

**Foundation Course for the Undergraduate Medical
Education Program**

2019



**Medical Council of India
Pocket-14, Sector-8, Dwarka,
New Delhi 110 077**

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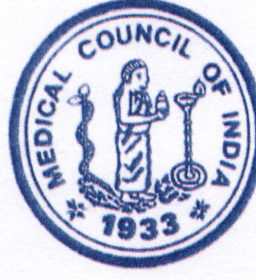
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FOREWORD

Medical education and educators have the responsibility of training the custodians of the health of the nation. The MBBS program is the foundation of the health delivery system in the country creating health care providers who need to provide not only adequate, appropriate and cost effective care but also need to be leaders of their community. Through the program it is expected that students will be able to fulfill their professional and personal goals and aspirations in addition to the expectations of the profession, society and nation. The course can be demanding and requires the learner to respond to the challenges of continued learning and improvement. Besides acquisition of new skills, learner is required to provide leadership in challenging situations and demonstrate exemplary professional and humanistic attributes. Medical students come from varied backgrounds and require a bridge that will transition from school to a professional course.

The Board of Governors in supersession of Medical Council of India has therefore created a Foundation Course that will not only serve as a bridge for the student into the MBBS program but will also orient the student to the knowledge, skills and attitude required of him or her during the program. The Foundation Course is envisaged to be a month long program with continued support provided through the year for students to acquire language, communication and computer skills. Particular emphasis on professional and ethical behaviour is placed in the Foundation Course; this dovetails into the AETCOM module - one of the flagship programs of the MBBS curriculum.

This booklet has been developed by experts and is meant to be used as a program guide for the Foundation Course. It outlines the outcomes that are intended to be achieved; it also incorporates examples of the Foundation Course program derived from best practices from around the country. Institutions are encouraged to develop their own Foundation Course that addresses local needs and brings out the institutional flavour while aligning the whole program to the outcomes identified in the booklet. The Medical Council of India also welcomes institutions to share their learning feedback and best practices that will enhance the value and structure of the program in the coming years.

The Council is grateful to the experts who have developed this booklet for their time and effort. Appreciation is also due to the Academic Cell and the members of expert group headed by Dr. Avinash Supe under whose guidance the course and the competency based curriculum has been developed and is being progressively rolled out in the country.

(Dr. V. K. Paul)



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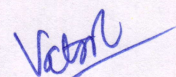
Foreword



India has the unique distinction of having the largest number of medical schools since it has taken the responsibility to create a large pool of health educators who would be responsible to train the young Indian Medical Graduate joining the undergraduate medical education program. The MBBS program is the foundation of the health delivery system in the country, creating health care providers who need to provide not only adequate, appropriate and cost effective health care but also need to be leaders of their community, in due course. Medical students in India come from diverse backgrounds in terms of geography, culture, language, economy, social construct, medium of instruction and education Boards. The MBBS course is a highly challenging program which prepares the student for a lifetime of altruistic care, continued learning, discipline, professional and ethical behavior and respect for human interactions, systems and processes. It is therefore necessary that a smooth transition of the high school student to this challenging learning stream is ensured and to achieve this, a Foundation Course at the beginning of the MBBS program was considered necessary.

This booklet has been developed by Council-nominated experts and is meant to be used as a program guide for the Foundation Course; institutions are encouraged to develop their own format of the Foundation Course that addresses local needs while aligning the whole program to the outcomes identified in the booklet. The Foundation Course is the forerunner to the roll out of the competency based UG curriculum across the country under the aegis of the Medical Council of India & Board of Governors.

The Council is grateful to the Expert group who have developed this booklet for their valuable time, knowledge, expertise and effort ably supported by the Academic Cell of the Council.


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Curriculum Implementation Support Program

Module – 1

FOUNDATION COURSE

FOUNDATION COURSE

Objective of the document

The objective of this document is to facilitate institutions and faculty in implementing a **Foundation Course** of one-month duration at the beginning of the MBBS course that will sensitise the fresh medical student with the required knowledge and skills that will assist him/her in acclimatising to the new professional environment which would be his/her milieu for a life-long career in the medical profession. The Foundation Course will also provide a sound foundation for learning in the MBBS course and later in their professional career. While the institutions are expected to abide by the general guidelines, local changes can be made depending on the context and requirements.

1. Glossary of terms used in the document

Orientation: Refers to the awareness created in new students with respect to place (learning environment and facility), time, teaching schedules and timetables, processes (Rules, Regulations, policies and procedures), personnel (faculty, staff, and mentors), patients and their relatives.

Skills Module: Refers to basic skills that are considered important for all health care personnel who deal with patients and requires students to be trained in prior to entering patient care areas.

Enhancement skills: Refers to those skills which are needed to enable students from diverse backgrounds (including different Boards, language of instruction, culture and varied degrees of technological exposure) to appreciate and accommodate the similarities and differences in medical practice and to feel at par with each other.

Sports and extra-curricular activities: Refers to sports and extra - curricular activities permitted within the time schedule.

Professionalism and ethics: Professionalism defines a set of values and behaviour that build the trust that a patient has in his/ her doctor. Ethics are principles that govern the behaviour of doctors. Professional competence, effective communication and ethics are the three founding principles of Professionalism.

2. Introduction

Medical education in India requires training in a wide spectrum of domains that involves exposure to human interactions and interpersonal relationships in various settings including hospital, community, clinics etc. The training is intense and demands great commitment, resilience and lifelong learning. Students enter a new environment in medical college at around 17 years of age directly from school which can be challenging. Therefore, it is desirable to create a period of acclimatisation and familiarization to the new environment. This would include an introduction to the course structure, learning methods, technology usage, and peer interactions which would facilitate their smooth transition from high school to medical college.

This is proposed to be achieved through a dedicated one month exclusive “Foundation Course”, at the beginning of the MBBS course, to orient and sensitize the student to the various identified areas. Many of these identified areas will need to be followed up by more focused outcome-based sessions at various stages in the MBBS course. This will be achieved through activities/small courses integrated throughout the course which will be like the thread running through a garland. At appropriate stages throughout the course, emphasis will be laid on the various essential roles of the “Indian Medical Graduate”.

3. Purpose

The purpose of the Foundation Course include:

- a) Orienting the students to all aspects of the medical college environment.
- b) Equipping them with certain basic, but important, skills required for patient care and enhancing their communication, language, computer and learning skills.
- c) Providing opportunity for peer and faculty interactions and an overall sensitisation to the various learning methodologies.

4. Context from proposed GMER 2019 (Graduate Medical Education Regulations)

9.1. Foundation Course

Goal: The goal of the Foundation Course is to prepare a learner to study Medicine effectively. It will be of one-month duration after admission (see Table 1).

9.1.1 **Objectives:** The objectives are to:

(i) Orient the learner to:

- a. The medical profession and the physician's role in society
- b. The MBBS programme
- c. Alternate health systems in the country and history of medicine
- d. Medical ethics, attitudes and professionalism
- e. Health care system and its delivery
- f. National health priorities and policies
- g. Universal precautions and vaccinations
- h. Patient safety and biohazard safety
- i. Principles of primary care (general and community-based care)
- j. The academic ambience

(ii) Enable the learner to acquire enhanced skills in:

- a. Language
- b. Interpersonal relationships
- c. Communication
- d. Learning including self-directed learning
- e. Time management
- f. Stress management
- g. Use of information technology

(iii) Train the learner to provide:

- a. First-aid
- b. Basic life support

9.1.2 In addition to the above, learners may be enrolled in one of the following programmes which will be run concurrently:

- (i) Local language programme
- (ii) English language programme

(iii) Computer skills

These may be done in the last hours of the day for the duration of the Foundation Course.

9.1.3 These sessions must be as interactive as possible.

5. Major Components

The major components of the Foundation Course include:

- **Orientation Program:** This includes orienting students to all the components mentioned in GMER 9.1 and should be completed as one block in the first week.
- **Skills Module (Basic):** This involves skill sessions such as Basic Life Support, First Aid, Universal precautions and biomedical waste and safety management that students need to be trained prior to entering the patient care areas.
- **Field visit to Community and Primary health centre:** These visits provide orientation to the care delivery through community and primary health centres, and include interaction with health care workers, patients and their families.
- **Professional development including Ethics:** This is an introduction to the concept of Professionalism and Ethics. This component will provide students with understanding that clinical competence, communication skills and sound ethical principles are the foundation of professionalism. It will also provide understanding of the consequences of unethical and unprofessional behaviour, value of honesty, integrity and respect in all interactions. Professional attributes such as accountability, altruism, pursuit of excellence, empathy, compassion and humanism will be addressed. It should inculcate respect and sensitivity for gender, background, culture, regional and language diversities. It should also include respect towards the differently abled persons. It introduces the students to the basic concept of compassionate care and functioning as a part of a health care team. It sensitises students to “learning” as a behaviour and to the appropriate methods of learning.

Orientation to Professionalism and Ethics will continue as the AETCOM module after the first month of the MBBS course and throughout the first year, with reinforcement of the various components introduced.

- **Sports and Extracurricular activities:** These have been included, in order to demonstrate the importance of work-life balance in a demanding profession, and provide an opportunity for students to have compulsory physical activity and to showcase their talents. The Foundation Course should have compulsory 4 hours

per week for sports and 2 hours per week for extracurricular activities, adding up to 22 hours.

- **Enhancement of Language / Computer skills / Learning Skills:** These are sessions to provide opportunity for the students from diverse background and language competence to undergo training for speaking and writing English, fluency in local language and basic computer skills. The students should be sensitized to various learning methodologies such as small group discussions, skills lab, simulations, documentation and concept of Self-Directed learning.

Structure of the program for students

Table.1

Subjects/ Contents	Total Teaching hours
Orientation ¹	30
Skills Module ²	35
Field visit to Community Health Centre	8
Professional Development including ethics	40
Sports and Extracurricular activities	22
Enhancement of language/ computer skills ³	40
Total teaching hours	175

1. Orientation course will be completed as single block in first week and will contain elements outlined in the section 9.1.1 of the GMR
2. Skills modules will contain elements outlined in the section 9.1.1 of the GMR
3. Based on perceived needs the students may choose any or both of language enhancements (English or local spoken or both) and computer skills. This should be available longitudinally throughout the duration of the Foundation Course and afterwards.

