete, inevitable, missed and septic   | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       |                         |                           |
| OG9.2  | Describe the steps and observe/ assist in the performance of an MTP evacuation   | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic                      | Viva voce                               |                                       | Forensic<br>Medicine    |                           |
| OG9.3  | Discuss the aetiology, clinical features, differential diagnosis of acute abdomen in early pregnancy (with a focus on ectopic pregnancy) and enumerate the principles of medical and surgical management | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce                      |                                       |                         |                           |

| Number                                       | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                           | Suggested<br>Assessment method                     | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|---|--------------------------------------|------------------------|---------------|---|--|---------------------------------------|-------------------------|---------------------------|
| OG9.4  | Discuss the clinical features, laboratory investigations, ultrasonography, differential diagnosis, principles of management and follow up of gestational trophoblastic neoplasms                            | K                                    | KH                     | Y             | Lecture, Small group discussion                                 | Written/ Viva voce                                 |                                       |                         | Radiodiagnosis            |
| OG9.5  | Describe the etiopathology, impact on maternal and fetal health and principles of management of hyperemesis gravidarum  | K                                    | KH                     | Y             | Lecture, Small group discussion                                 | Written/ Viva voce                                 |                                       |                         |                           |
| <b>Topic: Antepartum haemorrhage</b>         |   | <b>Number of competencies: (02)</b>  |                        |               | <b>Number of competencies that require certification: (NIL)</b> |  |                                       |                         |                           |
| OG10.1                                       | Define, classify and describe the aetiology, pathogenesis, clinical features, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy                                 | K                                    | KH                     | Y             | Lecture, Small group discussion, Bedside clinic                 |  |                                       |                         |                           |
| OG10.2                                       | Enumerate the indications and describe the appropriate use of blood and blood products, their complications and management.   | K                                    | KH                     | Y             | Lecture, Small group discussion                                 |  |                                       | Pathology               |                           |
| <b>Topic: Multiple pregnancies</b>           |   | <b>Number of competencies: (01)</b>  |                        |               | <b>Number of procedures that require certification : (NIL)</b>  |  |                                       |                         |                           |
| OG11.1                                       | Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies  | K                                    | KH                     | Y             | Lecture, Small group discussion, Bedside clinics                | Theory/ OSCE/<br>Clinical assessment/<br>Viva voce |                                       |                         |                           |
| <b>Topic: Medical Disorders in pregnancy</b> |   | <b>Number of competencies: ( 08)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b>  |  |                                       |                         |                           |
| OG12.1                                       | Define, classify and describe the etiology and pathophysiology, early detection, investigations; principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia. | K                                    | KH                     | Y             | Lecture, Small group discussion, Bedside clinics                | Written/ Viva voce/<br>Skill assessment            |                                       |                         | General Medicine          |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------|---------------------------|
| OG12.2 | Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of anemia in pregnancy                   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                         | General Medicine          |
| OG12.3 | Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, criteria, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of diabetes in pregnancy       | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                         | General Medicine          |
| OG12.4 | Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, criteria, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                         | General Medicine          |
| OG12.5 | Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of urinary tract infections in pregnancy   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                         | General Medicine          |
| OG12.6 | Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of liver disease in pregnancy  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                         | General Medicine          |
| OG12.7 | Describe and discuss screening, risk factors, management of mother and newborn with HIV  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                         | General Medicine          |
| OG12.8 | Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of isoimmunization in pregnancy   | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ Viva voce/<br>Skill assessment |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                | Suggested<br>Assessment method                     | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|--|--|---------------------------------------|-------------------------|---------------------------|
| <b>Topic: Labour</b> <span style="margin-left: 200px;"><b>Number of competencies: (05)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (01)</b></span>                                       |  |                   |                        |               |  |  |                                       |                         |                           |
| OG13.1   | Enumerate and discuss the physiology of normal labor, mechanism of labor in occipito-anterior presentation; monitoring of labor including partogram; conduct of labor, pain relief; principles of induction and acceleration of labor; management of third stage of labor. | K/S               | KH                     | Y             | Lecture, Small group discussion (with models/ videos/ AV aids, etc.) | Theory/Clinical assessment/<br>Viva voce           |                                       |                         |                           |
| OG13.2   | Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy  | K/S               | KH                     | Y             | Lecture, Small group discussion, Bedside clinics                     | Theory/ OSCE/<br>Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG13.3   | Observe/ assist in the performance of an artificial rupture of membranes   | S                 | SH                     | N             | DOAP session, Bedside clinic   | Skill assessment                                   |                                       |                         |                           |
| OG13.4   | Demonstrate the stages of normal labor in a simulated environment / mannequin and counsel on methods of safe abortion.   | S                 | SH                     | Y             | DOAP session   | Skill assessment                                   |                                       |                         |                           |
| OG13.5   | Observe and assist the conduct of a normal vaginal delivery  | S                 | P                      | Y             | DOAP session   | Log book   | 10                                    |                         |                           |
| <b>Topic: Abnormal Lie and Presentation; Maternal Pelvis</b> <span style="margin-left: 200px;"><b>Number of competencies: (04)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that need certification : (NIL)</b></span> |  |                   |                        |               |  |  |                                       |                         |                           |
| OG14.1   | Enumerate and discuss the diameters of maternal pelvis and types   | K                 | KH                     | Y             | Lecture, Small group discussion DOAP session, Bedside clinic         | Written/ Viva voce/<br>Skill assessment            |                                       | Human Anatomy           |                           |
| OG14.2   | Discuss the mechanism of normal labor, Define and describe obstructed labor, its clinical features; prevention; and management   | K                 | KH                     | Y             | Lecture, Small group discussion DOAP session, Bedside clinic         | Written/ Viva voce/<br>Skill assessment            |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                        | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------|---------------------------|
| OG14.3  | Describe and discuss rupture uterus, causes, diagnosis and management.  | K                 | KH                     | Y             | Lecture, Small group discussion DOAP session, Bedside clinic | Written/ Viva voce/<br>Skill assessment |                                       |                         |                           |
| OG14.4  | Describe and discuss the classification; diagnosis; management of abnormal labor  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics             | Written/ skill assessment               |                                       |                         |                           |
| <b>Topic: Operative obstetrics</b> <span style="float: right;">Number of competencies: (02)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span>             |   |                   |                        |               |  |   |                                       |                         |                           |
| OG15.1  | Enumerate and describe the indications and steps of common obstetric procedures, technique and complications: Episiotomy, vacuum extraction; low forceps; Caesarean section, assisted breech delivery; external cephalic version; cervical cerclage               | S                 | KH                     | Y             | Lecture, Small group discussion, seminars                    | Written/ skill assessment               |                                       |                         |                           |
| OG15.2  | Observe and assist in the performance of an episiotomy and demonstrate the correct suturing technique of an episiotomy in a simulated environment. Observe/Assist in operative obstetrics cases – including - CS, Forceps, vacuum extraction, and breech delivery | S                 | SH                     | Y             | DOAP session, Bedside clinic                                 | Skill assessment                        |                                       |                         |                           |
| <b>Topic: Complications of the third stage</b> <span style="float: right;">Number of competencies: (03)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span> |   |                   |                        |               |  |   |                                       |                         |                           |
| OG16.1  | Enumerate and discuss causes, prevention, diagnosis, management, appropriate use of blood and blood products in postpartum haemorrhage  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics             | Written/ skill assessment               |                                       |                         |                           |
| OG16.2  | Describe and discuss uterine inversion – causes, prevention, diagnosis and management.  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics             | Written/ Viva voce                      |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|-------------------------|---------------------------|
| OG16.3  | Describe and discuss causes, clinical features, diagnosis, investigations; monitoring of fetal well-being, including ultrasound and fetal Doppler; principles of management; prevention and counselling in intrauterine growth retardation | K/S               | KH                     | Y             | Lecture, Small group discussion, Bedside clinics | Written/ skill assessment/ Viva voce |                                       |                         |                           |
| <b>Topic: Lactation</b> <span style="margin-left: 200px;"><b>Number of competencies: (03)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>            |  |                   |                        |               |  |                                      |                                       |                         |                           |
| OG17.1  | Describe and discuss the physiology of lactation   | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                   |                                       |                         |                           |
| OG17.2  | Counsel in a simulated environment, care of the breast, importance and the technique of breast feeding   | S/A/C             | SH                     | Y             | DOAP session                                     | Skill assessment                     |                                       |                         |                           |
| OG17.3  | Describe and discuss the clinical features, diagnosis and management of mastitis and breast abscess  | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                   |                                       |                         |                           |
| <b>Topic: Care of the new born</b> <span style="margin-left: 200px;"><b>Number of competencies: (04)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |  |                   |                        |               |  |                                      |                                       |                         |                           |
| OG18.1  | Describe and discuss the assessment of maturity of the newborn, diagnosis of birth asphyxia, principles of resuscitation, common problems.   | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                   |                                       |                         | Pediatrics                |
| OG18.2  | Demonstrate the steps of neonatal resuscitation in a simulated environment   | S                 | SH                     | Y             | DOAP session                                     | Skill assessment                     |                                       |                         | Pediatrics                |
| OG18.3  | Describe and discuss the diagnosis of birth asphyxia   | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                   |                                       |                         | Pediatrics                |
| OG18.4  | Describe the principles of resuscitation of the newborn and enumerate the common problems encountered  | K                 | KH                     | Y             | Lecture, Small group discussion                  | Written/ Viva voce                   |                                       |                         | Pediatrics                |





| Number                                    | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------|---------------------------|
| <b>Topic: Contraception</b>               |   | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                         |                           |
| OG21.1                                    | Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including Ocs, male contraception, emergency contraception and IUCD | K                                   | KH                     | Y             | Lecture, Small group discussion, Bedside clinics               | Written/ Viva voce/<br>Skill assessment |                                       | Community medicine      |                           |
| OG21.2                                    | Describe & discuss PPIUCD programme   | K                                   | K/KH                   | Y             | Lecture, Small group discussion                                | Written/Viva voce                       |                                       |                         |                           |
| <b>Topic: Vaginal discharge</b>           |   | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification :(NIL)</b>  |   |                                       |                         |                           |
| OG22.1                                    | Describe the clinical characteristics of physiological vaginal discharge.   | K                                   | KH                     | Y             | Lecture  | Theory                                  |                                       |                         |                           |
| OG22.2                                    | Describe and discuss the etiology (with special emphasis on Candida, T. vaginalis, bacterial vaginosis), characteristics, clinical diagnosis, investigations, genital hygiene, management of common causes and the syndromic management       | K                                   | KH                     | Y             | Lecture, Bedside clinics                                       | Written/ Viva voce/<br>Skill assessment |                                       |                         |                           |
| <b>Topic: Normal and abnormal puberty</b> |   | <b>Number of competencies: (03)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                         |                           |
| OG23.1                                    | Describe and discuss the physiology of puberty, features of abnormal puberty, common problems and their management  | K                                   | KH                     | Y             | Lecture, Small group discussion, Bedside clinics               | Written/ Viva voce                      |                                       |                         |                           |
| OG23.2                                    | Enumerate the causes of delayed puberty. Describe the investigation and management of common causes   | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                         |                           |
| OG23.3                                    | Enumerate the causes of precocious puberty  | K                                   | K                      | N             | Lecture, Small group discussion                                | Written/ Viva voce                      |                                       |                         |                           |