Foundation Course will be organized by co-ordinator appointed by Dean of the college and will be under supervision by the heads of preclinical departments.

Foundation Course Modules

1. Orientation Module	Total hours: 30
1A. Orientation Module: Introduction to institution / campus / facilities	
1B. Orientation Module: Role of doctors in the society	
1C. Orientation Module: History of Medicine and alternate systems	
1D. Orientation Module: IMG roles / overview MBBS curriculum various career pathways	
1E. Orientation Module : Principles of family practice	
2. Skills Module:	Total hours: 35
2A.Skills Module: First Aid	
2B.Skills Module: BLS	
2C.Skills Module: Universal precautions	
2D.Skills Module: Waste management	
2E.Skills Module: Immunization	
2F.Skills Module: Documentation	
3. Community orientation module	Total hours: 8
3A. Community Orientation Module: National Health goals and policies/ health Care systems/ community health	
3B. Community Orientation Module: Interactions with patients and families, Communities.	
4. Professional Development and Ethics Module (P&E)	Total hours: 40
4A. (P&E): Concept of Professionalism and Ethics	
4B. (P&E): White coat Ceremony	
4C. (P&E): Professional behaviour and altruistic behaviour	
4D. (P&E): Working in a health care team	
4E. (P&E): Disability competencies	
4F. (P&E): Cultural competence	
4G. (P&E): Stress management	
4H. (P&E): Time management	
4I. (P&E): Interpersonal relationship	
4J. (P&E): Learning	
5. Enhancement of Language and Computer Skills Module	Total hours:40
5A.Enhancement of Language and Computer Skills Module: Communication	
5B.Enhancement of Language and Computer Skills Module: Local Language training	
5C. Enhancement of Language and Computer Skills Module: English Language training	
5D.Enhancement of Language and Computer Skills Module: Computer Skills training	
6. Sports and extracurricular activities:	Total hours: 22

Sports should be for a mandatory 4 hours per week and extra-curricular activities 2 hours per week, subject to a total of 22 hours.

6. Learning outcomes

Code	COMPETENCY The student should be able to:	Domain	K/KH/ SH/P
1.	Topic : ORIENTATION		
FC 1.1	Demonstrate understanding of the role of doctors in the society and their impact	A	KH
FC 1.2	Demonstrate understanding of the Roles of an Indian Medical Graduate and relate it to the societal impact	A	KH
FC 1.3	Discuss and appreciate the expectations of the students from the Nation, society, Institution, peers, colleagues and patients and vice versa	A	KH
FC 1.4	Demonstrate understanding of the rules and regulations of the institution	A	SH
FC 1.5	Orient themselves to the college campus, facilities, faculty, administrative structure, support systems and processes of the institution	A	KH
FC 1.6	Discuss the various career pathways and opportunities for personal growth	A	KH
FC 1.7	Demonstrate understanding of the overview of MBBS curriculum, its structure and outcomes and its relation to the career pathways	K	KH
FC 1.8	Demonstrate understanding the role of physician at various levels of Health care delivery	K	KH
FC 1.9	Discuss the principles of family practice	K	KH
FC 1.10	Demonstrate awareness of the History of Medicine and alternate systems of Medicine	K	K
2	Topic : Skills		
FC 2.1	Perform Basic Life support in Skills lab	S	SH
FC 2.2	Perform First Aid in a simulated environment	S	SH
FC 2.3	Follow bio-safety and universal precautions	S	SH
FC 2.4	Demonstrate handling and safe disposal of Biohazardous materials in a simulated environment	S	SH
FC 2.5	Demonstrate proper hand washing and use of personal protective equipment	S	SH

FC 2.6	Demonstrate appropriate response to needle stick injuries	S	SH
FC 2.7	Demonstrate Biomedical Waste segregation (BMW), observe and explain the process of management of BMW in accordance with National Regulations	S	SH
FC 2.8	Discuss the Immunization requirements of Health care professionals	K	KH
FC 2.9	Demonstrate awareness of significance of documentation in patient care and the proper method of documentation	S	SH
3	Community Orientation and field visits		
FC 3.1	Demonstrate understanding of the National Health Goals and Policies	K	KH
FC 3.2	Discuss the national health scenario, demographic, socio-cultural and epidemiological issues	K	KH
FC 3.3	Demonstrate understanding of the health care systems in India with reference to primary, secondary and tertiary level care	K	KH
FC 3.4	Discuss the basic principles of community health and its impact on health and disease	S	SH
FC 3.5	Demonstrate understanding of the structure and functioning of the community health center	K	KH
FC 3.6	Demonstrate ability to obtain patient experiences through patient and family interactions and relate these experiences to impact of environment and diseases.	S	SH
4	Professional Development including Ethics		
FC 4.1	Demonstrate understanding of the concept of Professionalism and ethics among health care professionals and discuss the consequences of unprofessional and unethical behavior	S	KH
FC 4.2	Demonstrate understanding that compassion, altruism, integrity, duty, responsibility and trust are the core values that defines the nature of the physician's work	K	KH
FC 4.3	Discuss the value, honesty and respect during interaction with peers, seniors, faculty, other health care workers and patients	S	KH

FC 4.4	Discuss the significance of working in a health care team	S	KH
FC 4.5	Discuss disability competencies	K	KH
FC 4.6	Demonstrate understanding and respect of cultural diversities and interact with those with different cultural values	K/A	KH
FC 4.7	Discuss the significance and methods of stress management and risk taking behavior.	K	KH
FC 4.8	Understand the role of Yoga and meditation in personal health	S	S
FC 4.9	Discuss the significance and appropriate ways of Time management	K	KH
FC 4.10	Demonstrate understanding of importance of interpersonal relationship while working in a health care team	S	KH
FC 4.11	Understand the role of mentoring	S	KH
FC 4.12	Demonstrates understanding of the process of group learning and group dynamics	S	KH
FC 4.13	Comprehend the learning pedagogy and its role in learning skills	S	KH
FC 4.14	Demonstrates understanding of different methods of self-directed learning	S	KH
FC 4.15	Understand collaborative learning	S	KH
5	Enhancement skills - Communication and language skills		
FC 5.1	Demonstrate ability to communicate with patient and families, be aware of barriers to communication and appropriate ways to respond	C	SH
FC 5.2	Demonstrate use of local language in patient and peer interactions	C	SH
FC 5.3	Demonstrate ability to communicate and learn in English	C	SH
FC 5.4	Demonstrate basic computer skills	S	SH
FC 5.5	Demonstrate ability for accessing online resources	S	SH

7. Formative and Internal Assessment

- Foundation Course is compulsory and an attendance of 75% will be mandatory
- Feedback, comments and/or grades about the student's performance by the faculty mentor can be documented particularly for the skills training
- The performance of the students in the Foundation Course will **NOT** contribute towards internal assessment marks.
- Student's feedback about the Foundation Course also needs to be documented in a structured format. This will help in gathering student's perceptions about various aspects of Foundation Course and help in program evaluation and refinement.

8. Capacity Building for Faculty

The components of the Foundation Course are multifarious and will require resource faculty from various disciplines. Many of these identified areas of the Foundation Course will need to be followed up by more focused outcome-based sessions at various stages in the course of MBBS through activities spirally integrated throughout the course. The objectives of each of the sessions in the Foundation Course are specific and the resource faculty need to understand not only the content, context and specific objectives of these sessions but also the approach and need for an interactive teaching learning methodology. The Dean/Principal of every medical college will ensure that adequate faculty training and resources are made available for implementation of the Foundation Course.

9. Curricular Governance and Evaluation

The Dean/ Principal in each medical college will identify **a faculty coordinator from preclinical departments** for conduct of the Foundation Course.

The faculty coordinator will identify resource faculty for the various sessions from within and outside the institution and coordinate the training of the resource faculty, the implementation of the program and the evaluation of the program.

Program evaluation report from faculty and students will be submitted to curriculum committee within four weeks of completion of Foundation Course.

Annexures

(The following are examples of schedules and lesson plans that may be used for Foundation Course. Institutions are encouraged to make their own plan tailored to their local needs and aligned to proposed outcomes)

		Mon	Tue	Wed	Thu	Fri	Sat	Sun
Week 1	Morning	1A	1B	1C	1D	1E	2F	
	post noon	1A	1B 6A	1C 6A	1D 6A	1E 6A		
Week 2	Morning	2B	2A	2C	2D	2E	6B	
	post noon	2B	2A 6A	2C 6A	2D 6A	2E 6A		
Week 3	Morning	3A	4A	4C	4D	4G	4F 6B	
	post noon	3B	4A 6A	4C 6A	4D 6A	4E 6A		
Week 4	Morning	4H	4J	5A	5D	5D	5B 6B	
	post noon	4I	5B 6A	5B 6A	5B 6A	5B 6A		
Week 5	Morning	5D	5C	5C				
	post noon	5B	5C	4B				

Sample lesson plans

1. Orientation

The purpose of the Orientation Module is to provide the new MBBS student a greater understanding of the medical profession in a historical, local and national context, a knowledge of the institution in which he/she will spend the next six years, and an idea of his/her role as an MBBS student.

1A Orientation Module: Introduction to institution / campus / facilities

The medical students at the very beginning of their course should have a clear understanding of the goals of their training, the expectations of the nation, the vision and mission of the institution, Rules and Regulations of the organisation. They must also be provided an orientation to the campus and the facilities available.