| Number                                      | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|-------------------------|---------------------------|
| <b>Topic: Abnormal uterine bleeding</b>     |   | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>  |                                |                                       |                         |                           |
| OG24.1                                      | Define, classify and discuss abnormal uterine bleeding, its aetiology, clinical features, investigations, diagnosis and management  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                         |                           |
| <b>Topic: Amenorrhea</b>                    |   | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                         |                           |
| OG25.1                                      | Describe and discuss the causes of primary and secondary amenorrhea, its investigation and the principles of management.  | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                         |                           |
| <b>Topic: Genital injuries and fistulae</b> |   | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                         |                           |
| OG26.1                                      | Describe and discuss the etiopathogenesis, clinical features; investigation and implications on health and fertility and management of endometriosis and adenomyosis              | K/S                                 | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                         |                           |
| OG26.2                                      | Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae   | K                                   | KH                     | N             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                         | General Surgery           |
| <b>Topic: Genital infections</b>            |   | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                         |                           |
| OG27.1                                      | Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of sexually transmitted infections | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                         |                           |
| OG27.2                                      | Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of genital tuberculosis            | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                         |                           |
| OG27.3                                      | Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of HIV                             | K                                   | KH                     | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method               | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|--|--|-------------------|------------------------|---------------|---------------------------------------|--|---------------------------------------|-------------------------|---------------------------|
| OG27.4   | Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce                           |                                       |                         |                           |
| <b>Topic: Infertility</b> <span style="float: right;"><b>Number of competencies:(04)</b> <b>Number of procedures that require certification : (NIL)</b></span>         |  |                   |                        |               |                                       |  |                                       |                         |                           |
| OG28.1   | Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of infertility – methods of tubal patency, ovulation induction, assisted reproductive techniques | K                 | KH                     | Y             | Lecture, seminars, Bedside clinics    | Written/ Viva voce                           |                                       |                         |                           |
| OG28.2   | Enumerate the assessment and restoration of tubal latency  | K                 | K                      | N             | Lecture, seminars, Bedside clinics    | Written/ Viva voce                           |                                       |                         |                           |
| OG28.3   | Describe the principles of ovulation induction   | K                 | KH                     | Y             | Lecture, seminars, Bedside clinics    | Written/ Viva voce                           |                                       |                         |                           |
| OG28.4   | Enumerate the various Assisted Reproduction Techniques   | K                 | K                      | N             | Lecture, seminars, Bedside clinics    | Written/ Viva voce                           |                                       |                         |                           |
| <b>Topic: Uterine fibroids</b> <span style="float: right;"><b>Number of competencies: (01)</b> <b>Number of procedures that require certification : (NIL)</b></span>   |  |                   |                        |               |                                       |  |                                       |                         |                           |
| OG29.1   | Describe and discuss the etiology; pathology; clinical features; differential diagnosis; investigations; principles of management, complications of fibroid uterus   | K/A/C             | KH                     | Y             | Lecture, Bedside clinics              | Theory/ OSCE/ Clinical Assessment/ Viva voce |                                       |                         |                           |
| <b>Topic: PCOS and hirsutism</b> <span style="float: right;"><b>Number of competencies: (02)</b> <b>Number of procedures that require certification : (NIL)</b></span> |  |                   |                        |               |                                       |  |                                       |                         |                           |
| OG30.1   | Describe and discuss the etiopathogenesis; clinical features; differential diagnosis; investigations; management, complications of PCOS  | K/A/C             | KH                     | Y             | Lecture                               | Theory/ OSCE/ Clinical Assessment/ Viva voce |                                       |                         |                           |
| OG30.2   | Enumerate the causes and describe the investigations and management of hyperandrogenism  | K                 | KH                     | N             |                                       | Theory/ OSCE/ Clinical Assessment/ Viva voce |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method          | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
|---|--|-------------------------------------|------------------------|---------------|--|---|---------------------------------------|-------------------------|---------------------------|
| <b>Topic: Uterine prolapse</b>  |  | <b>Number of competencies: (01)</b> |                        |               | <b>Number of procedures that require certification :(NIL)</b>  |   |                                       |                         |                           |
| OG31.1  | Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus                 | K/S                                 | KH                     | Y             | Lecture, small group discussion, Bedside clinics               | Written/ Viva voce/<br>Skill assessment |                                       |                         |                           |
| <b>Topic: Menopause</b>   |  | <b>Number of competencies: (02)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                         |                           |
| OG32.1  | Describe and discuss the physiology of menopause, symptoms, prevention, management and the role of hormone replacement therapy.  | K                                   | KH                     | Y             | Lecture, small group discussion, Bedside clinics               | Written/ Viva voce/<br>Skill assessment |                                       |                         |                           |
| OG32.2  | Enumerate the causes of postmenopausal bleeding and describe its management  | K                                   | KH                     | Y             | Lecture, small group discussion Bedside clinics                | Written/ Viva voce                      |                                       |                         |                           |
| <b>Topic: Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix</b> |  | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |   |                                       |                         |                           |
| OG33.1  | Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer                                       | K/S                                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinics               | Written/ Viva voce/<br>Skill assessment |                                       |                         |                           |
| OG33.2  | Describe the principles of management including surgery and radiotherapy of Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix  | K                                   | KH                     | Y             | Lecture, Small group discussion, Bedside clinics               | Written/ Viva voce/<br>Skill assessment |                                       |                         | General Surgery           |
| OG33.3  | Describe and demonstrate the screening for cervical cancer in a simulated environment  | K/S                                 | SH                     | Y             | DOAP session   | Skill assessment                        |                                       | Community<br>Medicine   |                           |
| OG33.4  | Enumerate the methods to prevent cancer of cervix including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine (VILI), pap smear and colposcopy | K                                   | K                      | Y             | Lecture, Small group discussion, Bedside clinics               | Viva voce/ Written                      |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                             | Suggested<br>Assessment method                     | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
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| <b>Topic: Benign and malignant diseases of the uterus and the ovaries</b> <b>Number of competencies: (04)</b> <b>Number of procedures that require certification : (NIL)</b> |   |                   |                        |               |   |  |                                       |                         |                           |
| OG34.1   | Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer   | K                 | KH                     | Y             | Lecture,<br>Bedside clinics                                       | Viva voce/ Written/<br>skill assessment            |                                       |                         |                           |
| OG34.2   | Describe and discuss the etiology, pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principal of management including staging laparotomy  | K/S               | KH                     | Y             | Lecture   | Theory/ OSCE/ clinical<br>assessment/<br>Viva voce |                                       |                         |                           |
| OG34.3   | Describe and discuss the etiology, pathology, classification, staging, clinical features, differential diagnosis, investigations and management of gestational trophoblastic disease  | K/S               | KH                     | Y             | Lecture   | Theory/ OSCE/ clinical<br>assessment/              |                                       |                         |                           |
| OG34.4   | Operative Gynaecology : Understand and describe the technique and complications: Dilatation & Curettage (D&C); EA-ECC; cervical biopsy; abdominal hysterectomy; myomectomy; surgery for ovarian tumours; staging laparotomy; vaginal hysterectomy including pelvic floor repair; Fothergill's operation, Laparoscopy; hysteroscopy; management of postoperative complications | K/S               | SH                     | Y             | Videos, on manikins,<br>observe procedures<br>and surgeries in OR | Viva voce  |                                       |                         |                           |
| <b>Topic: Obstetrics &amp; Gynecological skills - I</b> <b>Number of competencies: (17)</b> <b>Number of procedures that require certification : (NIL)</b>                   |   |                   |                        |               |   |  |                                       |                         |                           |
| OG35.1   | Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (per-rectal and per-vaginal)  | K/S               | SH                     | Y             | Bedside clinics   | Clinical assessment/<br>Viva voce                  |                                       |                         |                           |
| OG35.2   | Arrive at a logical provisional diagnosis after examination.  | K/S               | SH                     | Y             | Bedside clinics   | Clinical assessment/<br>Viva voce                  |                                       |                         |                           |
| OG35.3   | Recognize situations, which call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment.   | K/S               | SH                     | Y             | Bedside clinics   | Clinical assessment/<br>Viva voce                  |                                       |                         |                           |

| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method    | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
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| OG35.4  | Demonstrate interpersonal and communication skills befitting a physician in order to discuss illness and its outcome with patient and family | A/C               | SH                     | Y             | Bedside clinics                       | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG35.5  | Determine gestational age, EDD and obstetric formula   | K/S               | SH                     | Y             | Bedside clinics                       | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG35.6  | Demonstrate ethical behavior in all aspects of medical practice.   | A/C               | SH                     | Y             | Bedside clinics                       | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG35.7  | Obtain informed consent for any examination / procedure  | S                 | SH                     | Y             | Bedside clinics                       | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG35.8  | Write a complete case record with all necessary details  | S                 | SH                     | Y             | Bedside clinics                       | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG35.9  | Write a proper discharge summary with all relevant information   | S                 | SH                     | Y             | Bedside clinics                       | Clinical assessment               |                                       |                         |                           |
| OG35.10 | Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.                             | S                 | SH                     | Y             | Bedside clinics                       | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG35.11 | Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis and counsel patients          | S                 | SH                     | Y             | DOAP session                          | Skill assessment                  |                                       |                         |                           |
| OG35.12 | Obtain a PAP smear in a stimulated environment   | S                 | SH                     | Y             | DOAP session                          | Skill assessment                  |                                       |                         |                           |
| OG35.13 | Demonstrate the correct technique to perform artificial rupture of membranes in a simulated / supervised environment                         | S                 | SH                     | Y             | DOAP session                          | Skill assessment                  |                                       |                         |                           |
| OG35.14 | Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment                                  | S                 | SH                     | Y             | DOAP session                          | Skill assessment                  |                                       |                         |                           |
| OG35.15 | Demonstrate the correct technique to insert and remove an IUD in a simulated/ supervised environment   | S                 | SH                     | Y             | DOAP session                          | Skill assessment                  |                                       |                         |                           |

| Number   | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method    | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration |
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| OG35.16  | Diagnose and provide emergency management of antepartum and postpartum hemorrhage in a simulated / guided environment   | K/S               | SH                     | Y             | DOAP session                                  | Skill assessment                  |                                       |                         |                           |
| OG35.17  | Demonstrate the correct technique of urinary catheterisation in a simulated/ supervised environment   | S                 | SH                     | Y             | DOAP session                                  | Skill assessment                  |                                       |                         |                           |
| <b>Topic: Obstetrics &amp; Gynecological skills - II</b> <span style="float: right;">Number of competencies: (03)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>   |   |                   |                        |               |   |                                   |                                       |                         |                           |
| OG36.1   | Plan and institute a line of treatment, which is need based, cost effective and appropriate for common conditions taking into consideration<br>(a) Patient<br>(b) Disease<br>(c) Socio-economic status<br>(d) Institution/ Governmental guidelines. | K/S               | SH                     | Y             | Bedside clinics,<br>Small group<br>discussion | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG36.2   | Organise antenatal, postnatal, well-baby and family welfare clinics   | K/S               | KH                     | Y             | Bedside clinics                               | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG36.3   | Demonstrate the correct technique of punch biopsy of uterus in a simulated/ supervised environment  | S                 | SH                     | Y             | Bedside clinics                               | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| <b>Topic: Obstetrics &amp; Gynecological skills - III</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span> |   |                   |                        |               |   |                                   |                                       |                         |                           |
| OG37.1   | Observe and assist in the performance of a Caesarean section  | K/S/A/C           | SH                     | Y             | Bedside clinics,<br>Small group<br>discussion | Log book                          |                                       |                         |                           |
| OG37.2   | Observe and assist in the performance of Laparotomy   | K/S/A/C           | SH                     | Y             | Bedside clinics,<br>Small group<br>discussion | Clinical assessment/<br>Viva voce |                                       |                         |                           |
| OG37.3   | Observe and assist in the performance of Hysterectomy – abdominal/vaginal   | K/S/A/C           | SH                     | Y             | Bedside clinics,<br>Small group<br>discussion | Clinical assessment/<br>Viva voce |                                       |                         |                           |





| Number               | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical<br>Integration                   | Horizontal<br>Integration |
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| <b>Integration</b>   |  |                   |                        |               |  |                                      |                                       |   |                           |
| <b>Human Anatomy</b> |  |                   |                        |               |  |                                      |                                       |   |                           |
| AN48.8               | Mention the structures palpable during Vaginal & Rectal examination  | K                 | KH                     | N             | Lecture  | Written                              |                                       | Obstetrics & Gynaecology, General Surgery |                           |
| AN49.1               | Describe & demonstrate the Superficial & Deep perineal pouch (boundaries and contents)   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ skill assessment |                                       | Obstetrics & Gynaecology                  |                           |
| AN49.2               | Describe & identify Perineal body  | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session            | Viva voce/ skill assessment          |                                       | Obstetrics & Gynaecology                  |                           |
| AN49.5               | Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure   | K                 | KH                     | N             | Lecture  | Written                              |                                       | Obstetrics & Gynaecology                  |                           |
| AN52.8               | Describe the development of male & female reproductive system  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                   |                                       | Obstetrics & Gynaecology                  |                           |
| AN53.1               | Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups | K/S               | SH                     | Y             | Lecture, DOAP session                                    | Viva voce/ skill assessment          |                                       | General Surgery, Obstetrics & Gynaecology |                           |
| AN53.2               | Demonstrate anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet                                   | K/S               | SH                     | Y             | Lecture, DOAP session                                    | Viva voce/ skill assessment          |                                       | Obstetrics & Gynaecology                  |                           |
| AN53.3               | Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis   | K/S               | SH                     | Y             | Lecture, DOAP session                                    | Viva voce/ skill assessment          |                                       | Obstetrics & Gynaecology                  |                           |
| AN64.3               | Describe various types of open neural tube defects with its embryological basis  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                   |                                       | Obstetrics & Gynaecology, Pediatrics      |                           |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration                    | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|--|---------------------------|
| AN75.5 | Describe the principles of genetic counselling   | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Pediatrics,<br>Obstetrics &<br>Gynaecology |                           |
| AN77.1 | Describe the uterine changes occurring during the menstrual cycle  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.2 | Describe the synchrony between the ovarian and menstrual cycles  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.3 | Describe spermatogenesis and oogenesis along with diagrams   | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.4 | Describe stages and consequences of fertilisation  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.5 | Enumerate and describe the anatomical principles underlying contraception  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN77.6 | Describe teratogenic influences; fertility and sterility, surrogate motherhood, social significance of "sex-ratio".      | K                 | KH                     | N             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN78.3 | Describe the process of implantation & common abnormal sites of implantation   | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN78.5 | Describe in brief abortion: decidual reaction, pregnancy test  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN79.4 | Describe the development of somites and intra-embryonic coelom   | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN79.5 | Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects | K                 | KH                     | N             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |
| AN79.6 | Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein                         | K                 | KH                     | N             | Lecture                               | Written                        |                                       | Obstetrics &<br>Gynaecology                |                           |