FC 1.2	Demonstrate understanding of the Roles of an Indian Medical Graduate and relate it to the societal impact	A	KH
FC 1.3	Discuss and appreciate the expectations of the students from the nation, society, Institution, peers, colleagues and patients and vice versa	A	KH
FC 1.4	Demonstrate understanding of the rules and regulations of the institution	A	SH
FC 1.5	Orient themselves to the college campus, facilities, faculty, administrative structure, support systems and processes of the institution	A	KH

Objectives

At the end of the session the students should be able to:

- Explain the Roles of the Indian Medical Graduate
- Discuss their expectations from the Nation, institution, society, colleagues and peers and vice versa
- Understand the Rules and Regulations of the Institution
- Familiarise themselves with the college campus, facilities, administrative structure, support systems and processes of the institution

Methodology

No.	Content area	Methodology	Time
1	Welcome and Introduction by institutional heads	Inspiring talk... to the new MBBS graduates and their parents	2 hours
2	Vision / Mission of the institution		
3	Roles of an Indian Medical Graduate		
4	Expectation of the students from Nation, Society, Institutions, colleagues and peers	Overview lecture/ interactive discussion	1 hour
4	Rules and Regulations of the institution	Overview lecture/ interactive discussion	1 hour
5	Orientation to the college / campus / facilities	<ul style="list-style-type: none">▪ Walk through the college including lecture halls, common rooms, preclinical departments, office of the Dean and administration, library, food facilities, security facilities, auditorium –▪ mini talks at important facilities regarding Rules and Regulations	4 hours
6	Introduction to faculty / mentors	Interactive session with faculty mentors and peers	2 hours

Assessment:

Open feedback at the end of the Foundation Course

1B. Orientation Module: Role of doctors in the society

It is important for new entrants to the new MBBS program to have a clear understanding of the roles and responsibilities of a doctor in society and the expectations from society, patients and the profession. It is important to sensitise and inspire students to the wider roles of physicians in society beyond patient-doctor interaction.

FC 1.1	Demonstrate understanding of the role of the doctors in the society and their impact	A	KH
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Objectives:

At the end of this session, the student will be able to:

1. Appreciate the wider role of physicians in society beyond the physician – patient interaction
2. Reflection their own potential roles in society

At the end of this session, the moderators will be able to:

1. Better understand the attitude of students who join the medical course regarding their perceptions of the social role of physicians
2. Review the session and make plans for:
 - a. Further sessions
 - b. The session next year

Methodology

No	Sub session	Methods	Requirements	Time
1	Introduction	Moderators, observers and other participants		10 minutes
2	Role of doctors buzz groups	<ul style="list-style-type: none">• Create buzz groups of 10 students each• Ask each group to list, discuss and note down on separate cards the various	10 cards per group i.e. 150 cards Felt pens	30 minutes

		<p>roles of doctors</p> <ul style="list-style-type: none"> • After 10 minutes, ask one student from each batch to bring up their cards to put on four different posters which will be labelled at the back as – diagnostic role, treating role, physician-patient interactive roles, societal role. ▪ The students will be blinded to labels at the back of poster. The moderator will help them separate and place their cards. • At the end, the entire group will view the posters – the moderator will turn the posters around to show the poster titles at the back <p>The discussion that follows will be based on the nature of responses:</p> <ul style="list-style-type: none"> • Do the students see the doctor within a constrained role? • Is there a societal role for doctors in all conditions? – is there an even greater 	<p>04 large black poster sheets</p> <p>A4 white paper – for notes and observations</p>	
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		<p>relevance in a diverse, unequal society like India</p> <ul style="list-style-type: none"> • Is there a possibility that doctors remove themselves from society – us (ivory tower) AND them – the concept of isolationism and the ‘urban citadel’ 		
3	Short film	<p>Short film: In Silence – maternal mortality in India</p> <p>Discussion:</p> <ul style="list-style-type: none"> • Is this a medical problem or are there wider problems? • If there are wider problems, what are they? • What can doctors do to address wider problems? • Do doctors have privileged roles in society that they can exploit for greater common good? 	LCD projector with adequate sound facilities	30 minutes
4	Meet the doctor	<p>Meet the doctor:</p> <p>Three doctors with diverse backgrounds who have chosen wider roles in society:</p> <p>They introduce themselves and their work</p>	Arrange chairs for visitors to face the students	60 minutes

		<p>Interview them:</p> <ul style="list-style-type: none"> • Why did they choose this option? • What were the choices that they had to make? • What challenges did they face? • What advice, if any, would they give to these students? 		
5	Wrap up	<p>Wrap up: Each student gets one card.</p> <ul style="list-style-type: none"> • Think of one social issue in your own local area. • What could you do to help address that issue? <p>Students stick it on a poster entitled –</p> <ul style="list-style-type: none"> • I AM PART OF SOCIETY – I CAN CONTRIBUTE TO IT • Time for entire batch to review what has been put up- • Which of the sessions did you like the most & why? 	<p>150 cards</p> <p>4 black poster sheets</p> <p>60 brief feedback questionnaires</p>	30 minutes

Alternative method

No	Sub Session	Methods	Requirements	Time
1	Introduction	An interactive lecture to discuss <ul style="list-style-type: none">the roles of a physician and the expectation from the patient, families and society. followed by small group discussion Videos / clippings relating to the roles of the doctor could also be used as a trigger for discussion	LCD projector, audio output for video, Appropriate Video clips, Flip charts, Marker pens	1 hour
2	Shadowing the physician	Students asked to shadow Physicians and <ul style="list-style-type: none">observe patient- physician interaction and their expectations from doctors		2 hours
3	Reflection	Small group discussion and reflection		2 hours
4	Wrap up	Summarize salient points		10 minutes

Assessment: Formative: May be assessed by active discussion in the small group session or by Reflective writing in log book.

1C.Orientation Module: History of Medicine and alternate systems

Students at the time of entry into MBBS must be introduced to the evolution of the system of medicine which they will be learning and appreciate the great men and women behind many of the seemingly mundane practices and concepts in modern medicine. The students should also be introduced to the alternative systems that are available and how they can impact patient preferences and choices.

FC 1.10	Demonstrate awareness of the History of Medicine and alternate systems of Medicine	K	K
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Objectives

At the end of the session, the students should be able to:

1. Discuss the History of Medicine
2. Distinguish Alternative Medicine, Complementary Medicine and Evidence based Medicine
3. Discuss the various Alternative Medicine practices in India and its practice impact

Methodology

No	Sub Session	Methods	Requirements	Time
1	Overview	lecture/ interactive discussion	LCD projector, Flip charts, Marker pens	30 minutes
2	Group work	Students, split into groups, are given a structured task on <ul style="list-style-type: none">• obtaining information on one important aspect of the History of Medicine (example – evolution of the germ theory of medicine, discovery of vaccines,...etc)	History of Medicine handouts	3 hours

		Small group discussion and reflection Presentation by groups and discussion		
3	Alternate systems of Medicine	lecture/ interactive discussion to address the following questions <ul style="list-style-type: none"> • What is Alternative Medicine? • What is Complementary Medicine? • What is Evidence Based Medicine? • What is the difference between Modern Medicine and Complementary and Alternative Medicine (CAM)? • What is the practice impact? 	LCD projector, Flip charts, Marker pens	1 hour
3	Wrap up	Summation and learning points		10 minutes

Assessment: General feedback about the usefulness of the session for future planning

1D. Orientation Module: IMG roles / overview of MBBS curriculum and various career pathways

It is important for medical students at entry to have an overview of the curricular frame work and the expected learning outcomes from them. It is very important for them to know their career path and the road ahead.

FC 1.2	Demonstrate understanding of the Roles of an Indian Medical Graduate and relate it to the societal impact	A	KH
FC 1.7	Demonstrate understanding of the overview of MBBS curriculum, its structure and outcomes and its relation to the career pathways	K	KH
FC 1.6	Discuss the various career pathways and opportunities for personal growth	A	KH

The objectives

At the end of the session, the students should be able to:

- Comprehend the overall Goal and outcomes of the MBBS program
- Reflect on the various Roles of the Indian Medical Graduate
- Discuss the structure of the MBBS program
- Recognise the various career pathways that are available for their Career growth

Methodology

No	Sub Session	Methods	Requirements	Time
1	GMR 2019	Lecture/ interactive discussion about the salient features of the GMR 2019 <ul style="list-style-type: none">• Explain the MBBS curriculum, its structure, outcomes and curricular requirements for course completion and program certification	LCD projector, Flip charts, Marker pens GMR 2019 handouts	1 hour
2	Panel discussion	A panel of specialists and physicians from diverse career pathways <ul style="list-style-type: none">• Discuss the opportunities for the students followed by a question answer session. This could be done by the Alumni from various career backgrounds		2 hour
3	Wrap up	Summation and learning points		10 minutes

Assessment: General feedback about the usefulness of the session for future planning

1E Orientation Module: Principles of family practice

The students need to be provided a basic understanding of the concept of family practice and holistic care. It is also important for the student to understand the role of the family practitioner in the health system, the role they could play at the various levels of health care.

FC1.8	Demonstrate understanding the role of physician at various levels of Health care delivery	K	KH
FC 1.9	Discuss the principles of family practice	K	KH

Objectives:

At the end of this session, the student will be able to:

1. Discuss the principles of family practice and holistic care
2. Describe the role of the physician in the health care system

Methodology

No	Sub Session	Methods	Requirements	Time
1	Principles of family practice and holistic care	<p>Lecture/ interactive discussion about the ten principles of family practice:</p> <ul style="list-style-type: none"> ▪ Caring ▪ Clinical Competence ▪ Cost-effectiveness ▪ Continuity of care ▪ Comprehensive care ▪ Common problems management expertise ▪ Co-ordination of Care ▪ Community based care and research ▪ Counselling and Communication skills ▪ Continuing Medical Education (CME) <p>Depending on available time the session may be preceded by either an appropriate case vignette or a visit to a family practitioner</p>	<p>LCD projector, Flip charts, Marker pens Case vignette or a visit to a family practitioner</p>	1 hour

Assessment: Formative: Reflective writing

2. Skills

The fresh undergraduate student should be aware of some basic principles of Hospital safety and trained in certain basic skills that are mandated before they enter patient care areas. These are a part of quality initiatives to ensure patient and physician safety.

2A and 2B Skills module 1 and 2: BLS and First Aid

New entrants into medical fraternity should have a basic understanding of resuscitation and first aid skills.

The Basic Life Support (BLS): CPR provider training is designed to provide the students with foundational knowledge and skills needed to perform cardiopulmonary resuscitation (CPR) and other lifesaving skills. The first-aid component of this course addresses additional circumstances and diseases that may require intervention and assistance before the patient is transferred to emergency medical services.

FC 2.1	Perform Basic Life support in Skills lab	S	SH
FC 2.2	Perform First Aid in a simulated environment	S	SH

Objectives:

At the end of this session, the student will be able to:

1. Perform adequate chest compressions, deliver adequate ventilations in adults and children and appropriately use of an Automated External Defibrillator (AED).
2. Recognize and initiate first aid for several life threatening emergencies.

150 students can be divided into two groups of 75 each. Each group should be engaged by facilitators for a three hour session inclusive of break and subsequently groups should be rotated.