| Number            | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration                      | Horizontal<br>Integration |
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| AN80.3            | Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| AN80.4            | Describe embryological basis of twinning in monozygotic & dizygotic twins   | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| AN80.5            | Describe role of placental hormones in uterine growth & parturition   | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| AN80.6            | Explain embryological basis of estimation of fetal age.   | K                 | KH                     | N             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| AN80.7            | Describe various types of umbilical cord attachments  | K                 | KH                     | N             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| AN81.1            | Describe various methods of prenatal diagnosis  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| AN81.2            | Describe indications, process and disadvantages of amniocentesis  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| AN81.3            | Describe indications, process and disadvantages of chorion villus biopsy  | K                 | KH                     | Y             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                     |                           |
| <b>Physiology</b> |   |                   |                        |               |                                       |                                |                                       |  |                           |
| PY9.6             | Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Community Medicine |                           |
| PY9.8             | Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it. | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                     |                           |

| Number              | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration                              | Horizontal<br>Integration |
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| PY9.10              | Discuss the physiological basis of various pregnancy tests  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                             |                           |
| PY9.11              | Discuss the hormonal changes and their effects during perimenopause and menopause   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                             |                           |
| PY9.12              | Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility.                       | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                             |                           |
| <b>Biochemistry</b> |   |                   |                        |               |                                       |                                |                                       |  |                           |
| BI10.1              | Describe cancer initiation, promotion, oncogenes & oncogene activation.   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| BI10.2              | Describe various biochemical tumor markers and the biochemical basis of cancer therapy.                                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| BI10.3              | Describe the cellular and humoral components of the immune system & describe the types and structure of antibody              | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Surgery, Pathology |                           |
| <b>Pathology</b>    |   |                   |                        |               |                                       |                                |                                       |  |                           |
| PA22.2              | Enumerate the indications describe the principles enumerate and demonstrate the steps of compatibility testing                | S                 | SH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                             |                           |
| PA30.1              | Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the cervix | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                             |                           |

| Number              | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration             | Horizontal<br>Integration |
|---------------------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| PA30.2              | Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| PA30.3              | Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| PA30.4              | Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| PA30.5              | Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| PA30.6              | Describe the etiology and morphologic features of cervicitis  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| PA30.7              | Describe the etiology, hormonal dependence, features and morphology of endometriosis  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| PA30.8              | Describe the etiology and morphologic features of adenomyosis   | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| PA30.9              | Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia  | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |
| <b>Pharmacology</b> |   |                   |                        |               |                                       |                                |                                       |                                     |                           |
| PH1.39              | Describe mechanism of action, types, doses, side effects, indications and contraindications of the drugs used for contraception   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | <b>Obstetrics &amp; Gynaecology</b> |                           |
| PH1.40              | Describe mechanism of action, types, doses, side effects, indications and contraindications of 1. Drugs used in the treatment of infertility, and 2. Drugs used in erectile dysfunction | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Obstetrics & Gynaecology            |                           |

| Number                                    | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration              | Horizontal<br>Integration |
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| PH1.41                                    | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce             |                                       | Obstetrics & Gynaecology             |                           |
| <b>Community Medicine</b>                 |  |                   |                        |               |  |                                |                                       |                                      |                           |
| CM9.2                                     | Define, calculate and interpret demographic indices including birth rate, death rate, fertility rates  | S                 | SH                     | Y             | Lecture, Small group discussion, DOAP sessions | Skill assessment               |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM9.5                                     | Describe the methods of population control   | K                 | KH                     | Y             | Small group discussion, Lecture                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology             |                           |
| CM10.1                                    | Describe the current status of Reproductive, maternal, newborn and Child Health  | K                 | KH                     | Y             | Small group discussion, Lecture                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.2                                    | Enumerate and describe the methods of screening high risk groups and common health problems  | K                 | KH                     | Y             | Small group discussion, Lecture                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.3                                    | Describe local customs and practices during pregnancy, childbirth, lactation and child feeding practices   | K                 | KH                     | Y             | Small group discussion, Lecture                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| CM10.4                                    | Describe the reproductive, maternal, newborn & child health (RMCH); child survival and safe motherhood interventions   | K                 | KH                     | Y             | Small group discussion, Lecture                | Written / Viva voce            |                                       | Obstetrics & Gynaecology, Pediatrics |                           |
| <b>Forensic Medicine &amp; Toxicology</b> |  |                   |                        |               |  |                                |                                       |                                      |                           |
| FM3.13                                    | Describe different types of sexual offences. Describe various sections of IPC regarding rape including definition of rape (Section 375 IPC), Punishment for Rape (Section 376 IPC) and recent amendments notified till date. | K                 | K/KH                   | Y             | Lecture, Small group discussion                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology             |                           |

| Number | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration              | Horizontal<br>Integration |
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| FM3.14 | SEXUAL OFFENCES<br>Describe and discuss the examination of the victim of an alleged case of rape, and the preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases.  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session | Written/ Viva voce/ OSCE       |                                       | Obstetrics & Gynaecology, Psychiatry |                           |
| FM3.15 | SEXUAL OFFENCES<br>Describe and discuss examination of accused and victim of sodomy, preparation of report, framing of opinion, preservation and despatch of trace evidences in such cases  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic, DOAP session | Written/ Viva voce/ OSCE       |                                       | Obstetrics & Gynaecology, Psychiatry |                           |
| FM3.16 | SEXUAL OFFENCES<br>Describe and discuss adultery and unnatural sexual offences - sodomy, incest, lesbianism, buccal coitus, bestiality, indecent assault and preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases. | K                 | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology             |                           |
| FM3.17 | Describe and discuss the sexual perversions fetishism, transvestism, voyeurism, sadism, necrophagia, masochism, exhibitionism, frotteurism, Necrophilia.  | K                 | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, Psychiatry |                           |
| FM3.18 | Describe anatomy of male and female genitalia, hymen and its types. Discuss the medico-legal importance of hymen. Define virginity, defloration, legitimacy and its medicolegal importance.   | K                 | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology             |                           |
| FM3.19 | Discuss the medicolegal aspects of pregnancy and delivery, signs of pregnancy, precipitate labour superfoetation, superfecundation and signs of recent and remote delivery in living and dead   | K                 | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology             |                           |
| FM3.20 | Discuss disputed paternity and maternity  | K                 | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology             |                           |
| FM3.21 | Discuss Pre-conception and Pre Natal Diagnostic Techniques (PCPNDT)- Prohibition of Sex Selection Act 2003 and Domestic Violence Act 2005   | K                 | K/KH                   | Y             | Lecture, Small group discussion                                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, AETCOM     |                           |



| Number                               | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration                    | Horizontal<br>Integration |
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| FM3.22                               | Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female                       | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology, General Medicine |                           |
| FM3.23                               | Discuss Sterilization of male and female, artificial insemination, Test Tube Baby, surrogate mother, hormonal replacement therapy with respect to appropriate national and state laws | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                   |                           |
| FM3.24                               | Discuss the relative importance of surgical methods of contraception (vasectomy and tubectomy) as methods of contraception in the national family Planning Programme                  | K                 | K/KH                   | N             | Lecture, Small group discussion       | Written                        |                                       | Obstetrics & Gynaecology                   |                           |
| FM3.25                               | Discuss the major results of the National Family Health Survey  | K                 | K/KH                   | N             | Lecture                               | Written                        |                                       | Obstetrics & Gynaecology                   |                           |
| FM3.26                               | Discuss the National Guidelines for accreditation, supervision & regulation of ART Clinics in India   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written                        |                                       | Obstetrics & Gynaecology                   |                           |
| FM3.27                               | Define, classify and discuss abortion, methods of procuring MTP and criminal abortion and complication of abortion: MTP Act 1971  | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       | Obstetrics & Gynaecology, AETCOM           |                           |
| FM3.28                               | Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion   | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/Viva voce              |                                       | Obstetrics & Gynaecology, AETCOM           |                           |
| <b>Dermatology &amp; Venereology</b> |   |                   |                        |               |                                       |                                |                                       |  |                           |
| DR10.11                              | Describe the etiology, diagnostic and clinical features and management of vaginal discharge   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       | Obstetrics & Gynaecology                   |                           |

| Number                  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration                     | Horizontal<br>Integration        |
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| <b>General Medicine</b> |  |                   |                        |               |                                       |                                |                                       |   |                                  |
| IM26.43                 | Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as they pertain to in vitro fertilisation donor insemination and surrogate motherhood | K                 | KH                     | N             | Small group discussion                | Written/ Viva voce             |                                       | Obstetrics & Gynaecology                    |                                  |
| <b>Radiodiagnosis</b>   |  |                   |                        |               |                                       |                                |                                       |   |                                  |
| RD1.13                  | Describe the components of the PC & PNDT Act and its medicolegal implications  | K                 | KH                     | Y             | Lecture, Small group discussion       |                                |                                       | Obstetrics & Gynaecology, Forensic Medicine |                                  |
| <b>Pediatrics</b>       |  |                   |                        |               |                                       |                                |                                       |   |                                  |
| PE7.1                   | Awareness on the cultural beliefs and practices of breast feeding  | K                 | K                      | N             | Lecture, Small group discussion       | Viva voce                      |                                       |   | Obstetrics & Gynaecology         |
| PE7.7                   | Perform breast examination and identify common problems during lactation such as retracted nipples, cracked nipples, breast engorgement, breast abscess                    | S                 | SH                     | Y             | Bed side clinics<br>Skill Lab         | Skill Assessment               |                                       |   | Obstetrics & Gynaecology         |
| PE7.8                   | Educate mothers on ante natal breast care and prepare mothers for lactation  | A/C               | SH                     | Y             | DOAP session                          | Document in Log Book           |                                       |   | Obstetrics & Gynaecology, AETCOM |
| PE7.9                   | Educate and counsel mothers for best practices in breast feeding   | A/C               | SH                     | Y             | DOAP session                          | Document in Log Book           |                                       |   | Obstetrics & Gynaecology, AETCOM |
| PE18.1                  | List and explain the components, plans , outcomes of Reproductive Child Health (RCH) program and appraise the monitoring and evaluation                                    | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine                          | Obstetrics & Gynaecology         |
| PE18.2                  | Explain preventive interventions for Child survival and safe motherhood  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Community Medicine                          | Obstetrics & Gynaecology         |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration                        |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-------------------------|--|
| PE18.3 | Conduct Antenatal examination of women independently and apply at-risk approach in antenatal care  | S                 | SH                     | Y             | Bed side clinics                      | Skill station                  |                                       | Community<br>Medicine   | Obstetrics &<br>Gynaecology                      |
| PE18.4 | Provide intra-natal care and conduct a normal Delivery in a simulated environment  | S                 | SH                     | Y             | DOAP session, Skills<br>lab           | Document in Log<br>Book        |                                       | Community<br>Medicine   | Obstetrics &<br>Gynaecology                      |
| PE18.5 | Provide intra-natal care and observe the conduct of a normal delivery  | S                 | SH                     | Y             | DOAP session                          | Document in Log<br>Book        |                                       |                         | Obstetrics &<br>Gynaecology                      |
| PE18.6 | Perform Postnatal assessment of newborn and mother, provide advice on breast feeding, weaning and on family planning                                   | S                 | SH                     | Y             | Bed side clinics, Skill<br>Lab        | Skill Assessment               |                                       | Community<br>Medicine   | Obstetrics &<br>Gynaecology                      |
| PE18.8 | Observe the implementation of the program by visiting the Rural Health Centre  | S                 | KH                     | Y             | Bed side clinics, Skill<br>Lab        | Document in log book           |                                       | Community<br>Medicine   | Obstetrics &<br>Gynaecology                      |
| PE20.6 | Explain the follow up care for neonates including Breast feeding, temperature maintenance, immunization, importance of growth monitoring and red flags | S                 | SH                     | Y             | DOAP session                          | Log book entry                 |                                       |                         | Obstetrics &<br>Gynaecology                      |
| PE32.6 | Discuss the genetic basis, risk factors, clinical features, complications, prenatal diagnosis, management and genetic counselling in Turner's Syndrome | K                 | KH                     | N             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       |                         | General Medicine,<br>Obstetrics &<br>Gynaecology |
| PE32.8 | Interpret normal Karyotype and recognize the Turner Karyotype  | S                 | SH                     | N             | Bed Side clinics, Skill<br>lab        | Log book                       |                                       |                         | General Medicine,<br>Obstetrics &<br>Gynaecology |
| PE32.9 | Discuss the referral criteria and multidisciplinary approach to management of Turner Syndrome  | K                 | KH                     | N             | Lecture, Small group<br>discussion    | Written/ Viva voce             |                                       |                         | General Medicine,<br>Obstetrics &<br>Gynaecology |

| Number              | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical<br>Integration | Horizontal<br>Integration                 |
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| <b>Radiotherapy</b> |  |                   |                        |               |                                       |                                |                                       |                         |   |
| RT4.5               | Describe and discuss role of radiation in management of common malignancies in India (region specific) | K                 | KH                     | Y             | Lecture, Bed side clinic              | Written/ Viva voce             |                                       | Pathology               | General Surgery, Obstetrics & Gynaecology |
| RT4.6               | Describe and discuss radiotherapy for benign disease   | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Pathology               | General Surgery, Obstetrics & Gynaecology |
| RT4.7               | Counsel patients regarding acute and late effects of radiation and supportive care                     | K/A/S             | KH                     | Y             | Bed side clinic, group discussion     | Written/ Viva voce             |                                       | Pathology               | General Surgery, Obstetrics & Gynaecology |
| RT4.8               | Describe oncological emergencies and palliative care   | K/A/S             | K/KH                   | Y             | Lecture and group discussion          | Written/ Viva voce             |                                       |                         | General Surgery, Obstetrics & Gynaecology |
| RT5.1               | Describe and discuss cancer prevention, screening, vaccination, cancer registry                        | K                 | K                      | Y             | Group discussion                      | Written/ Viva voce             |                                       | Pathology               | General Surgery, Obstetrics & Gynaecology |