Group 1: Basic Life Support

No	Sub Session	Methods	Requirements	Time
1	Introduction	Introduction to Basic Life Support. Its importance and need.		15 minutes
2	Demonstration with appropriate videos followed by Hands on training	<p>15 groups of 5 students each = 75 Total</p> <p>Demonstrate individual skills of basic life support followed by hands on practice of each skill and finally integration of all the skills in a patient scenario.</p> <ul style="list-style-type: none"> • Introduce them to C-A-B algorithm • Recognition of cardiac and respiratory arrest • Pulse check • Chest compression • Delivering effective breaths • Use of an AED • Integration of all skill sets into a single scenario. <p>These skills will be taught for both adults and children (including infants)</p>	<p>Space/Area to accommodate 75 students, Adult, child and infant Basic Life support mannequins.</p> <p>LCD projector with adequate sound facilities to show appropriate videos.</p>	2.5 hours (150 minutes)
3	Wrap up	Feedback from students and guidance for future learning		15 minutes

Group 2: First Aid

No	Sub Session	Methods	Requirements	Time
1	Introduction	Introduction to several life threatening emergencies, the importance of first aid and its benefits.		15 minutes
2	Appropriate videos followed by discussion and hands on training when required.	<p>75 students: Table top discussion</p> <p>Initial videos to demonstrate emergency scenarios followed by appropriate first aid.</p> <ul style="list-style-type: none"> • First Aid Basics (Approach) • Medical emergencies (Breathing problems, Choking, Allergic reactions) • Injury Emergencies (Bleeding, Bandaging, Burns, Electrical Injuries) • Environmental Emergencies (Bites and stings, heat cramps) <p>Emphasis on Do's and Don'ts in each category.</p>	<p>Space/Area to accommodate 75 students, adult, child and infant Basic Life support mannequins.</p> <p>LCD projector with adequate sound facilities to show appropriate videos.</p>	2.5 hours (150 minutes)
3	Wrap up	Feedback from students and guidance for future learning		15 minutes

Assessment: Assessment of skill performance as a part of the formative assessment

2C Skills Module: Universal Precautions (UP)

FC 2.3	Follow biosafety and universal precautions	S	SH
FC 2.4	Demonstrate handling and safe disposal of Bio hazardous materials in a simulated environment	S	SH
FC 2.5	Demonstrate proper hand washing and use of personal protective equipment	S	SH
FC 2.6	Demonstrate appropriate response to needle stick injuries	S	SH

Objectives:

At the end of this session, the student will be able to:

1. Define Universal Precautions
2. List essential components of Universal Precautions
3. List infective and non- infective body fluids
4. Demonstrate correct techniques of Hand washing, gloving/degloving, disinfection, handling sharps, waste disposal

Methodology

No	Sub Session	Methods	Requirements	Time
1	Definition of Universal Precautions (UP)	Interactive lecture about: <ul style="list-style-type: none"> ▪ Definition of UP ▪ Essential components of UP ▪ Infective and non-infective body fluids (may use a drill to recap) 	LCD projector, Flip charts, Marker pens	1 hour
2	Interactive practical demonstration	<ul style="list-style-type: none"> ▪ Divide the students into groups of not more than 10 per group. <p>There should be one faculty per group who will conduct an interactive practical demo about</p>		2 hour

		<ul style="list-style-type: none"> ▪ Use of hand rub ▪ Gloving and de-gloving <p>The students will be then allowed to demonstrate the correct method and receive feedback</p>		
3	Wrap up	Summation and learning points		10 minutes

Assessment: Formative assessment, OSCE

2D Skills Module: Waste management

FC 2.7	Demonstrate Biomedical Waste (BMW) segregation, observe and reflect on the process of management of BMW in accordance with National regulation	S	SH
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Objectives:

At the end of this session, the student will be able to:

1. Define biomedical waste
2. Explain the hazards of improper disposal of biomedical wastes
3. Describe the different types of waste generated in a health care facility
4. Explain how one should segregate waste
5. Explain how one should dispose biomedical wastes
6. Methodology

No	Sub session	Methods	Requirements	Time
1	Definition of BMW	Interactive lecture about: <ul style="list-style-type: none"> ▪ Definition of biomedical wastes ▪ Different types of waste generated in a health care facility) ▪ Segregation and disposal of waste 	LCD projector, Flip charts, Marker pens	1 hour

Assessment: Students may present a reflection of their observation, OSCE on BMW segregation

2E Skills Module: Immunization

The students should be sensitised to the occupational exposure and the need for protection and safety. During this session, it's important to review the immunisation status of the students and also ensure compliance to the requirements.

FC 2.8	Discuss the Immunization requirements of Health care professionals	K	KH
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Objectives:

At the end of this session, the student will be able to:

1. List the vaccine-preventable diseases (VPD)
2. Explain why vaccination is important for staff and students
3. Describe the vaccination recommendation for health care personnel (Hepatitis B, Chicken pox etc.)

Methodology

No	Sub Session	Methods	Requirements	Time
1	Vaccine-preventable diseases and recommendations	Interactive lecture about: <ul style="list-style-type: none"> • What are vaccine-preventable diseases (VPD)? 	LCD projector, Flip charts, Marker pens	1 hour

	for health care personnel	<ul style="list-style-type: none"> • Why is vaccination important for staff? • VPDs in healthcare • Recommendation for health care personnel (Hepatitis B, Chicken pox) 		
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Assessment: Formative assessment, short notes, Viva in summative assessments

2F Skills Module: Documentation

The students in the first year should be introduced to the importance of “Documentation” in patient care. They should learn the method of appropriate documentation and understand its significance in patient and employee safety.

FC 2.9	Demonstrate awareness of significance of documentation in patient care and the proper method of documentation	S	SH
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Objectives

At the end of the session, the students should be able to:

- Explain the importance of documentation as a physician responsibility
- Discuss the consequences of appropriate and inappropriate documentation on patient and employee safety
- Observe the correct method of documentation in patient record
- Reflect on the process

Method: Large group session that gives an overview and demonstrates the documentation process and explains the right and wrong ways.

- The students can be asked to do mock audit and discuss on patient records (dummy records) with a check list .Small group sessions with peer interaction to guide the new students on the process

Assessment: Formative assessment

3. Community Orientation Module

3A. Community Orientation Module: National Health goals and policies/ health care systems / community health

The medical student should be exposed from the beginning to the community in order to get a bird's eye view of the social, demographic, environmental and cultural factors that influence health and the system of health care delivery at the primary level of health care.

FC 3.1	Demonstrate understanding of the National Health Goals and Policies	K	KH
FC 3.2	Discuss the national health scenario, demographic, socio cultural and epidemiological issues	K	KH
FC 3.3	Demonstrate understanding of the health care systems in India with reference to primary, secondary and tertiary level care	K	KH
FC 3.4	Discuss the basic principles of community health and its impact on health and disease	S	SH
FC 3.5	Demonstrate understanding of the structure and functioning of the community health center	K	KH

Objectives:

At the end of this session, the student will be able to:

1. Explain the National Health goals and policies
2. Discuss the National health scenario, demographic, socio-cultural and epidemiological issues
3. Discuss the health care systems in India with reference to primary, secondary and tertiary level care
4. Describe the basic principles of community health and its impact on Health and disease
5. Observe the structure and functioning of the community health centre
6. Reflect on the observation

Methodology

No	Sub Session	Methods	Requirements	Time
1	National Health: goals and policies	Interactive lecture on National health goals and policies	LCD projector, Flip charts, Marker pens	1 hour

2	National health scenario	Interactive lecture on National health goals and policies	LCD projector, Flip charts, Marker pens	1 hour
3	Health care systems in India	Community Health Centre visit and reflection on the experience with particular reference to: A) Levels of health care in a community setting B) Interaction with families in the community setting and the impact of health C) Functioning of the Community Health Centre and health care team Community visit followed by a discussion back in the college	Logistics for community visit	4 hours
4	Principles of community health			
5	Community health center			

Assessment: Formative: Reflection writing / discussion of the experience

3B. Community Orientation Module: Interactions with patients and families and communities.

Exposure to the community in the beginning of their profession will sensitize the students to the actual community living of people, the disease impact in the community and its impact on the patient's families and health workers.

FC 3.6	Demonstrate ability to obtain patient experiences through patient and family interactions and relate these experiences to impact of environment and diseases.	S	SH
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Objectives:

At the end of this session, the student will be able to demonstrate an understanding of:

1. The effect of family and social environment in the aetiology of diseases
2. Community beliefs and practices related to health and illnesses
3. The environmental health problems in the community
4. Patient experiences to diseases treatment-seeking practice

Methodology

No	Sub Session	Methods	Requirements	Time
1	Interaction with patients and families and communities.	<ul style="list-style-type: none">• Community Health centre visit and reflection on the experience with particular reference to:• The effect of family and social environment in the aetiology of diseases• Community beliefs and practices related to health and illnesses• The environmental health problems in the community• Patient experiences to diseases treatment-seeking practice• Community visit followed by a discussion back in the college	Logistics for community visit LCD projector, Flip charts, Marker pens	1 hour (The time for community visit is factored in in the previous session)

Assessment: Formative: Reflective writing of their observations

4. Professional Development and Ethics

4A. Professional Development and Ethics Module: Concept of Professionalism and Ethics

The students should be introduced to the concept of professionalism and ethics as an important domain in their learning and practice. They should be made aware of the code of conduct and its significance in life and career.

FC 4.1	Demonstrate understanding of the concept of Professionalism and ethics among health care professionals and discuss the consequences of unprofessional and unethical behavior	S	KH
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Objectives:

At the end of this session, the student will be able to:

1. Explain the concept of professionalism and ethics among health care professionals
2. Describe the consequences of unprofessional and unethical behavior

Methodology

No	Sub Session	Methods	Requirements	Time
1	Professionalism and Ethics – the concept	<ul style="list-style-type: none">• Interactive lecture about using case vignettes and video• Could use a drill with various scenarios depicting professional and unprofessional behaviour	LCD projector, Flip charts, Marker pens	1 hour
2	Consequences of unprofessional and unethical behavior	<ul style="list-style-type: none">• Group work using case vignettes / video• Group presentation and discussion with reference to consequences of unprofessional and unethical behavior		1 hour

Assessment: Formative assessment

4B. Professionalism and Ethics Module: White coat ceremony

FC 4.2	Demonstrate understanding that compassion, altruism, integrity, duty, responsibility and trust are the core values that defines the nature of the physician's work	K	KH
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Objective:

At the end of the session, the student is able to:

1. Appreciate the significance of White Coat Ceremony

The white coat reminds physicians of their professional duties, as prescribed by Hippocrates, to lead their lives and practice their art in uprightness and honour. The white coat is a symbol of our profession.

The White Coat Ceremony is a rite of passage, welcoming the new medical students into the medical profession. As medical students, they are bound by the same professional commitments that bind all physicians. This ceremony will join the symbol of the white coat with the virtues of altruism, responsibility, duty, honour, respect, and compassion.

Assessment: Reflections

4C Professionalism and Ethics Module 3: Professional and altruistic behaviour

FC 4.2	Demonstrate understanding that compassion, altruism, integrity duty, responsibility and trust are the core values that defines the nature of the Physician work	K	KH
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Objective

At the end of the session, the student should be able to:

- Describe Altruism
- Discuss Altruism as an important professional virtue of a physician

Assessment: Formative assessment while discussing in groups

4D Professionalism and Ethics Module: Working in a health care team

One of the major roles of the Indian Medical Graduate is that of being a member of a health care team. While the MBBS program is structured to build this competence during its course, an introduction to the concept of working in a team is essential at the beginning.

FC 4.3	Discuss the value honesty and respect during interaction with peers, seniors, faculty, other health care workers and patients	S	KH
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1	Altruism as a virtue of a Physician	<ul style="list-style-type: none"> • Guest lecture / Address by the dean or director • Case based interactive lecture 	LCD projector, Flip charts, Marker pens	1hour
2	Case discussion	<ul style="list-style-type: none"> • The students will discuss case in groups 		1 hour
FC 4.4	Discuss the significance of working in a health care team		S	KH

Objectives:

At the end of this session, the student will be able to:

1. Describe the significance of working in a health care team
2. Discuss the role of honesty ,respect and trust

Methodology

No	Sub Session	Methods	Requirements	Time
1	Working in a health care team	1. The students visit several patient care area and observe functioning of the Multidisciplinary teams, such as the emergency OPD, or	LCD projector, Flip charts, Marker pens	1 hour

		<p>OT, or labour room</p> <p>2. The students may be posted in small groups to observe and reflect with regard to the 5 important aspects of working in a team:</p> <ol style="list-style-type: none"> a. Shared goals b. Communication c. Leadership d. Role clarity e. Trust / respect <p>3. Group presentation and discussion</p>		
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3. **Assessment** : Formative assessment during group discussions / presentations

4E Professionalism and ethics Module 5: Disability competencies

As newly joined medical students, they need to recognize the importance of various deviations from majority that are happening in human life. Disability is part of human diversity. Differently abled individuals need to be understood and recognized by any stream that deals with human life.

India was one of the first major country who ratified the greatest human rights instrument of 21st Century, the United Nations Convention on the Rights of Persons with Disabilities (CRPD) and accordingly amended its disability legislation incorporating human rights approach to Rights of Persons with Disabilities (RPDA) Act, 2016. The Act mandates inducting disability content into all professional courses including medical field.

Educational Strategy

An Indian Medical Graduate is expected to have disability competence which is the skills and attributes essential to provide quality health care to patients with disabilities. It is the social responsibility of medical institutions to be empathetic towards the marginalized section. Disability competencies and suggested teaching-learning methods are provided in table 2.

Table 2. Disability Competencies under the Five Roles of the Indian Medical Graduate (IMG)

IMG Role	FC 4.5 Competencies addressed The student should be able to:	Domain	Level	Suggested TLM	Duration
Clinician	4.5.1 Describe disability as per United Nations Convention on the Rights of Persons with Disabilities while demonstrating respect for the differences and capacities of persons with disabilities as part of human diversity and humanity.	K	KH	Lecture/or panel discussion involving person with disability	1 hour
Clinician	4.5.2 Compare and contrast medical and social model of disability.	K	KH	Patient narratives in small groups followed by sharing amongst groups	
Communicator	4.5.3 Build an understanding on the disability etiquettes while addressing people with disabilities	S/A	SH	Standardized patient with disabilities in small groups followed by sharing amongst groups	1 hour
Lifelong learner	4.5.4 Demonstrate awareness of the disabilities included in the Rights of Persons with Disabilities Act, 2016.	K	KH	Case histories, incidental reports in small groups followed by sharing amongst groups	

Communi cator	4.5.5 Demonstrate the use of verbal and non-verbal empathetic communication techniques while communicating with people with disabilities	S/A	SH	Clinical patient encounter with guidance in small groups followed by sharing amongst groups	1 hour
Professio nal	4.5.6 Demonstrate a non-discriminatory behaviour towards patients or caregivers with disabilities	A	SH	Video or simulated encounters or Forum Theatre (Theatre of the Oppressed) Class room Session	
Lifelong learner	4.5.7 Have an understanding of accessible healthcare setting for patients with disabilities, including universal design	K	KH	Functioning of NGO or accessible Disability Unit	Visit or SGD-2 hours
Leader	4.5.8 Advocate social inclusion by raising awareness of the human rights of persons with disabilities.	K	KH	Self-reflection paper/blog SDL	SDL- 2 hours

Modified-from Disability-inclusive Compassionate Care: Core Competencies on Disability for Health Professions Education by Medical Humanities Group, UCMS, Delhi

4F. Professionalism and Ethics Module: Cultural competence

Cultural competence is the ability to interact respectfully with colleagues from any culture and requires critical consciousness. It is a congruent set of behaviours, attitudes, skills, policy and procedures that come together in a system, agency, or among individual professionals to enable them to work effectively in cross cultural situations. This is relevant for the medical students as they are joining MBBS in medical colleges throughout all states in India and students from outside India are also joining medical colleges in India. Therefore, the cross cultural component will help students a lot as the cultural diversity is unique and vast in the country.

FC 4.6	Demonstrate understanding and respect of cultural diversities and interact with those with different cultural values	K/A	KH
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Objectives:

At the end of this session, the student will be able to:

1. Describe components of cultural competence

Methodology

No	Sub Session	Methods	Requirements	Time
1	Components of cultural competence	<ul style="list-style-type: none"> An interactive lecture on the components 	LCD projector, Flip charts, Marker pens	1 hour

Professionalism and Ethics Module: Stress management

The first year students are challenged with many changes including the new place, peers, atmosphere, environment and a major leap in the learning styles and contents. This induces stress making them vulnerable. Hence, it is important to address the role of stress during their learning period and methods to enhance their resilience.

FC 4.7	Discuss the significance and methods of stress management and risk taking behaviour.	K	KH
FC 4.8	Understand the role of yoga and meditation in personal health	S	S

Objectives

At the end of the session, the student should be able to:

- Describe the situation that may cause stress during their learning period
- Discuss the health impact of stress
- Appreciate the various stress management techniques including yoga and meditation

- Discuss the spectrum of risk - taking behaviour, consequences and ways to manage

Case based discussion to be held in small groups on stressful situations such, academic stress, examination stress, peer pressure, family pressure, gender issues, discrimination, dealing with emotions. Various risk taking behaviours such as violence, drug abuse, rash driving, bullying etc. should be addressed.

A Yoga / Meditation demonstration by an expert followed by reflection on the experience may be done.

4 H Professional Development and Ethics Module: Time management

Good time management is essential for a Professional. Many deadlines for college work occur at the same time, and unless the student plans ahead, he/she will find it difficult to manage. Learning how to manage time will help them maintain academic performance as well as a life outside of school.

FC 4.9	Discuss the significance and appropriate ways of time management	S	SH
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Objectives:

At the end of this session, the student will be able to:

1. Describe the importance of time management
2. Prioritize their activities in order to manage time better
3. Identify and handle their own distractions and interruptions

Methodology

No	Sub Session	Methods	Requirements	Time
1	Importance of time management	<ul style="list-style-type: none"> • An interactive lecture 	LCD projector, Flip charts, Marker pens	1/2 hour
2	Prioritization	<ul style="list-style-type: none"> • Group work using the "action priority matrix" • Discussion 		1 hour

3	Distractions and Interruptions	<ul style="list-style-type: none"> • Administer the time management skills questionnaire • Students to reflect their own strengths • Ask students to work in groups and write down what they think are the main distractions / interruptions that a MBBS student will face. • Ask the groups to discuss and present the solutions to the above 		1 hour
4	Wrap up	Summarize and take general feedback about the session		5 minutes

Assessment: Formative

4I Professional Development and Ethics Module: Interpersonal relationship

The students should understand the role of interpersonal relationship while interacting with the patients, families, peers, superiors and health care personnel. They should understand the significance of these interactions and professional boundaries. They should understand and experience the role of mentoring in personal and professional growth.

FC 4.10	Demonstrate understanding of importance of interpersonal relationship while working in a health care team	S	KH
FC 4.11	Understand the role of mentoring	S	KH

Learning method:

- (1) Role plays to understand the significance of interpersonal relationship and group discussion

(2) Interactive lecture on Mentoring followed by allotment of mentors to the new batch

(3) Mentor-Mentee interaction and road ahead

4J Professionalism and Ethics: Learning

After years of formal schooling, students enter the MBBS course often without having mastered the fundamental skills of learning. When they begin their course and are propelled into a more active learner mode, understanding of these fundamentals becomes vital. Students will learn how to learn through many avenues, such as modelling, curiosity, and situational need. This session on learning is included in the Foundation Course as a way to help them understand the process learning.

FC 4.12	Demonstrate understanding of the process of group learning and group dynamics	S	KH
FC 4.13	Comprehend the learning pedagogy and its role in learning skills	S	KH
FC 4.14	Demonstrate understanding of different methods of self-directed learning	S	KH
FC 4.15	Understand collaborative learning	S	KH

Objectives:

1. To recognize the need to learn
2. To identify and maximize one's learning style
3. To describe how people learn
4. Experience collaborative and group learning
5. Discuss the methods of SDL and its application in their routine learning

Learning method

- Students are subjected learning style evaluation and asked to reflect
- Students are exposed to various methods through self -experience and role play and asked to reflect

Assessment: Nil

5 Enhancement of Language and Computer Skills:

5A Enhancement of Language and Computer Skills Module: Communication

Good communication skills are essential for an optimal doctor-patient relationship, relationship between peers/colleagues and also colleagues in a team which ultimately also contributes to improved health outcomes. Training in communication skills needs approaches which are different from that of teaching other clinical subjects.