**ORTHOPÆDICS (CODE: OR)**

| Number                                     | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method          | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration           |
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| <b>ORTHOPEDICS</b>                         |   |                                      |                        |               |   |   |                                       |                      |                                     |
| <b>Topic: Skeletal Trauma, Poly trauma</b> |   | <b>Number of competencies : (06)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |   |                                       |                      |                                     |
| OR1.1                                      | Describe and discuss the Principles of pre-hospital care and Casualty management of a trauma victim including principles of triage                              | K/S/A/C                              | K/KH                   | Y             | Lecture with video,<br>Small group discussion                 | Written/ Viva voce/<br>OSCE/ Simulation |                                       |                      | General Surgery,<br>Anaesthesiology |
| OR1.2                                      | Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock  | K/S                                  | K/KH                   | Y             | Lecture   | Written/ Viva voce/<br>OSCE/ Simulation |                                       |                      | General Surgery                     |
| OR1.3                                      | Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries                             | K                                    | KH/SH                  | Y             | Lecture, Small group<br>discussion                            | Written/ OSCE                           |                                       |                      | General Surgery                     |
| OR1.4                                      | Describe and discuss the Principles of management of soft tissue injuries   | K                                    | K/KH                   | Y             | Lecture, Small group<br>discussion                            | Written/ Assesment/<br>Viva voce        |                                       |                      | General Surgery                     |
| OR1.5                                      | Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip | K                                    | K/KH                   | Y             | Lecture, Small group<br>discussion, Bed side<br>clinic        | Written/ Viva voce/<br>OSCE/ Simulation |                                       |                      |                                     |
| OR1.6                                      | Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation   | K/S/A/C                              | SH                     | Y             | Simulation, DOAP<br>session                                   | OSCE/ Simulation                        |                                       |                      |                                     |
| <b>Topic: Fractures</b>                    |   | <b>Number of competencies : (16)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |   |                                       |                      |                                     |
| OR2.1                                      | Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle                                     | K/S                                  | KH/SH                  | Y             | Lecture, Small group<br>discussion, Bed side<br>clinic        | Written/ Viva voce/<br>OSCE             |                                       | Human Anatomy        |                                     |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
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| OR2.2  | Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus   | K                 | K/KH/<br>SH            | Y             | Lecture, Small group discussion, Bed side clinic | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |
| OR2.3  | Select, prescribe and communicate appropriate medications for relief of joint pain   | K                 | KH/SH                  | Y             | Lecture, Small group discussion, Bed side clinic | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |
| OR2.4  | Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovascular deficit | K/S               | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |
| OR2.5  | Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury                      | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |
| OR2.6  | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius  | K                 | KH                     | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |
| OR2.7  | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability                            | K                 | K/KH/<br>SH            | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |
| OR2.8  | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient                         | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |
| OR2.9  | Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture   | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/<br>OSCE    |                                       | Human Anatomy        |                           |

| Number | <b>COMPETENCY</b><br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method           | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
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| OR2.10 | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur  | K/S/A/C           | KH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                           |
| OR2.11 | Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of (a) Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                           |
| OR2.12 | Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                           |
| OR2.13 | Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of:<br>(a) Fracture both bones leg<br>(b) Calcaneus<br>(c) Small bones of foot  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                           |
| OR2.14 | Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures  | K/S/C             | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                           |
| OR2.15 | Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome  | K/S               | SH                     | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                           |
| OR2.16 | Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                           |



| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                   | Suggested<br>Assessment method        | Number<br>required to<br>certify<br>P | Vertical Integration       | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---|---------------------------------------|---------------------------------------|----------------------------|---------------------------|
| <b>Topic: Musculoskeletal Infection</b> <span style="float: right;">Number of competencies : (03)</span> <span style="float: right;">Number of Procedures that require certification: (NIL)</span>                                  |  |                   |                        |               |   |                                       |                                       |                            |                           |
| OR3.1   | Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections<br>a) Acute Osteomyelitis<br>b) Subacute osteomyelitis<br>c) Acute Suppurative arthritis<br>d) Septic arthritis & HIV infection<br>e) Spirochaetal infection<br>f) Skeletal Tuberculosis | K/S               | K/KH/<br>SH            | Y             | Lecture, Small group discussion, Video assisted lecture | Written/ Viva voce/<br>OSCE           |                                       | Pathology,<br>Microbiology | General surgery           |
| OR3.2   | Participate as a member in team for aspiration of joints under supervision   | K/S/A/C           | SH                     | Y             | Small group Discussion. DOAP session                    | Viva voce/ OSCE/<br>Skills assessment |                                       | –                          |                           |
| OR3.3   | Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy  | K/S/A/C           | SH                     | Y             | DOAP session, Video demonstration                       | Viva voce/ OSCE/<br>Skills assessment |                                       |                            | General Surgery           |
| <b>Topic: Skeletal Tuberculosis</b> <span style="float: right;">Number of competencies : (01)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>                                      |  |                   |                        |               |   |                                       |                                       |                            |                           |
| OR4.1   | Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abscess and caries spine  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Case discussion        | Written/ Viva voce/<br>OSCE           |                                       | Pathology                  | General surgery           |
| <b>Topic: Rheumatoid Arthritis and associated inflammatory disorders</b> <span style="float: right;">Number of competencies : (01)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |               |   |                                       |                                       |                            |                           |

| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method            | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|----------------------|---------------------------|
| OR5.1   | Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bedside clinic  | Written/ Viva voce/ OSCE       |                                       |                      | General Medicine          |
| <b>Topic: Degenerative disorders</b> <span style="margin-left: 200px;"><b>Number of competencies : (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span>   |  |                   |                        |               |  |                                |                                       |                      |                           |
| OR6.1   | Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)                               | K                 | K/KH                   | Y             | Lecture, Small group discussion, Case discussion | Written/ Viva voce/ OSCE       |                                       |                      |                           |
| <b>Topic: Metabolic bone disorders</b> <span style="margin-left: 200px;"><b>Number of competencies : (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |               |  |                                |                                       |                      |                           |
| OR7.1   | Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease | K                 | K/KH                   | Y             | Lecture, Small group discussion, Case discussion | Written/ Viva voce/ OSCE       |                                       |                      |                           |
| <b>Topic: Poliomyelitis</b> <span style="margin-left: 200px;"><b>Number of competencies : (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span>            |  |                   |                        |               |  |                                |                                       |                      |                           |
| OR8.1   | Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post Polio Residual Paralysis  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Case discussion | Written/ Viva voce/ OSCE       |                                       |                      |                           |
| <b>Topic: Cerebral Palsy</b> <span style="margin-left: 200px;"><b>Number of competencies : (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span>           |  |                   |                        |               |  |                                |                                       |                      |                           |

| Number                                  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                               | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration         |
|---|--|--------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|-----------------------------------|
| OR9.1                                   | Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient   | K                                    | K/KH                   | Y             | Lecture, Small group discussion                                     | Written/ Viva voce/ OSCE       |                                       |                      |                                   |
| <b>Topic: Bone Tumors</b>               |  | <b>Number of competencies : (01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>       |                                |                                       |                      |                                   |
| OR10.1                                  | Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign and malignant bone tumours and pathological fractures   | K                                    | K/KH                   | Y             | Lecture, Small group discussion, Video assisted interactive lecture | Written/ Viva voce/ OSCE       |                                       | Pathology            | General surgery, Radiotherapy     |
| <b>Topic: Peripheral nerve injuries</b> |  | <b>Number of competencies : (01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>       |                                |                                       |                      |                                   |
| OR11.1                                  | Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves                                | K                                    | K/H                    | Y             | Lecture, Small group discussion, case discussion                    | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        | General Medicine, General surgery |
| <b>Topic: Congenital lesions</b>        |  | <b>Number of competencies : (01)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>       |                                |                                       |                      |                                   |
| OR12.1                                  | Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of:<br>a. limbs and spine - Scoliosis and spinal bifida<br>b. Congenital dislocation of Hip, Torticollis,<br>c. congenital talipes equino varus | K                                    | KH                     | Y             | Lecture, Small group discussion                                     | Written/ Viva voce/ OSCE       |                                       | Human Anatomy        |                                   |
| <b>Topic: Procedural Skills</b>         |  | <b>Number of competencies : (02)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b>       |                                |                                       |                      |                                   |

| Number  | <b>COMPETENCY</b><br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method  | Suggested<br>Assessment method        | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|---------------------------------------|---------------------------------------|----------------------|---------------------------|
| OR13.1  | Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following:<br>i. Above elbow plaster<br>ii. Below knee plaster<br>iii. Above knee plaster<br>iv. Thomas splint<br>v. splinting for long bone fractures<br>vi. Strapping for shoulder and clavicle trauma | S/A               | KH /<br>SH             | Y             | Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skill lab sessions  | OSCE with Simulation based assessment |                                       |                      |                           |
| OR13.2  | Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following :<br>(a) I.V. access central - peripheral<br>(b) Bladder catheterization<br>(c) Endotracheal intubation<br>(d) Splintage  | S/A               | KH /<br>SH             | Y             | Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skill lab sessions  | OSCE with Simulation based assessment |                                       |                      | Anaesthesiology           |
| <b>Topic: Counselling Skills</b> <span style="margin-left: 200px;"><b>Number of competencies : (03)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |               |  |                                       |                                       |                      |                           |
| OR14.1  | Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like<br>a. fractures with disabilities<br>b. fractures that require prolonged bed stay<br>c. bone tumours<br>d. congenital disabilities  | K/S/A/C           | KH /<br>SH             | Y             | Case discussion, Video assisted lecture, Small group discussion, Teaching, Skills lab sessions | OSCE with Simulation based assessment |                                       |                      | AETCOM                    |
| OR14.2  | Demonstrate the ability to counsel patients to obtain consent for various orthopedic procedures like limp amputation, permanent fixations etc..  | K/S/A/C           | KH /<br>SH             | Y             | Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skills lab sessions | OSCE with Simulation based assessment |                                       |                      | AETCOM                    |

| Number  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method  | Suggested<br>Assessment method        | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|--|---------------------------------------|---------------------------------------|----------------------|---------------------------|
| OR14.3  | Demonstrate the ability to convince the patient for referral to a higher centre in various orthopedic illnesses, based on the detection of warning signals and need for sophisticated management | K/S/A/C           | KH /<br>SH             | Y             | Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skills lab sessions | OSCE with Simulation based assessment |                                       |                      | AETCOM                    |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |  |                   |                        |               |  |                                       |                                       |                      |                           |
| <b>Integration</b>  |  |                   |                        |               |  |                                       |                                       |                      |                           |
| <b>Human Anatomy</b>  |  |                   |                        |               |  |                                       |                                       |                      |                           |
| AN2.4   | Describe various types of cartilage with its structure & distribution in body  | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN2.5   | Describe various joints with subtypes and examples   | K                 | KH                     | Y             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN8.4   | Demonstrate important muscle attachment on the given bone  | K/S               | SH                     | Y             | Practical, DOAP session, Small group teaching  | Viva voce/ Practicals                 |                                       | Orthopedics          |                           |
| AN8.6   | Describe scaphoid fracture and explain the anatomical basis of avascular necrosis  | K                 | KH                     | N             | DOAP session   | Viva voce                             |                                       | Orthopedics          |                           |

| Number           | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method        | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration |
|------------------|--|-------------------|------------------------|---------------|--|---------------------------------------|---------------------------------------|----------------------|---------------------------|
| AN10.12          | Describe and demonstrate Shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skills assessment |                                       | Orthopedics          |                           |
| AN11.4           | Describe the anatomical basis of Saturday night paralysis  | K                 | KH                     | Y             | Practical, Lecture                                       | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN17.2           | Describe anatomical basis of complications of fracture neck of femur.  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN17.3           | Describe dislocation of hip joint and surgical hip replacement   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN18.6           | Describe knee joint injuries with its applied anatomy  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN18.7           | Explain anatomical basis of Osteoarthritis   | K                 | KH                     | N             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN19.4           | Explain the anatomical basis of rupture of calcaneal tendon  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN19.6           | Explain the anatomical basis of Flat foot & Club foot  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN19.7           | Explain the anatomical basis of Metatarsalgia & Plantar fasciitis  | K                 | KH                     | N             | Lecture  | Written/ Viva voce                    |                                       | Orthopedics          |                           |
| AN50.4           | Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida  | K                 | KH                     | N             | Lecture  | Written                               |                                       | Orthopedics          |                           |
| <b>Pathology</b> |  |                   |                        |               |  |                                       |                                       |                      |                           |