FC5.1	Demonstrate ability to communicate with patient and families, be aware of barriers to communication and appropriate ways to respond	C	SH
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Objectives:

At the end of this session, the student will be able to:

1. Describe the basic elements of communication skills
2. Explain the importance of listening and empathy in communication
3. Explain the importance of good communication skills in medicine
4. Recognise the common barriers to communication
5. Observe patient and family interactions (Videos , Role plays)
6. Reflect on the appropriate ways to respond

Methodology

No	Sub Session	Methods	Requirements	Time
1	Basic communication skills	• Lectures (PPT), role plays, group discussions, brainstorming	LCD projector, Flip charts, Marker pens	3 hours
2	Listening skills			
3	Importance of empathy in communication skills			
4	Importance of good communication in medicine			

5	Observe patient and family interactions	<ul style="list-style-type: none"> • Video demo / Role play of patient and family interaction • Ask students to reflect on appropriate and inappropriate responses 	Video	
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Assessment: Formative during group discussions

5B Enhancement Skills Module 8: Local Language skills

The local language skills training will be conducted as per the felt need and may continue beyond the Foundation Course.

FC 5.2	Demonstrate use of local language in patient and peer interactions	C	SH
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Sessions will be organised in small groups and rotated between enhancement skills

5C Enhancement Skills Module 8: English Language skills

The English language skills training will be conducted as per the felt need and may continue beyond the Foundation Course.

FC 5.3	Demonstrate ability to communicate and learn in English	C	SH
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Sessions will be organised in small groups and rotated between enhancement skills

Enhancement of Language and computer skills Module: Basic computer skills

The students should be competent in the use of ICT in teaching and learning. The students should be introduced to the basic use of word and power point, familiar with search engines, in performing a literature search and accessing online resources.

FC 5.4	Demonstrate basic computer skills	S	SH
FC 5.5	Demonstrate ability for accessing online resources	S	SH

The students are posted to the computer / Active learning centre for the training and it will continue as per need of the students beyond Foundation Course

6 Sports and extracurricular activities

Should be for a mandatory 4 hours per week and extra-curricular activities 2 hours per week, subject to a maximum of 22 hours

1. Further Reading link

<https://www.mciindia.org/CMS/wp-content/uploads/2019/01/UG-Curriculum-Vol-I.pdf>

<https://www.mciindia.org/CMS/wp-content/uploads/2019/01/UG-Curriculum-Vol-II.pdf>

<https://www.mciindia.org/CMS/wp-content/uploads/2019/01/UG-Curriculum-Vol-III.pdf>

https://www.mciindia.org/CMS/wp-content/uploads/2019/01/AETCOM_book.pdf

Course Content

Human Anatomy

First M.B.B.S. (From August 2019)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page no.41-90)

Teaching hours

Lectures(hours)-220

Self directed learning (hours)- 40

Small group teachings/tutorials/Integrated teaching/Practicals(hours)-415

Total(hours) -675

Early clinical exposure(hours)- 90 to be divided equally in all three subjects .

Competency No.	Topics & Subtopics
1	Anatomical Terminology
AN1.1	Anatomical position planes, movement in our body
AN1.2	Composition of bone & bone marrow
2	General features of bones & Joints
AN2.1	Parts, blood and nerve supply of long bone
AN2.2	Laws of ossification
AN2.3	Features of sesamoid bone
AN2.4	Cartilage
AN2.5	Types of Joints & examples
AN2.6	Nerve supply of joints & Hilton's law
3	General features of Muscle
AN3.1	Classification of muscles
AN3.2	Parts of skeletal muscle
AN3.3	Shunt and spurt muscles
4	General features of skin and fascia
AN4.1	Types of skin & dermatomes in body
AN4.2	Structure & function of skin

AN4.3	Superficial fascia
AN4.4	Deep fascia
AN4.5	Principles of skin incisions
5	General features of the cardiovascular system
AN5.1	Blood Lymph & vascular system
AN5.2	Pulmonary and systemic circulation
AN5.3	Arteries & Veins
AN5.4	Functional Classification of Vessels
AN5.5	Portal System
AN5.6	Anastomoses
AN5.7	Meta-arterioles, sphincters & AV anastomoses
AN5.8	Thrombosis, infarction & aneurysm
6	General Features of lymphatic system
AN6.1	Components & functions of Lymphatic system
AN6.2	Lymph capillaries & Circulation
AN6.3	Lymphoedema & tumor spread
7	Introduction to the nervous system
AN7.1	General plan & components of CNS, ANS, PNS.
AN7.2	Components of nervous tissue & functions
AN7.3	Classifications & parts of neuron
AN7.4	Typical spinal nerve
AN7.5	Principles of innervation of muscles
AN7.6	Loss of innervation of a muscle and applied anatomy
AN7.7	Synapse –types
AN7.8	Ganglia

8	Features of individual bones (Upper Limb)
AN8.1	Bones of upper limb
AN8.2	Joints formed by bones of upper limb
AN8.3	Peculiarities of clavicle
AN8.4	Muscle attachments of bones
AN8.5	Articulated hand
AN8.6	Scaphoid fracture
9	Pectoral region
AN9.1	Pectoralis major & pectoralis minor
AN9.2	Breast
AN9.3	Development of breast
10	Axilla, Shoulder and Scapular region
AN10.1	Boundaries & Contents of axilla
AN10.2	Axillary artery & Vein
AN10.3	Brachial plexus
AN10.4	Axillary lymphnodes
AN10.5	Variation in brachial plexus
AN10.6	Erb's Palsy & klumpke's paralysis
AN10.7	Enlarged axillary lymph nodes
AN10.8	Trapezius and latissimus dorsi
AN10.9	Anastomosis around the scapula & triangle of auscultation
AN10.10	Deltoid and rotator cuff muscles
AN10.11	Serratus anterior
AN10.12	Shoulder joint
AN10.13	Axillary nerve injury during IM injections

11	Arm & Cubital fossa
AN11.1	Biceps & triceps brachii
AN11.2	Important nerves and vessels in arm
AN11.3	Venipuncture of cubital veins
AN11.4	Saturday night palsy
AN11.5	Cubital fossa
AN11.6	Elbow joint anastomosis
12	Forearm & hand
AN12.1	Muscle groups of ventral forearm
AN12.2	Nerves & vessels of forearm
AN12.3	Flexor retinaculum
AN12.4	Carpal tunnel syndrome
AN12.5	Muscles of hand. movements of thumb
AN12.6	Movements of thumb
AN12.7	Vessels & nerves in hand
AN12.8	Claw hand
AN12.9	Fibrous flexor sheaths, synovial sheaths
AN12.10	Infection of Fascial spaces of palm
AN12.11	Muscle groups of dorsal forearm
AN12.12	Nerves and vessels of back of forearm
AN12.13	Wrist drop
AN12.14	Extensor retinaculum
AN12.15	Extensor expansion formation
13	General Features, Joints, radiographs & surface marking
AN13.1	Fascia, compartments, veins & lymphatic of upper limbs
AN13.2	Dermatomes of upper limbs
AN13.3	Joints of upper limb Elbow, Radio-ulnar, wrist & first carpometacarpal joint)

AN13.4	Joints of upper limb Sternoclavicular, Acromioclavicular, Carpometacarpal joints & Metacarpophalangeal joints
AN13.5	Radiographs of UL
AN13.6	Bony landmarks of UL
AN13.7	Surface projection of vessels, testing of muscle
AN13.8	Development of UL
14	Features of individual bones (Lower Limb)
AN14.1	Features of given bones
AN14.2	Joints formed by given bone
AN14.3	Importance of ossification of femur & tibia
AN14.4	Articulated foot
15	Front & Medial side of thigh
AN15.1	Nerves & vessels of thigh
AN15.2	Major Muscles
AN15.3	Femoral triangle
AN15.4	Psoas abscess & Femoral hernia
AN15.5	Adductor canal
16	Gluteal region & back of thigh
AN16.1	Nerves and vessels
AN16.2	Sciatic nerve injury
AN16.3	Trendelenburg sign
AN16.4	Hamstrings muscle
AN16.5	Nerve & vessels of back of thigh
AN16.6	Popliteal fossa

17	Hip Joint
AN17.1	Details of hip joint
AN17.2	Fracture neck of femur
AN17.3	Dislocation
18	Knee joint, Anterolateral compartment of leg & dorsum of foot
AN18.1	Major muscles
AN18.2	Nerves & vessels
AN18.3	Foot drop
AN18.4	Knee joint
AN18.5	Locking and unlocking
AN18.6	Knee joint injuries with its applied anatomy
AN18.7	Osteoarthritis
19	Back of leg & sole
AN19.1	Major muscles
AN19.2	Nerves & Vessels
AN19.3	Peripheral heart
AN19.4	Rupture of calcaneal tendon
AN19.5	Arches of foot
AN19.6	Flat & club foot
AN19.7	Metatarsalgia & plantar fasciitis
20	General Features, joints, radiographs & surface marking
AN20.1	Tibiofibular & ankle joint
AN20.2	Subtalar and transverse tarsal joints
AN20.3	Fascia, venous drainage, lymphatic Retinacula & dermatomes of Lower limb

AN20.4	Enlarged inguinal lymph nodes
AN20.5	Varicose veins & deep vein thrombosis
AN20.6	Radiographs of lower limb
AN20.7	Bony landmarks
AN20.8	Vessels of lower limb palpation
AN20.9	Surface projection nerves & veins
AN20.10	Development of lower limb
21	Thoracic cage
AN21.1	Sternum, Typical Rib, first Rib & typical thoracic vertebra
AN21.2	A typical Ribs & vertebra
AN21.3	Thoracic inlet, cavity and outlet
AN21.4	Intercostal muscles
AN21.5	Typical intercostal nerve
AN21.6	Intercostal vessels
AN21.7	A typical intercostal nerve subcostal artery, superior Artery
AN21.8	Joints of thorax
AN21.9	Mechanics of respiration
AN21.10	Costochondral & interchondral joints
AN21.11	Mediastinum
22	Heart & Pericardium
AN22.1	Pericardium
AN22.2	Each chamber of heart
AN22.3	Coronary arteries
AN22.4	Ischemic heart disease
AN22.5	Coronary sinus
AN22.6	Fibrous skeleton of heart
AN22.7	Conducting system of heart