| Number                                    | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration            | Horizontal<br>Integration |
|---|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|---------------------------------|---------------------------|
| PA33.1                                    | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis                       | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Human Anatomy, Orthopedics      | Microbiology              |
| PA33.2                                    | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors          | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Orthopedics                     |                           |
| PA33.3                                    | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Orthopedics                     |                           |
| PA33.4                                    | Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone         | K                 | KH                     | N             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Orthopedics                     |                           |
| <b>Microbiology</b>                       |  |                   |                        |               |                                       |                                |                                       |                                 |                           |
| MI4.2                                     | Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections.  | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Orthopedics                     |                           |
| <b>Forensic Medicine &amp; Toxicology</b> |  |                   |                        |               |                                       |                                |                                       |                                 |                           |
| FM3.7                                     | Describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death: Primary and Secondary. | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Forensic medicine, Orthopaedics |                           |
| FM3.8                                     | Mechanical injuries and wounds:<br>Describe and discuss different types of weapons including dangerous weapons and their examination.                          | K                 | K/KH                   | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | General Surgery, Orthopaedics   |                           |

| Number                  | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                                     | Suggested<br>Assessment method  | Number<br>required to<br>certify<br>P | Vertical Integration          | Horizontal<br>Integration |
|-------------------------|--|-------------------|------------------------|---------------|---|---------------------------------|---------------------------------------|-------------------------------|---------------------------|
| FM3.9                   | Firearm injuries:<br>Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking. | K                 | K/KH                   | Y             | Lecture, Small group discussion   | Written/ Viva voce              |                                       | General Surgery, Orthopaedics |                           |
| FM3.10                  | Firearm injuries:<br>Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms               | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic DOAP session             | Written/ Viva voce / OSCE       |                                       | General Surgery, Orthopaedics |                           |
| FM3.11                  | Regional Injuries:<br>Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton  | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session | Written/ Viva voce / OSCE/ OSPE |                                       | General Surgery, Orthopaedics |                           |
| FM3.12                  | Regional Injuries<br>Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine.   | K                 | K/KH                   | Y             | Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session | Written/ Viva voce / OSCE/ OSPE |                                       | General Surgery, Orthopaedics |                           |
| <b>General Medicine</b> |  |                   |                        |               |   |                                 |                                       |                               |                           |
| IM7.5                   | Develop a systematic clinical approach to joint pain based on the pathophysiology  | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/ Viva voce              |                                       |                               | Orthopedics               |
| IM7.6                   | Describe and discriminate acute, subacute and chronic causes of joint pain   | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/ Viva voce              |                                       |                               | Orthopedics               |
| IM7.7                   | Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain   | K                 | KH                     | Y             | Lecture, Small group discussion   | Written/ Viva voce              |                                       |                               | Orthopedics               |



| Number  | <b>COMPETENCY</b><br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration                             |
|---------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---|
| IM7.8   | Discriminate, describe and discuss distinguishing articular from periarticular complaints  | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics   |
| IM7.9   | Determine the potential causes of join pain based on the presenting features of joint involvement  | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics   |
| IM7.10  | Describe the common signs and symptoms of articular and periarticular diseases   | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics   |
| IM7.13  | Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease  | S                 | SH                     | Y             | Bed side clinic, DOAP session           | Skill assessment               |                                       |                      | Orthopedics   |
| IM7.17  | Enumerate the indications for arthrocentesis   | K                 | K                      | Y             | small group discussion, Lecture         | Written/ Viva voce             |                                       |                      | Orthopedics   |
| IM7.18  | Enumerate the indications and interpret plain radiographs of joints  | K                 | SH                     | Y             | Bed side clinic, small group discussion | Skill assessment/<br>Written   |                                       | Radiodiagnosis       | Orthopedics   |
| IM7.21  | Select, prescribe and communicate appropriate medications for relief of joint pain   | K/C               | SH                     | Y             | DOAP session                            | Skill assessment/<br>Written   |                                       | Pharmacology         | Orthopedics   |
| IM24.12 | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of degenerative joint disease      | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics   |
| IM24.13 | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly            | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics,<br>Physical Medicine<br>& Rehabilitation |
| IM24.14 | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of common fractures in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics   |

| Number  | COMPETENCY<br>The student should be able to:  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration                             |
|---|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---|
| IM24.16                                       | Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Orthopedics,<br>Physical Medicine<br>& Rehabilitation |
| <b>Physical Medicine &amp; Rehabilitation</b> |   |                   |                        |               |                                       |                                |                                       |                      |   |
| PM1.2   | Define and describe disability, its cause, and magnitude, identification and prevention of disability   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine<br>Orthopedics                       |
| PM1.3   | Define and describe the methods to identify and prevent disability  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine<br>Orthopedics                       |
| PM1.4   | Enumerate the rights and entitlements of differently abled persons  | K                 | K                      | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General<br>Medicine,<br>Orthopedics                   |
| PM4.1   | Describe the common patterns, clinical features, investigations, diagnosis and treatment of common causes of arthritis  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General Medicine<br>Orthopedics                       |
| PM4.3   | Observe in a mannequin or equivalent the administration of an intra-articular injection   | S                 | KH                     | N             | DOAP session                          | Skill assessment               |                                       |                      | Orthopedics   |
| PM4.5   | Demonstrate correct assessment of muscle strength and range of movements  | S                 | SH                     | Y             | DOAP session,<br>Bedside clinic       | Skill assessment               |                                       |                      | General Medicine<br>Orthopedics                       |
| PM5.1   | Enumerate the indications and describe the principles of amputation   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Orthopedics<br>General Surgery                        |
| PM5.2   | Describe the principles of early mobilization, evaluation of the residual limb, contralateral limb and the influence of co-morbidities  | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | Orthopedics   |

| Number | COMPETENCY<br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration     |
|--------|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|-------------------------------|
| PM5.3  | Demonstrate the correct use of crutches in ambulation and postures to correct contractures and deformities   | S                 | SH                     | Y             | DOAP session, Bedside clinic discussion | Skill assessment               |                                       |                      | Orthopedics                   |
| PM5.4  | Identify the correct prosthesis for common amputations   | S                 | SH                     | Y             | DOAP session                            | Skill assessment / written     |                                       |                      | Orthopedics                   |
| PM6.3  | Describe the principles of skin traction, serial casts and surgical treatment including contracture release, tendon transfer, osteotomies and arthrodesis.       | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics                   |
| PM6.4  | Describe the principles of orthosis for ambulation in PPRP   | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics                   |
| PM7.1  | Describe and discuss the clinical features, diagnostic work up, work up diagnosis and management of spinal cord injury   | K                 | KH                     | Y             | Lecture, Small group discussion         | Written/ Viva voce             |                                       |                      | Orthopedics                   |
| PM7.2  | Describe and demonstrate process of transfer, applications of collar restraints while maintaining airway and prevention of secondary injury in a mannequin/model | S                 | SH                     | Y             | DOAP session, Small group discussion    | Skill assessment               |                                       |                      | Orthopedics                   |
| PM7.3  | Perform and demonstrate a correct neurological examination in a patient with spinal injury and determine the neurologic level of injury                          | S                 | SH                     | Y             | Bed side clinic                         | Skill assessment               |                                       |                      | Orthopedics                   |
| PM7.4  | Assess bowel and bladder function and identify common patterns of bladder dysfunction  | S                 | KH                     | Y             | Small group discussion                  | Written/ Viva voce             |                                       |                      | General Medicine, Orthopedics |
| PM7.5  | Enumerate the indications and identify the common mobility aids and appliances, wheel chairs   | S                 | S                      | Y             | DOAP session                            | Skill assessment/ Viva voce    |                                       |                      | Orthopedics                   |

| Number | <b>COMPETENCY</b><br>The student should be able to:   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical Integration | Horizontal<br>Integration                               |
|--------|---|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---|
| PM7.7  | Enumerate and describe common life threatening complications following SCI like Deep vein Thrombosis, Aspiration Pneumonia, Autonomic dysreflexia | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       |                      | General<br>Medicine,<br>Orthopedics                     |
| PM8.1  | Describe the clinical features, evaluation, diagnosis and management of disability following traumatic brain injury                               | K                 | KH                     | Y             | Lecture, Small group discussion       | Written / Viva voce            |                                       |                      | General<br>Medicine,<br>Orthopedics,<br>General Surgery |

**ANAESTHESIOLOGY (CODE: AS)**

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                    | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                          | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical integration            | Horizontal<br>integration |
|--|--|--------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|---------------------------------|---------------------------|
| <b>ANAESTHESIOLOGY</b>                               |  |                                      |                        |               |  |                                |                                       |                                 |                           |
| <b>Topic: Anaesthesiology as a specialty</b>         |  | <b>Number of competencies: (04)</b>  |                        |               | <b>Number of procedures that require certification: (NIL)</b>  |                                |                                       |                                 |                           |
| AS1.1  | Describe the evolution of Anaesthesiology as a modern specialty  | K                                    | K                      | N             | Lecture  | Written/ Viva voce             |                                       |                                 |                           |
| AS1.2  | Describe the roles of Anaesthesiologist in the medical profession (including as a peri-operative physician, in the intensive care and high dependency units, in the management of acute and chronic pain, including labour analgesia, in the resuscitation of acutely ill) | K                                    | K                      | N             | Lecture  | Written/ Viva voce             |                                       |                                 |                           |
| AS1.3  | Enumerate and describe the principle of ethics as it relates to Anaesthesiology  | K                                    | K                      | N             | Lecture  | Written/ Viva voce             |                                       | AETCOM                          |                           |
| AS1.4  | Describe the prospects of Anaesthesiology as a career  | K                                    | K                      | N             | Lecture  | Written/ Viva voce             |                                       |                                 |                           |
| <b>Topic: Cardiopulmonary resuscitation</b>          |  | <b>Number of competencies: (02 )</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                                 |                           |
| AS2.1  | Enumerate the indications, describe the steps and demonstrate in a simulated environment, Basic Life Support in adults, children and neonates  | K/S                                  | SH                     | N             | DOAP session   | Skill assessment               |                                       | General Medicine,<br>Pediatrics |                           |
| AS2.2  | Enumerate the indications, describe the steps and demonstrate in a simulated environment, Advanced Life Support in adults and children   | S                                    | SH                     | N             | DOAP session   | Skill assessment               |                                       | General Medicine                |                           |
| <b>Topic: Preoperative evaluation and medication</b> |  | <b>Number of competencies: (06 )</b> |                        |               | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                                 |                           |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical integration | Horizontal<br>integration         |
|--|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|-----------------------------------|
| AS3.1  | Describe the principles of preoperative evaluation   | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce             |                                       |                      | General Surgery, General Medicine |
| AS3.2  | Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation   | S                 | SH                     | Y             | DOAP session, Bedside clinic                  | Skill station                  |                                       |                      | General Surgery, General Medicine |
| AS3.3  | Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery   | S                 | SH                     | Y             | DOAP session, Bedside clinic                  | Skill station                  |                                       |                      | General Surgery, General Medicine |
| AS3.4  | Choose and interpret appropriate testing for patients undergoing Surgery   | S                 | SH                     | Y             | DOAP session, Bedside clinic                  | Skill station                  |                                       |                      | General Surgery, General Medicine |
| AS3.5  | Determine the readiness for General Surgery in a patient based on the preoperative evaluation  | S                 | SH                     | Y             | DOAP session, Bedside clinic                  | Skill station                  |                                       |                      | General Surgery, General Medicine |
| AS3.6  | Choose and write a prescription for appropriate premedications for patients undergoing surgery   | S                 | SH                     | Y             | DOAP session, Bedside clinic                  | Skill station                  |                                       | Pharmacology         |                                   |
| <b>Topic: General Anaesthesia</b> <span style="margin-left: 200px;"><b>Number of competencies: (07)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span> |  |                   |                        |               |   |                                |                                       |                      |                                   |
| AS4.1  | Describe and discuss the pharmacology of drugs used in induction and maintenance of general anaesthesia (including intravenous and inhalation induction agents, opiate and non-opiate analgesics, depolarising and non depolarising muscle relaxants, anticholinesterases) | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce             |                                       | Pharmacology         |                                   |
| AS4.2  | Describe the anatomy of the airway and its implications for general anaesthesia  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce             |                                       | Human Anatomy        |                                   |
| AS4.3  | Observe and describe the principles and the practical aspects of induction and maintenance of anaesthesia  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Pharmacology         |                                   |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical integration | Horizontal<br>integration |
|--|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| AS4.4  | Observe and describe the principles and the steps/ techniques in maintenance of vital organ functions in patients undergoing surgical procedures | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| AS4.5  | Observe and describe the principles and the steps/ techniques in monitoring patients during anaesthesia  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| AS4.6  | Observe and describe the principles and the steps/ techniques involved in day care anaesthesia   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| AS4.7  | Observe and describe the principles and the steps/ techniques involved in anaesthesia outside the operating room                                 | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| <b>Topic: Regional anaesthesia</b> <span style="margin-left: 200px;"><b>Number of competencies: (06)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (NIL)</b></span> |  |                   |                        |               |   |                                |                                       |                      |                           |
| AS5.1  | Enumerate the indications for and describe the principles of regional anaesthesia (including spinal, epidural and combined)                      | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce             |                                       |                      |                           |
| AS5.2  | Describe the correlative anatomy of the brachial plexus, subarachnoid and epidural spaces  | K                 | KH                     | Y             | Lecture, Small group discussion               | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| AS5.3  | Observe and describe the principles and steps/ techniques involved in peripheral nerve blocks  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Human Anatomy        |                           |
| AS5.4  | Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anaesthesia                         | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Pharmacology         |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical integration | Horizontal<br>integration |
|---|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| AS5.5   | Observe and describe the principles and steps/ techniques involved in caudal epidural in adults and children                           | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| AS5.6   | Observe and describe the principles and steps/ techniques involved in common blocks used in surgery (including brachial plexus blocks) | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      | General Surgery           |
| <b>Topic: Post-anaesthesia recovery</b> <span style="float: right;">Number of competencies: (03)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |               |   |                                |                                       |                      |                           |
| AS6.1   | Describe the principles of monitoring and resuscitation in the recovery room   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| AS6.2   | Observe and enumerate the contents of the crash cart and describe the equipment used in the recovery room                              | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| AS6.3   | Describe the common complications encountered by patients in the recovery room, their recognition and principles of management         | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      | General Surgery           |
| <b>Topic: Intensive Care Management</b> <span style="float: right;">Number of competencies: (05)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |               |   |                                |                                       |                      |                           |
| AS7.1   | Visit, enumerate and describe the functions of an Intensive Care Unit  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      |                           |
| AS7.2   | Enumerate and describe the criteria for admission and discharge of a patient to an ICU   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                      | General Medicine          |
| AS7.3   | Observe and describe the management of an unconscious patient  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Physiology           | General Medicine          |

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method         | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical integration      | Horizontal<br>integration |
|---|--|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|---------------------------|---------------------------|
| AS7.4   | Observe and describe the basic setup process of a ventilator   | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Physiology                | General Medicine          |
| AS7.5   | Observe and describe the principles of monitoring in an ICU  | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       |                           | General Medicine          |
| <b>Topic: Pain and its management</b> <span style="float: right;">Number of competencies: (05)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span> |  |                   |                        |               |   |                                |                                       |                           |                           |
| AS8.1   | Describe the anatomical correlates and physiologic principles of pain                                  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Human Anatomy, Physiology |                           |
| AS8.2   | Elicit and determine the level, quality and quantity of pain and its tolerance in patient or surrogate | S                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Physiology                |                           |
| AS8.3   | Describe the pharmacology and use of drugs in the management of pain                                   | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Pharmacology              |                           |
| AS8.4   | Describe the principles of pain management in palliative care  | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Pharmacology              | General Medicine          |
| AS8.5   | Describe the principles of pain management in the terminally ill                                       | K                 | KH                     | Y             | Lecture, Small group discussion, DOAP session | Written/ Viva voce             |                                       | Pharmacology              | General Medicine          |
| <b>Topic: Fluids</b> <span style="float: right;">Number of competencies: (04)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>                  |  |                   |                        |               |   |                                |                                       |                           |                           |



| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical integration                | Horizontal<br>integration |
|---|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|-------------------------------------|---------------------------|
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |  |                   |                        |               |                                       |                                |                                       |                                     |                           |
| <b>Integration</b>  |  |                   |                        |               |                                       |                                |                                       |                                     |                           |
| <b>Physiology</b>   |  |                   |                        |               |                                       |                                |                                       |                                     |                           |
| PY3.4   | Describe the structure of neuro-muscular junction and transmission of impulses   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Anaesthesiology                     |                           |
| PY3.5   | Discuss the action of neuro-muscular blocking agents   | K                 | KH                     | Y             | Lecture, Small group discussion       | Written/ Viva voce             |                                       | Anaesthesiology<br>Pharmacology     |                           |
| PY11.14   | Demonstrate Basic Life Support in a simulated environment  | S                 | SH                     | Y             | DOAP sessions                         | OSCE                           |                                       | General Medicine<br>Anaesthesiology |                           |
| <b>Pharmacology</b>   |  |                   |                        |               |                                       |                                |                                       |                                     |                           |
| PH1.15  | Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants                                 | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Anesthesiology,<br>Physiology       |                           |
| PH1.17  | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anaesthetics                                    | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Anesthesiology                      |                           |
| PH1.18  | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and pre-anaesthetic medications | K                 | KH                     | Y             | Lecture                               | Written/ Viva voce             |                                       | Anesthesiology                      |                           |
| <b>Forensic Medicine &amp; Toxicology</b>   |  |                   |                        |               |                                       |                                |                                       |                                     |                           |

| Number                  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method  | Suggested<br>Assessment method | Number<br>required to<br>certify<br>P | Vertical integration               | Horizontal<br>integration         |
|-------------------------|---|-------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|------------------------------------|-----------------------------------|
| FM2.19                  | Investigation of anaesthetic, operative deaths: Describe and discuss special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences      | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       | Anesthesiology,<br>General Surgery |                                   |
| <b>General Medicine</b> |   |                   |                        |               |  |                                |                                       |                                    |                                   |
| IM13.17                 | Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer  | K                 | KB                     | Y             | Bedside clinic, small group discussion | short note/ Viva voce          |                                       | Pharmacology                       | Anesthesiology                    |
| IM24.11                 | Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       |                                    | Anesthesiology<br>General Surgery |
| <b>General Surgery</b>  |   |                   |                        |               |  |                                |                                       |                                    |                                   |
| SU11.1                  | Describe principles of Preoperative assessment.   | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       |                                    | Anesthesiology                    |
| SU11.2                  | Enumerate the principles of general, regional, and local Anaesthesia.   | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       |                                    | Anesthesiology                    |
| SU11.3                  | Demonstrate maintenance of an airway in a mannequin or equivalent   | S                 | SH                     | Y             | DOAP session                           | Skill Assessment               |                                       |                                    | Anesthesiology                    |
| SU11.5                  | Describe principles of providing post-operative pain relief and management of chronic pain.   | K                 | KH                     | Y             | Lecture, Small group discussion        | Written/ Viva voce             |                                       |                                    | Anesthesiology                    |
| SU17.2                  | Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment  | S                 | SH                     | Y             | DOAP session                           | Skill assessment               |                                       |                                    | Anesthesiology                    |

| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method   | Suggested<br>Assessment method        | Number<br>required to<br>certify<br>P | Vertical integration | Horizontal<br>integration          |
|---------------------|--|-------------------|------------------------|---------------|---|---------------------------------------|---------------------------------------|----------------------|------------------------------------|
| SU17.10             | Demonstrate Airway maintenance and recognize and management of tension pneumothorax, hemothorax and flail chest in simulated environment   | S                 | SH                     | Y             | DOAP session  | Skill Assessment/ Log book            |                                       |                      | Anesthesiology                     |
| <b>Orthopaedics</b> |  |                   |                        |               |   |                                       |                                       |                      |                                    |
| OR1.1               | Describe and discuss the Principles of Pre hospital care and Casualty management of a trauma victim including principles of triage,  | K/S/A/C           | K, KH                  | Y             | Lecture with video, Small group Discussion  | Written/ Viva voce/ OSCE/ Simulation  |                                       |                      | General Surgery<br>Anaesthesiology |
| OR13.2              | Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following :<br>(a) IV. access central - peripheral<br>(b) Bladder catheterization<br>(c) Endotracheal intubation<br>(d) Splintage | S/A               | KH /<br>SH             | Y             | Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skill lab sessions | OSCE with Simulation based assessment |                                       |                      | Anaesthesiology                    |

## **RADIODIAGNOSIS (CODE: RD)**

| Number   | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>RADIODIAGNOSIS</b>  |   |                                     |                        |               |   |                                |                                       |                      |                           |
| <b>Topic: Radiological investigations and Radiation safety</b> |   | <b>Number of competencies: (13)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| RD1.1  | Define radiation and the interaction of radiation and importance of radiation protection  | K                                   | KH                     | Y             | Lecture,<br>Demonstration                                     |                                |                                       |                      |                           |
| RD1.2  | Describe the evolution of Radiodiagnosis. Identify various radiological equipments In the current era   | S                                   | SH                     | Y             | Lecture,<br>Demonstration                                     |                                |                                       |                      |                           |
| RD1.3  | Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder of ENT               | K/S                                 | SH                     | Y             | Lecture,<br>Demonstration                                     |                                |                                       |                      |                           |
| RD1.4  | Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in Ob & Gy           | K/S                                 | SH                     | Y             | Lecture,<br>Demonstration                                     |                                |                                       |                      |                           |
| RD1.5  | Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in internal medicine | K/S                                 | SH                     | Y             | Lecture,<br>Demonstration                                     |                                |                                       |                      |                           |
| RD1.6  | Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorders in surgery          | K/S                                 | SH                     | Y             | Lecture,<br>Demonstration                                     |                                |                                       |                      |                           |
| RD1.7  | Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in Pediatrics        | K/S                                 | SH                     | Y             | Lecture,<br>Demonstration                                     |                                |                                       |                      |                           |



| Number  | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                 | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|---|---------------------------|
| RD1.8   | Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to common malignancies | K/S               | SH                     | Y             | Lecture,<br>Demonstration                             |                                |                                       |   |                           |
| RD1.9   | Describe the role of Interventional Radiology in common clinical conditions   | K                 | KH                     | Y             | Lecture,<br>Demonstration                             |                                |                                       |   |                           |
| RD1.10  | Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments  | K                 | KH                     | Y             | Lecture,<br>Demonstration                             |                                |                                       |   |                           |
| RD1.11  | Describe preparation of patient for common imaging procedures   | K                 | KH                     | Y             | Lecture,<br>Demonstration                             |                                |                                       |   |                           |
| RD1.12  | Describe the effects of radiation in pregnancy and the methods of prevention/ minimization of radiation exposure  | K                 | KH                     | Y             | Lecture,<br>Demonstration                             |                                |                                       |   |                           |
| RD1.13  | Describe the components of the PC & PNDT Act and its medicolegal implications   | K                 | KH                     | Y             | Lecture, Small group<br>discussion                    |                                |                                       | Obstetrics &<br>Gynaecology,<br>Forensic Medicine &<br>Toxicology |                           |
| <p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b><br/> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b><br/> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b><br/> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p> |   |                   |                        |               |   |                                |                                       |   |                           |
| <b>Integration</b>  |   |                   |                        |               |   |                                |                                       |   |                           |
| <b>Human Anatomy</b>  |   |                   |                        |               |   |                                |                                       |   |                           |
| AN13.4  | Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand   | K/S               | SH                     | Y             | Practical, Small group<br>discussion, DOAP<br>session | Viva voce/ Skill<br>assessment |                                       | Radiodiagnosis  |                           |

| Number | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                    | Suggested<br>Assessment method       | Number<br>required<br>to certify<br>P | Vertical Integration             | Horizontal<br>Integration |
|--------|---|-------------------|------------------------|---------------|--|--------------------------------------|---------------------------------------|----------------------------------|---------------------------|
| AN20.6 | Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb   | K/S               | SH                     | Y             | Lecture, Small group discussion, DOAP session            | Viva voce/ Skill assessment          |                                       | Radiodiagnosis                   |                           |
| AN25.7 | Identify structures seen on a plain x-ray chest (PA view)   | K/S               | SH                     | Y             | Practical, DOAP session                                  | Written/ Viva voce                   |                                       | Radiodiagnosis, General Medicine |                           |
| AN25.8 | Identify and describe in brief a barium swallow   | K/S               | SH                     | N             | Practical, DOAP session                                  | Written/ Viva voce                   |                                       | Radiodiagnosis, General Medicine |                           |
| AN43.7 | Identify the anatomical structures in 1) Plain x ray skull, 2) AP view and lateral view 3) Plain x ray cervical spine - AP and lateral view 4) Plain x ray of paranasal sinuses                   | K/S               | SH                     | Y             | Practical  | Viva voce/ Skill assessment          |                                       | Radiodiagnosis                   |                           |
| AN43.8 | Describe the anatomical route used for carotid angiogram and vertebral angiogram  | K/S               | SH                     | N             | Practical  | Viva voce/ Skill assessment          |                                       | Radiodiagnosis                   |                           |
| AN43.9 | Identify anatomical structures in carotid angiogram and vertebral angiogram   | K/S               | SH                     | N             | Practical  | Viva voce/ Skill assessment          |                                       | Radiodiagnosis                   |                           |
| AN51.1 | Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)   | K/S               | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | Radiodiagnosis                   |                           |
| AN51.2 | Describe & identify the midsagittal section of male and female pelvis   | K                 | SH                     | Y             | Practical, Lecture, Small group discussion, DOAP session | Written/ Viva voce/ Skill assessment |                                       | Radiodiagnosis                   |                           |
| AN541. | Describe & identify features of plain X ray abdomen   | K/S               | SH                     | Y             | Lecture, DOAP session                                    | Viva voce/ Skill assessment          |                                       | Radiodiagnosis                   |                           |
| AN54.2 | Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography &Hysterosalpingography) | K/S               | SH                     | Y             | Lecture, DOAP session                                    | Viva voce/ Skill assessment          |                                       | Radiodiagnosis                   |                           |