23	Mediastinum
AN23.1	Oesophagus
AN23.2	Thoracic duct
AN23.3	Superior venacava , Azygos, hemiazygos & accessory hemiazygos veins
AN23.4	Arch of aorta & descending aorta
AN23.5	Thoracic sympathetic chain
AN23.6	Splanchnic nerves
AN23.7	Lymphatic duct
24	Lungs & Trachea
AN24.1	Pleura, Pleural, recess & applied anatomy
AN24.2	Root of lung & bronchial tree
AN24.3	Broncho pulmonary segment
AN24.4	Phrenic nerve
AN24.5	Blood Supply nerve supply Lymphatic drainage of Lungs
AN24.6	Trachea
25	Thorax
AN25.1	Draw & label microanatomy of trachea and lung
AN25.2	Development of pleura, lung & heart
AN25.3	Fetal circulation
AN25.4	Atrial septal defect, Ventricular septal defect, Fallot's tetralogy & Tracheo-oesophageal fistula
AN25.5	Transposition of great vessels, Dextrocardia, Patent ductus arteriosus & Coarctation of aorta
AN25.6	Development of aortic arch arteries, SVC, IVC & coronary Sinus.
AN25.7	Chest Radiograph AP & Lateral view
AN25.8	Barium swallow
AN25.9	Surface projection of pleura heart lungs
26	Skull osteology

AN26.1	Anatomy of skull bones
AN26.2	Skull Norma
AN26.3	Interior of skull
AN26.4	Mandible
AN26.5	Typical and Atypical cervical vertebrae (Atlas & axis)
AN26.6	Bones that ossify in membrane
AN26.7	7th cervical vertebra
27	Scalp
AN27.1	Scalp, Blood supply, nerve supply, Layers & Surgical importance
AN27.2	Emmissary veins
28	Face & parotid region
AN28.1	Facial muscles
AN28.2	Nerve supply of facial muscles
AN28.3	Facial vessels
AN28.4	Facial Nerve
AN28.5	Cervical Lymph node
AN28.6	Superficial muscles of face
AN28.7	Facial Nerve Palsy
AN28.8	Deep facial vein
AN28.9	Parotid gland
AN28.10	Frey's syndrome Can be covered with 28.3
29	Posterior triangle of neck
AN29.1	Sternocleidomastoid
AN29.2	Erb's & Klumpke's palsy
AN29.3	wry neck
AN29.4	Omohyoid, scalenus & levator scapulae

30	Cranial cavity
AN30.1	Cranial fossa
AN30.2	Foramina
AN30.3	Dural venous sinuses
AN30.4	Cavernous sinuses
AN30.5	Visual Pathways
31	Orbit
AN31.1	Extra ocular muscles
AN31.2	Nerves and vessels in the orbit
AN31.3	Horner's syndrome
AN31.4	Lacrimal apparatus
AN31.5	3rd, 4th & 6th Cranial Nerves
32	Anterior Triangle
AN32.1	Anterior triangle
AN32.2	Carotid, muscular, digastric and submental triangles
33	Temporal and Infratemporal regions
AN33.1	Temporal & infratemporal fossae
AN33.2	Muscle of mastication
AN33.3	Temporomandibular joint
AN33.4	Pterygoid venous plexus
AN33.5	Dislocation with Temporomandibular joint
34	Submandibular region
AN34.1	Submandibular Salivary Gland & Ganglion
AN34.2	Submandibular stones
35	Deep Structures in the neck
AN35.1	Deep Cervical Fascia

AN35.2	Thyroid gland
AN35.3	Subclavian Artery
AN35.4	internal jugular & Brachiocephalic vein
AN35.5	Cervical lymph nodes
AN35.6	Cervical Sympathetic chain
AN35.7	IX, X, XI, & XII, Cranial nerve
AN35.8	Thyroid Swellings
AN35.9	Clinical features of compression by Cervical rib
AN35.10	Fascial Spaces of neck
36	Mouth, pharynx & palate
AN36.1	1) Soft palate 2) Palatine tonsil
AN36.2	Waldeyer's Lymphatic Ring
AN36.3	Pyriform fossa & Applied
AN36.4	Tonsils & Adenoids with applied anatomy
AN36.5	Clinical significance of Killian's dehiscence
37	Cavity of Nose
AN37.1	Nasal septum, lateral wall of Nose,
AN37.2	Paranasal sinuses
AN37.3	Maxillary sinus –Applied Anatomy
38	Larynx
AN38.1	Intrinsic & Extrinsic muscles of larynx
AN38.2	Anatomical aspects of laryngitis
AN38.3	Recurrent laryngeal nerve Injury

39	Tongue
AN39.1	Tongue
AN39.2	XII Cranial hypoglossal Applied Anatomy
40	Organs of hearing and equilibrium
AN40.1	External ear
AN40.2	Middle ear
AN40.3	Internal ear
AN40.4	Applied Anatomy otitis externa / media
AN40.5	Myringotomy
41	Eyeball
AN41.1	Eyeball
AN41.2	Eyeball applied cataract, glaucoma & central retinal artery occlusion
AN41.3	Intraocular muscles
42	Back region
AN42.1	Vertebral canal
AN42.2	Sub occipital triangle
AN42.3	Semi spinalis capitis & Splenius Capitis
43	Head & neck joints, Histology, Development , Radiography & surface marking
AN43.1	Movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint
AN43.2	Pituitary , Thyroid, parathyroid & Salivary gland tongue, Epiglottis, Cornea, Retina
AN43.3	Microanatomy of olfactory epithelium, Eyelid, lip. Optic nerve, pineal gland
AN43.4	Development and anomalies of face, palate, tongue, brachial apparatus pituitary gland, Thyroid, Eye
AN43.5	Muscles of facial Expression, extraocular muscles palpation of carotid, superficial temporal, facial arteries, location of internal jugular & Ext. jugular veins. hyoid bone, thyroid cartilage, cricoid cartilage

AN43.6	Surface anatomy thyroid, parotid gland common carotid artery, IJV, SCV, EJV, facial artery.
AN43.7	X-Ray skull AP & Lat. view
AN43.8	Carotid & vertebral Angiogram
AN43.9	Structures in carotid & vertebral angiogram
44	Anterior abdominal wall
AN44.1	Planes, Quadrants of abdomen.
AN44.2	Fascia, nerves & Blood supply of ant. Abdominal wall.
AN44.3	Rectus sheath
AN44.4	Inguinal canal
AN44.5	Inguinal Hernia
AN44.6	Muscles of Ant. Abdominal wall
AN44.7	Common Abdominal Incisions
45	Posterior abdominal wall
AN45.1	Thoracolumbar fascia
AN45.2	Lumbar plexus
AN45.3	Back muscles
46	Male external genitalia
AN46.1	Testis & its descent
AN46.2	Epididymis
AN46.3	Penis
AN46.4	Varicocele
AN46.5	Phimosis & circumcision
47	Abdominal cavity
AN47.1	Lesser & Greater sac
AN47.2	Peritoneal folds & pouches
AN47.3	Ascites & peritonitis
AN47.4	Sub phrenic Abscess

AN47.5	Major Viscera
AN47.6	Accessory spleen, Kehr's sign, Vagotomy, Liver biopsy
AN47.7	Calot's triangle
AN47.8	Portal vein, Inferior Vena Cava, Renal vein
AN47.9	Abdominal aorta, coeliac trunk
AN47.10	Portosystemic Anastomosis
AN47.11	Portal Hypertension
AN47.12	Nerve plexus post. Abdominal wall.
AN47.13	Thoraco abdominal diaphragm
AN47.14	Diaphragmatic Hernia
48	Pelvic wall and viscera
AN48.1	Muscles of pelvic diaphragm
AN48.2	Male & female pelvic viscera
AN48.3	Internal iliac Artery
AN48.4	Sacral plexus
AN48.5	BPH, Uterine anomalies anal fistula
AN48.6	Automatic bladder
AN48.7	BPH & prostate cancer
AN48.8	P/V & P/R examination
49	Perineum
AN49.1	Sup. & deep perineal pouch
AN49.2	Perineal body
AN49.3	Perineal Membrane in male & female
AN49.4	Ischiorectal fossa
AN49.5	Perineal tear, episiotomy perineal abscess & Anal fissure
50	Vertebral Column
AN50.1	Curvatures of vertebral Column

AN50.2	Intervertebral joint & sacroiliac joint, Pubic symphysis
AN50.3	Lumbar puncture
AN50.4	Scoliosis, lordosis, PID, Spina bifida, Spondylolisthesis
51	Sectional Anatomy
AN51.1	Cross section at T8, T10, & L1
AN51.2	Midsagittal section male & female pelvis
52	Histology & Embryology
AN52.1	GIT
AN52.2	Excretory system
AN52.3	Cardiooesophageal junction, Corpus luteum
AN52.4	Development of anterior abdominal wall
AN52.5	Congenital anomalies of Diaphragm
AN52.6	Congenital anomalies of foregut midgut hindgut
AN52.7	Urinary System Development
AN52.8	Reproductive system Development
53	Osteology
AN53.1	Bone – Identification, anatomical position, articulations & attachments
AN53.2	Bony pelvis
AN53.3	Bones of abdominopelvic region
AN53.4	Clinical importance of bones of abdominopelvic region
54	Radio diagnosis
AN54.1	KUB plain X Ray abdomen
AN54.2	(contrast X ray Barium swallow, Barium meal, Barium enema,) Cholecystography, intravenous pyelography & Hysterosalpingography
AN54.3	ERCP, CT abdomen, MRI Arteriography in radio diagnosis of abdomen