| Number                                    | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method           | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration  | Horizontal<br>Integration |
|---|---|-------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|---|---------------------------|
| AN54.3                                    | Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen  | K                 | KH                     | N             | Lecture   | Viva voce                      |                                       | Radiodiagnosis  |                           |
| <b>Forensic Medicine &amp; Toxicology</b> |   |                   |                        |               |   |                                |                                       |   |                           |
| FM1.9                                     | Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports especially:<br><ul style="list-style-type: none"> <li>-- maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres.</li> <li>-- maintenance of medico-legal register like accident register.</li> <li>-- documents of issuance of wound certificate</li> <li>-- documents of issuance of drunkenness certificate.</li> <li>-- documents of issuance of sickness and fitness certificate.</li> <li>-- documents for issuance of death certificate.</li> <li>-- documents of Medical Certification of Cause of Death - Form Number4 and 4A</li> <li>-- documents for estimation of age by physical, dental and radiological examination and issuance of certificate</li> </ul> | K                 | KH                     | Y             | Lecture/ Small group discussion                 | Written/ Viva voce             |                                       | Radiodiagnosis, General Surgery, General Medicine, Pediatrics |                           |
| <b>General Medicine</b>                   |   |                   |                        |               |   |                                |                                       |   |                           |
| IM1.19                                    | Enumerate the indications for and describe the findings of heart failure with the following conditions including: 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram   | S                 | KH                     | N             | Lecture, Small group discussion, Bedside clinic | Skill assessment               |                                       | Radiodiagnosis  |                           |
| IM3.7                                     | Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG   | S                 | SH                     | Y             | Bedside clinic, DOAP session                    | Skill assessment               |                                       | Radiodiagnosis, Microbiology                                  |                           |
| IM3.11                                    | Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing  | S                 | SH                     | Y             | Bedside clinic, DOAP session                    | Skill assessment               |                                       | Radiodiagnosis, Microbiology                                  |                           |

| Number                              | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                | Suggested<br>Assessment method                                  | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-------------------------------------|---|-------------------|------------------------|---------------|--|---|---------------------------------------|----------------------|---------------------------|
| IM5.13                              | Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease   | K                 | K                      | Y             | Bedside clinic, Small group discussion               | Viva voce/ Written  |                                       | Radiodiagnosis       | General Surgery           |
| IM6.12                              | Enumerate the indications and describe the findings for CT of the chest and brain and MRI   | K                 | K                      | N             | Small group discussion, Lecture, Bedside clinic      | Written/ Viva voce  |                                       | Radiodiagnosis       |                           |
| IM7.18                              | Enumerate the indications and interpret plain radiographs of joints   | K                 | SH                     | Y             | Bedside clinic, Small group discussion               | Skill assessment/<br>Written                                    |                                       | Radiodiagnosis       | Orthopedics               |
| IM10.19                             | Enumerate the indications and describe the findings in renal ultrasound   | K                 | KH                     | N             | Lecture, Small group discussion                      | Written/ Viva voce  |                                       | Radiodiagnosis       |                           |
| IM13.12                             | Describe the indications and interpret the results of Chest X Ray, mammogram, skin and tissue biopsies and tumor markers used in common cancers                                 | K                 | KH                     | Y             | Bedside clinic, Small group discussion               | Short note/ Viva voce   |                                       | Radiodiagnosis       |                           |
| IM18.9                              | Choose and interpret the appropriate diagnostic and imaging test that will delineate the anatomy and underlying cause of the lesion   | S                 | KH                     | Y             | Bedside clinic, DOAP session, Small group discussion | Written/ Viva voce/<br>Skill assessment                         |                                       | Radiodiagnosis       |                           |
| IM19.7                              | Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders  | S                 | SH                     | Y             | Bedside clinic, Small group discussion               | Skill assessment/<br>Small group session/<br>Written/ Viva voce |                                       | Radiodiagnosis       |                           |
| <b>Obstetrics &amp; Gynaecology</b> |   |                   |                        |               |  |   |                                       |                      |                           |
| OG9.4                               | Discuss the clinical features, laboratory investigations ultrasonography, differential diagnosis, principles of management and follow up of gestational trophoblastic neoplasms | K                 | KH                     | Y             | Lecture, Small group discussion                      | Written/ Viva voce  |                                       |                      | Radiodiagnosis            |
| <b>Pediatrics</b>                   |   |                   |                        |               |  |   |                                       |                      |                           |
| PE21.12                             | Interpret report of Plain radiograph of KUB   | S                 | SH                     | Y             | Bedside clinics, Skills lab                          | Log book  |                                       | Radiodiagnosis       |                           |

| Number                 | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method          | Suggested<br>Assessment method         | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|------------------------|--|-------------------|------------------------|---------------|--|--|---------------------------------------|----------------------|---------------------------|
| PE21.13                | Enumerate the indications for and Interpret the written report of Ultra sonogram of KUB  | S                 | SH                     | Y             | Bedside clinics, Skills lab                    | Log book                               |                                       | Radiodiagnosis       |                           |
| PE23.13                | Interpret a chest radiograph and recognize Cardiomegaly  | S                 | SH                     | Y             | Bedside clinics, Skills lab                    | Log book entry                         |                                       | Radiodiagnosis       |                           |
| PE23.16                | Use the ECHO reports in management of cases  | S                 | SH                     | Y             | Bedside clinics                                | Log book entry                         |                                       | Radiodiagnosis       |                           |
| PE28.17                | Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case of management<br>Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in Pediatric chest X-rays | S                 | P                      | Y             | Bedside clinics, Small group discussion        | Skills Assessment                      | 3                                     | ENT, Radiodiagnosis  |                           |
| PE30.23                | Interpret the reports of EEG, CT, MRI  | S                 | SH                     | Y             | Bedside clinics, Skill lab                     | Log book                               |                                       | Radiodiagnosis       |                           |
| PE34.8                 | Interpret a Chest radiograph   | S                 | SH                     | Y             | Bedside clinics, Skill lab                     | Skill assessment                       |                                       | Radiodiagnosis       | Respiratory Medicine      |
| <b>General Surgery</b> |  |                   |                        |               |  |  |                                       |                      |                           |
| SU25.3                 | Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.  | K                 | KH                     | Y             | Lecture, Small group discussion, Demonstration | Written/ Viva voce<br>Skill assessment |                                       | Radiodiagnosis       |                           |

**RADIOTHERAPY (CODE: RT)**

| Number  | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested teaching<br>learning method                          | Suggested assessment<br>method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>integration         |
|---|--|-------------------------------------|------------------------|-------------|--|--------------------------------|---------------------------------------|----------------------|-----------------------------------|
| <b>RADIOTHERAPY</b>   |  |                                     |                        |             |  |                                |                                       |                      |                                   |
| <b>Topic: Principles of Radiation Oncology (Radiotherapy)</b> |  | <b>Number of competencies: (03)</b> |                        |             | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |                                   |
| RT1.1   | Describe and discuss definition of radiation, mechanism of action of radiation, types of radiation | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       |                      | General Surgery, Anaesthesiology  |
| RT1.2   | Describe and discuss interaction of radiation with matter & measurement of radiation               | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       |                      |                                   |
| RT1.3   | Enumerate, describe and discuss classification and staging of cancer (AJCC, FIGO etc.)             | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       | Pathology            | General Surgery, General Medicine |
| <b>Topic: Radiation Protection</b>                            |  | <b>Number of competencies: (01)</b> |                        |             | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |                                   |
| RT2.1   | Describe and discuss radiation protection and personnel monitoring during radiation treatment      | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       |                      |                                   |
| <b>Topic: Radiobiology &amp; Chemoradiation</b>               |  | <b>Number of competencies: (02)</b> |                        |             | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |                                   |
| RT3.1   | Describe and discuss cell cycle and cell survival curve, principles of radiobiology                | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       |                      |                                   |
| RT3.2   | Describe and discuss synergism of radiation and chemotherapy                                       | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       |                      |                                   |
| <b>Topic: Radiation Treatment Delivery &amp; outcome</b>      |  | <b>Number of competencies: (09)</b> |                        |             | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |                                   |
| RT4.1   | Describe and discuss teletherapy machine (Co60/LINAC)  | K                                   | KH                     | Y           | DOAP session   | Written/ Viva voce             |                                       |                      |                                   |
| RT4.2   | Enumerate, describe and discuss types of treatment plan, basic workflow of 2D/3DCRT/IMRT/IGRT      | K                                   | KH                     | Y           | DOAP session   | Written/ Viva voce             |                                       |                      |                                   |

| Number   | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested teaching<br>learning method                          | Suggested assessment<br>method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>integration                 |
|--|--|-------------------------------------|------------------------|-------------|--|--------------------------------|---------------------------------------|----------------------|---|
| RT4.3  | Describe and discuss Brachytherapy machine (remote after loading)                                      | K                                   | KH                     | Y           | DOAP session   | Written/ Viva voce             |                                       |                      |   |
| RT4.4  | Describe and discuss different radioactive isotopes and their use in cancer patients                   | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       |                      |   |
| RT4.5  | Describe and discuss role of radiation in management of common malignancies in India (region specific) | K                                   | KH                     | Y           | Lecture and Bed side clinics                                   | Written/ Viva voce             |                                       | Pathology            | General Surgery, Obstetrics & Gynaecology |
| RT4.6  | Describe and discuss radiotherapy for benign disease   | K                                   | KH                     | Y           | Lecture  | Written/ Viva voce             |                                       | Pathology            | General Surgery, Obstetrics & Gynaecology |
| RT4.7  | Counsel patients regarding acute and late effects of radiation and supportive care                     | K/A/S                               | KH                     | Y           | Bed side clinic, group discussion                              | Written/ Viva voce             |                                       | Pathology            | General Surgery, Obstetrics & Gynaecology |
| RT4.8  | Describe oncological emergencies and palliative care   | K/A/S                               | K/KH                   | Y           | Lecture, group discussion                                      | Written/ Viva voce             |                                       |                      | General Surgery, Obstetrics & Gynaecology |
| RT4.9  | Display empathy in the care of patients with cancer  | A                                   | SH                     | N           |  |                                |                                       | AETCOM               |   |
| <b>Topic: Cancer Prevention &amp; Registries</b> |  | <b>Number of competencies: (01)</b> |                        |             | <b>Number of procedures that require certification : (NIL)</b> |                                |                                       |                      |   |
| RT5.1  | Describe and discuss cancer prevention, screening, vaccination, cancer registry                        | K                                   | K                      | Y           | Group discussion   | Written/ Viva voce             |                                       | Pathology            | General Surgery, Obstetrics & Gynaecology |

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.

Column D: K – Knows, KH - Knows How, SH- Shows how, P- performs independently,

Column F: DOAP session – Demonstrate, Observe, Assess, Perform.

Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation



| Number              | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>Y/N | Suggested teaching<br>learning method                               | Suggested assessment<br>method | Number<br>required<br>to certify<br>P | Vertical integration | Horizontal<br>integration     |
|---------------------|--|-------------------|------------------------|-------------|---|--------------------------------|---------------------------------------|----------------------|-------------------------------|
| <b>Orthopaedics</b> |  |                   |                        |             |   |                                |                                       |                      |                               |
| OR10.1              | Describe and discuss the aetiopathogenesis, Clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures | K                 | K/KH                   | Y           | Lecture, Small group discussion, Video assisted interactive lecture | Written/ Viva voce/ OSCE       |                                       | Pathology            | General Surgery, Radiotherapy |

**DENTISTRY (CODE: DE)**

| Number                         | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                        | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration           | Horizontal<br>Integration |
|--------------------------------|---|-------------------------------------|------------------------|---------------|--|--------------------------------|---------------------------------------|--------------------------------|---------------------------|
| <b>DENTISTRY</b>               |   |                                     |                        |               |  |                                |                                       |                                |                           |
| <b>Topic: Dental Caries</b>    |   | <b>Number of competencies: (05)</b> |                        |               | <b>Number of procedures that require certification (NIL)</b> |                                |                                       |                                |                           |
| DE1.1                          | Enumerate the parts of the tooth  | K                                   | K                      | N             | Lecture, Small group discussion                              | Viva voce                      |                                       | Human Anatomy                  |                           |
| DE1.2                          | Discuss the role of causative microorganisms in the aetio-pathogenesis of dental caries   | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Viva voce                      |                                       | Microbiology                   |                           |
| DE1.3                          | Identify Dental caries  | S                                   | SH                     | N             | Observation, Bed side clinics                                | Skill assessment               |                                       |                                |                           |
| DE1.4                          | Discuss the role of dental caries as a focus of sepsis  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Viva voce                      |                                       | Microbiology, General Medicine |                           |
| DE1.5                          | Counsel patients with respect to oral hygiene, diet and the direct bearing on systemic health                                   | A/C                                 | SH                     | Y             | DOAP session   | Document in Log book           |                                       |                                |                           |
| <b>Topic: Edentulous state</b> |   | <b>Number of competencies: (05)</b> |                        |               | <b>Number of procedures that require certification (NIL)</b> |                                |                                       |                                |                           |
| DE2.1                          | Discuss the various causes for partial /complete loss of teeth and associated structures  | K                                   | K                      | N             | Lecture, Small group discussion                              | Viva voce                      |                                       |                                |                           |
| DE2.2                          | Discuss the local and systemic sequelae of the above  | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Viva voce                      |                                       |                                |                           |
| DE2.3                          | Identify complete complement of teeth and identify missing teeth  | S                                   | SH                     | N             | Observation, Bed side clinics                                | Skill assessment               |                                       |                                |                           |
| DE2.4                          | Enumerate common ways of restoring the edentulous state   | K                                   | KH                     | Y             | Lecture, Small group discussion                              | Viva voce                      |                                       |                                |                           |
| DE2.5                          | Counsel patients on the importance of restoring missing teeth/tissues with respect to the benefits on oral and systemic health. | A/C                                 | SH                     | Y             | DOAP session   | Document in Log book           |                                       |                                |                           |

| Number                            | COMPETENCY<br>The student should be able to   | Domain<br>K/S/A/C                   | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method                         | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|-----------------------------------|---|-------------------------------------|------------------------|---------------|---|--------------------------------|---------------------------------------|----------------------|---------------------------|
| <b>Topic: Malocclusion</b>        |   | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| DE3.1                             | Aware of malocclusion and the tissues that cause it   | K                                   | K                      | N             | Lecture, Small group discussion                               | Viva voce                      |                                       |                      |                           |
| DE3.2                             | Enumerate the impact of malocclusion on aesthetics, health  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Viva voce                      |                                       |                      |                           |
| DE3.3                             | Identify malocclusion   | S                                   | SH                     | N             | Observation, Bedside clinics                                  | Skill assessment               |                                       |                      |                           |
| DE3.4                             | Counsel patients with respect to correction of malocclusion and the role it might have on oral health specifically on the TMJ | A/C                                 | SH                     | Y             | DOAP session  | Document in Log book           |                                       |                      |                           |
| <b>Topic: Oral cancer</b>         |   | <b>Number of competencies: (04)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| DE4.1                             | Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity     | K                                   | K                      | N             | Lecture, Small group discussion                               | Viva voce                      |                                       | Pathology            | ENT                       |
| DE4.2                             | Discuss the role of etiological factors in the formation of precancerous /cancerous lesions                                   | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Viva voce                      |                                       | Pathology            | ENT                       |
| DE4.3                             | Identify potential pre-cancerous /cancerous lesions   | S                                   | SH                     | N             | Observation, Bed side clinics                                 | Skill assessment               |                                       | Pathology            | ENT                       |
| DE4.4                             | Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.               | A/C                                 | SH                     | Y             | DOAP session  | Document in Log book           |                                       | Pathology            | ENT                       |
| <b>Topic: Periodontal disease</b> |   | <b>Number of competencies: (05)</b> |                        |               | <b>Number of procedures that require certification: (NIL)</b> |                                |                                       |                      |                           |
| DE5.1                             | Enumerate the parts of the tooth and supporting structures  | K                                   | K                      | N             | Lecture, Small group discussion                               | Viva voce                      |                                       | Human Anatomy        |                           |
| DE5.2                             | Enumerate the common diseases that affect the periodontium and identify local and systemic causative factors                  | K                                   | KH                     | Y             | Lecture, Small group discussion                               | Viva voce                      |                                       |                      |                           |

| Number | COMPETENCY<br>The student should be able to  | Domain<br>K/S/A/C | Level<br>K/KH/<br>SH/P | Core<br>(Y/N) | Suggested Teaching<br>Learning method | Suggested<br>Assessment method | Number<br>required<br>to certify<br>P | Vertical Integration | Horizontal<br>Integration |
|--------|--|-------------------|------------------------|---------------|---------------------------------------|--------------------------------|---------------------------------------|----------------------|---------------------------|
| DE5.3  | Identify Periodontal disease   | S                 | SH                     | N             | Observation, Bedside<br>clinics       | Skill assessment               |                                       |                      |                           |
| DE5.4  | Discuss the role of Periodontal disease as a focus of sepsis   | K                 | KH                     | Y             | Lecture, Small group<br>discussion    | Viva voce                      |                                       |                      |                           |
| DE5.5  | Counsel patients with respect to oral hygiene, diet and the direct bearing on systemic health and vice versa | A/C               | SH                     | Y             | DOAP session                          | Document in Log book           |                                       |                      |                           |

**Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.**

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| <b>Integration</b> |  |   |    |   |                                    |                    |  |           |  |
|--------------------|--|---|----|---|------------------------------------|--------------------|--|-----------|--|
| <b>Pathology</b>   |  |   |    |   |                                    |                    |  |           |  |
| PA24.1             | Describe the etiology, pathogenesis, pathology and clinical features of oral cancers | K | KH | N | Lecture, Small group<br>discussion | Written/ Viva voce |  | Dentistry |  |

## List of contributing subject Experts

### 1. Human Anatomy

- Dr. Praveen R Singh, Professor & Head, Department of Anatomy, Pramukhswami Medical College, Karamsad, Gujarat
- Dr. Nachiket Shankar, Associate Professor, Department of Anatomy, St. John's Medical College & Hospital, Bangalore

### 2. Physiology

- Dr. Mario Vaz, Professor, Department of Physiology, St. John's Medical College & Hospital, Bangalore
- Dr. Jayashree Sengupta, Former Professor & Head, Department of Physiology, All India Institute of Medical Sciences, New Delhi.
- Dr Hasmukh D Shah, Professor & Head, Department of Physiology, Pramukhswami Medical College, Karamsad, Gujarat

### 3. Biochemistry

- Dr. Nibhriti Das, Professor, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi
- Dr. S. P. Singh, Professor, Department of Biochemistry, Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh
- Dr. Hitesh N Shah, Professor & Head, Department of Biochemistry, Pramukhswami Medical College, Karamsad, Gujarat

### 4. Pharmacology

- Dr. S. K. Maulik, Professor, Department of Pharmacology, All India Institute of Medical Sciences, New Delhi
- Dr. Vandana Roy, Professor, Department of Pharmacology, Maulana Azad Medical College, New Delhi

## **5. Pathology**

- Dr. S. Datta Gupta, Professor, Department of Pathology, All India Institute of Medical Sciences, New Delhi
- Dr. Uma Chaturvedi, Professor, C-1303, Freedom Park Life, Sector- 57, Gurugram

## **6. Microbiology**

- Dr. S. Geetalakshmi, Dean, Professor, Department of Microbiology, Stanley Medical College, Chennai, Tamil Nadu.
- Dr. Padma Srikanth, Professor, Department of Microbiology, Sri Ramachandra Medical College & Research Institute, Chennai
- Dr. Suman Singh, Professor, Department of Microbiology, Pramukhswami Medical College, Karamsad, Gujarat

## **7. Forensic Medicine & Toxicology**

- Dr. Sanjeev Lalwani, Professor & Registrar (Academics), Department of Forensic Medicine, All India Institute of Medical Sciences, New Delhi
- Dr. T. D. Dogra, Former Director & Former Head, Department of Forensic Medicine, All India Institute of Medical Sciences, New Delhi; currently, Vice Chancellor, SGT University, Gurugram
- Col. Ravi Rautji, Professor & Head, Department of Forensic Medicine, Commanding Officer, Directorate General of Medical Services (Army), New Delhi
- Dr. S.D. Nanandkar, Professor & Head, Department of Forensic Medicine, Grant Government Medical College & Sir J.J. Group of Hospitals, Mumbai
- Dr. Indrajit L. Khandekar, In-charge CFMU and Associate Professor, Department of Forensic Medicine & Toxicology, MGIMS and Kasturba Hospital, Sewagram, Wardha.
- Dr. S. B. Punpale, Professor & Head, Department of Forensic Medicine, B. J. Medical College, Pune, Maharashtra

## **8. Community Medicine**

- Dr. B. S. Garg, Professor & Head, Department of Community Medicine, Mahatama Gandhi Institute of Medical Sciences, Wardha, Sewagram, Maharashtra
- Dr. Umesh Kapil, Professor, Department of Community Medicine, All India Institute of Medical Sciences, New Delhi
- Dr. Sanjay Zodpey, Director, Public Health Foundation of India, Isid Campus, 4 Institutional Area, Vasant Kunj, New Delhi
- Dr. Saudan Singh, Professor, Department of Community Medicine, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi
- Dr. Dinesh Kumar, Professor, Department of Community Medicine, Pramukhswami Medical College, Karamsad, Gujarat
- Dr. Pankaj B. Shah, Professor, Department of Community Medicine, Sri Ramachandra Medical College & Research Institute, Chennai.

## **9. General Medicine & Respiratory Medicine**

- Dr. Krishna G. Seshadri, Visiting Professor, Endocrinology & Metabolism, Balaji Vidyapeeth, Puducherry
- Dr. M. K. Bhatnagar, Director Professor, Department of General Medicine, Lady Hardinge Medical College, New Delhi
- Dr. Aparna Agarwal, Director Professor of Medicine, Lady Hardinge Medical College, New Delhi
- Dr. Anil Gurtoo, Director Professor of Medicine, Lady Hardinge Medical College, New Delhi

## **10. Pediatrics**

- Dr. Harish Chellani, Professor of Pediatrics, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi
- Dr. A. K. Dutta, Former Head, Kalawati Saran Children's Hospital, New Delhi



- Dr. S. Aneja, Director Professor & Head, Department of Pediatrics, Kalawati Saran Children's Hospital, New Delhi
- Dr. Latha Ravichandran, Professor, Department of Paediatrics, Sri Ramachandra Medical College & Research Institute, Chennai.

#### **11. Psychiatry**

- Dr. Rakesh Kumar Chadda, Department of Psychiatry, All India Institute of Medical Sciences, New Delhi
- Dr. N. M. Patil, Professor, Department of Psychiatry, Jawaharlal Nehru Medical College, Belagavi
- Dr. Rajesh Rastogi, Consultant & Head Department of Psychiatry, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi.
- Dr. Jagdish R Varma, Associate Professor, Department of Psychiatry, Pramukhswami Medical College, Karamsad, Gujarat

#### **12. Dermatology, Venereology & Leprosy**

- Dr. R. K. Gautam, Professor, Department of Dermatology, Venereology & Leprosy, Dr. Ram Manohar Lohia Hospital, New Delhi.
- Dr. Sujay Khandpur, Professor, Department of Dermatology, Venereology & Leprosy, All India Institute of Medical Sciences, New Delhi
- Dr. S. Murugan, Associate Professor of Dermatology, Sri Ramachandra Medical College & Research Institute, Chennai

#### **13. Physical Medicine and Rehabilitation**

- Dr. Sanjay Wadhwa, Professor, Department of Physical Medicine & Rehabilitation, All India Institute of Medical Sciences, New Delhi
- Dr. George Tharion, Head, Department of Physical Medicine & Rehabilitation, Christian Medical College, Vellore, Tamil Nadu

- Dr. Jagdish Menon, Professor & Head, Department of Orthopaedics and Dept. of Physical & Rehabilitative Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry

#### **14. General Surgery**

- Dr. N Ananthkrishnan, 2A Vairam Enclave, Siddhananda Nagar, Pondicherry -605005.
- Dr. P. V. Chalam, Former Professor, Department of Surgery, Gandhi Medical College, Secunderabad, Telengana.
- Dr. Dinesh Bhatnagar, Professor, Department of General Surgery, North Delhi Municipal Corporation Medical College, Hindu Rao Hospital, Malka Ganj, Delhi

#### **15. Ophthalmology**

- Dr. Smita Singh, Professor, Department of Ophthalmology, Mahatma Gandhi Institute of Medical Sciences, Wardha

#### **16. Oto-rhino-laryngology**

- Dr. Achal Gulati, Director Professor, Department of ENT, Maulana Azad Medical College, New Delhi
- Dr. Ravi Kumar, Professor & Head, Department of ENT, Sri Ramachandra Medical College & Research Institute, Chennai
- Dr. Suma Mathew, Professor, Department of ENT, Christian Medical College, Vellore, Tamil Nadu

#### **17. Obstetrics and Gynaecology**

- Dr. Neerja Bhatla, Professor, Department of Obstetrics & Gynecology, All India Institute of Medical Sciences, New Delhi
- Dr. Annie Regi, Professor & Head, Department of Obstetrics & Gynecology, Christian Medical College, Vellore, Tamil Nadu
- Dr. Usha Vishwanath, Professor, Department of Obstetrics & Gynecology, Sri Ramachandra Medical College & Research Institute, Chennai

## **18. Orthopaedics**

- Dr. P.V. Vijayaraghavan, Vice Chancellor & Professor of Orthopedics, Sri Ramachandra Medical College & Research Institute, Chennai
- Dr. Raj Bahadur, Professor & Head, Department of Orthopaedics, Postgraduate Institute of Medical Sciences, Chandigarh
- Dr. SC. Goel, Professor, Department of Orthopaedics, Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh

## **19. Anaesthesiology**

- Dr. Baljit Singh, Director Professor of Anaesthesia, G. B. Pant Hospital, Delhi
- Dr. Ramesh Keshav, Department of Anaesthesia, Dr. Ram Manohar Lohia Hospital, New Delhi
- Dr. Mridula Pawar, Consultant & Head, Department of Anaesthesia, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi

## **20. Radio- Diagnosis**

- Dr. Kishor Taori (late), Professor & Head, Department of Radiodiagnosis, Government Medical College, Nagpur

## **21. Radiotherapy**

- Dr. P. K. Jhulka, Dean & Professor of Radiotherapy, All India Institute of Medical Sciences, New Delhi.
- Dr. Shyam Shrivastava, Head, Department of Radiation, Tata Memorial Hospital, Mumbai

## **22. Dentistry**

- Dr. Sridevi Padmanabhan, Professor, Department of Orthodontics, Faculty of Dental Sciences, Sri Ramchandra Medical College & Research Institute, Chennai