55	Surface marking
AN55.1	Surface projections of regions and planes of abdomen , superficial inguinal ring, deep inguinal ring, Mc Burney's point, renal angle & murphy's point
AN55.2	Surface marking of stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery
56	Meninges & CSF
AN56.1	Various layers of meninges with its extent & modifications
AN56.2	Formation and circulation of CSF with its applied anatomy
57	Spinal Cord
AN57.1	External features of spinal cord
AN57.2	Extent of spinal cord in child & adult with its clinical implication
AN57.3	Transverse section of spinal cord at mid-cervical & midthoracic level
AN57.4	Ascending & descending tracts at mid thoracic level of spinal cord
AN57.5	Describe anatomical basis of syringomyelia
58	Medulla Oblongata
AN58.1	External features of medulla oblongata
AN58.2	Transverse section of medulla oblongata at the level of 1) pyramidal decussation 2) sensory decussation 3) ION
AN58.3	Cranial nerve nuclei in medulla oblongata with their functional group
AN58.4	Anatomical basis & effects of medial & lateral medullary Syndrome
59	Pons
AN59.1	External features of pons
AN59.2	Transverse section of pons at the upper and lower level
AN59.3	Cranial nerve nuclei in pons with their functional group
60	Cerebellum
AN60.1	External & internal features of cerebellum
AN60.2	Connections of cerebellar cortex and intracerebellar nuclei
AN60.3	Anatomical basis of cerebellar dysfunction

61	Midbrain
AN61.1	External & internal features of midbrain
AN61.2	Internal features of midbrain at the level of superior & inferior colliculus
AN61.3	Anatomical basis & effects of benedikt's and weber's syndrome
62	Cranial nerve nuclei & cerebral hemispheres
AN62.1	Cranial nerve nuclei with its functional component
AN62.2	Surfaces, sulci, gyri, poles & functional areas of cerebral hemisphere
AN62.3	White matter of cerebrum
AN62.4	Parts & major connections of basal ganglia & limbic lobe
AN62.5	Boundaries, parts, gross relation, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus
AN62.6	Formation, branches & major areas of distribution of circle of willis
63	Ventricular System
AN63.1	Parts, boundaries & features of 3 rd , 4 th & lateral ventricle
AN63.2	Describe anatomical basis of congenital hydrocephalus
64	Histology & Embryology
AN64.1	Micro anatomical features of spinal cord, cerebellum & cerebrum
AN64.2	Development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum
AN64.3	Various types of open neural tube defects with its embryological basis
65	Epithelium histology
AN65.1	Types of epithelium under the microscope & describe the various types that correlate to its function
AN65.2	Ultrastructure of epithelium
66	Connective tissue histology
AN66.1	Various types of connective tissue with functional correlation

AN66.2	Ultrastructure of connective tissue
67	Muscle histology
AN67.1	Various types of muscle under the microscope
AN67.2	Classification of various types of muscle and describe the structure-function correlation of the same
AN67.3	Ultrastructure of muscular tissue
	Nervous tissue histology
AN68.1	Multipolar & unipolar neuron, ganglia, peripheral nerve
AN68.2	Structure-function correlation of neuron
AN68.3	Ultrastructure of nervous tissue
69	Blood Vessels
AN69.1	Elastic & muscular blood vessels, capillaries under the microscope
AN69.2	Various types and structure-function correlation of blood vessel
AN69.3	Describe the ultrastructure of blood vessels
70	Glands & Lymphoid tissue
AN70.1	Various exocrine gland under the microscope & distinguish between serous, mucous and mixed acini
AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph, node, spleen, thymus, tonsil and correlate the structure with function
71	Bone & Cartilage
AN71.1	Bones under the microscope classify various types & describe the structure – Function correlation of the same
AN71.2	Structure of cartilage under the microscope & describe various types and structure-function correlation of the same
	Integumentary system
AN72.3	Skin and its appendages under the microscope and correlate the structure with function
	Chromosomes
AN73.1	Structure of chromosomes with classification
AN73.2	Technique of karyotyping with its applications
AN73.3	Lyon's hypothesis

	Patterns of inheritance
AN74.1	Various modes of inheritance with examples
AN74.2	Pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance
AN74.3	Multifactorial inheritance with examples
AN74.4	Genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & sickle cell anaemia
75	Principle of Genetics, Chromosomal Aberrations & Clinical Genetics
AN75.1	Structural and numerical chromosomal aberrations
AN75.2	Mosaics and chimeras with example
AN75.3	Genetic basis & clinical features of prader willi syndrome, Edward syndrome & patau syndrome
AN75.4	Genetic basis of variation : polymorphism and mutation
AN75.5	Principles of genetic counselling
76	Introduction to embryology
AN76.1	Stages of human life
AN76.2	Phylogeny, ontogeny, trimester, viability
77	Gametogenesis and fertilization
AN77.1	Uterine changes occurring during the menstrual cycle
AN77.2	Synchrony between the ovarian and menstrual cycles
AN77.3	Spermatogenesis and oogenesis along with diagrams
AN77.4	Stages and consequences of fertilization
AN77.5	Anatomical principles underlying contraception
AN77.6	Teratogenic influences, Fertility & sterility, surrogate motherhood, social significance of "sex-ratio".
78	Second week of development
AN78.1	Cleavage and formation of blastocyst
AN78.2	Development of trophoblast
AN78.3	Process of implantation & common abnormal sites of implantation
AN78.4	Formation of extra –embryonic mesoderm and coelom, bilaminar disc and prochordal plate

AN78.5	Abortion; decidual reaction, pregnancy test
79	3rd to 8th week of development
AN79.1	Formation & fate of the primitive streak
AN79.2	Development of trophoblast , fate of Notochord
AN79.3	Process of neurulation
AN79.4	Describe the development of somites and intra-embryonic coelom
AN79.5	Embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects
AN79.6	Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein
80	Fetal membranes
AN80.1	Formation , functions & fate of chorion; amnion; yolk sac; allantois & decidua
AN80.2	Formation & structure of umbilical cord
AN80.3	Formation of placenta, its physiological functions, foetomaternal circulation & placental barrier
AN80.4	Embryological basis of twinning in monozygotic & dizygotic twins
AN80.5	Role of placental hormones in uterine growth & parturition
AN80.6	Embryological basis of estimation of fetal age.
AN80.7	Various types of umbilical cord attachments
81	Prenatal Diagnosis
AN81.1	Various methods of prenatal diagnosis
AN81.2	Indications, process and disadvantages of amniocentesis
AN81.3	Indications, process and disadvantages of chorion villus biopsy
82	Ethics in anatomy
AN82.1	Respect and follow the corrected procedure when handling cadavers and other biologic tissue

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: First MBBS Subject: Anatomy

Paper	Section	Topics
I	A	MCQs on all topics of the paper I
	B & C	Superior extremity
		General embryology
		Genetics
		Head , neck , face
		Central nervous system
		One short answer question on AETCOM module 1.1 & 1.5
		Scenario based / application questions can be on any topic of the paper I
		For long answer question and scenario based / application questions , region will not be repeated
II	A	MCQs on all topics of the paper II
	B & C	General Anatomy
		General histology
		Gross Anatomy of Abdomen and Pelvis
		Gross Anatomy of Inferior extremity
		Thorax
	Scenario based / application questions can be on any topic of the paper II	
		For long answer question and scenario based / application questions , region will not be repeated

Internal Assessment

Anatomy

Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards

Sr. No	I-Exam (December)			II-Exam (March)		
	Theory	Practical (Including 05 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 05 Marks for Journal & Log Book	Total Marks
1	100	50	150	100	50	150

Sr. No	Preliminary Examinations			Remedial Examination (after University Examination)		
	III-Exam (July)					
	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
1	200	100	300	200	100	300

1. There will be 3 internal assessment examinations in the academic year. The structure of the internal assessment theory examinations should be similar to the structure of University examination.
2. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of

internal assessment marks to the University. (It is mandatory for the students to appear for all the three internal assessment examination.)

3. First internal assessment examination will be held in December, second internal assessment examination will be held in March and third internal assessment examination will be held in July.
4. Internal assessment marks for theory and practical will be converted to out of 40. Internal assessment marks, after conversion, should be submitted to university by 7th of August.
5. The student who scores 35% marks separately in theory & practical internal assessment examinations is eligible to appear for university examinations
6. It is mandatory to secure at least 50% marks of the total marks (combined in theory & practical) assigned for internal assessment in the particular subject in order to be declared successful at the final University Examination of that subject.
7. **Remedial internal assessment examination for students:**
 - a. Applicable for students who got individual theory or practical marks between 35% and 50% but did not score aggregate 50% (combined in theory and practical) for the subject: Remedial internal assessment should be organized by the college immediately after the completion of university examination of the affected students. The revised internal assessment marks (converted out of 40 each) of such students should be sent to the University within maximum of 15 days after university examination of these students. Such a remedial examination shall be conducted by allocating only three days per subject without any gap (two days for theory and one day for practical).
8. The internal assessment marks of the remedial examination alone shall be considered.

9. Conversion Formula for calculation of marks in internal assessment examinations

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40)	Minimum marks to be obtained to declare the final University examination result (Out of 80 Combined in theory and practical)
Theory	100	100	200	400	$\frac{\text{Total marks}}{10}$	14	40
Practical	50	50	100	200	$\frac{\text{Total marks}}{5}$	14	

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

10. The result of the final University examination for students, who fail to secure 50% marks of the total marks (40 marks after conversion - combined in theory & practical) in internal assessment, even after remedial examination, shall not be declared by University and his / her performance in the final examination shall be annulled.

11.

a) Non eligible students having less than 35% internal assessment marks AND students who fail to secure 50 % combined in theory and practical in remedial examination will have to appear for a remedial internal assessment examination which will be held before supplementary examination. Eligible students (minimum 35 % separately in theory and practical) will be permitted to appear for supplementary examination, but students have to undergo remedial examination after university supplementary examination & score aggregate 50% marks for results to be

declared (Same as described in point 8). The result of the supplementary University examination for students, who fail to secure 50% marks of the total marks (40 marks after conversion-combined in theory & practical) in internal assessment, even after remedial measures, shall not be declared by University and his / her performance in the supplementary examination shall be annulled.

b) Students who score less than 35% separately in theory & practical AND the students who were unable to score aggregate 50% in remedial measures after supplementary examination will have to appear for III internal assessment examination (Preliminary examination) along with next regular batch of students & marks obtained in this examination will be used to calculate internal assessment marks. Further rules for these students will remain similar to the students admitted in next regular batch.

13) Supplementary University examination shall be held within 45 – 90 days of declaration of results of first professional University examinations.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : First MBBS <i>(applicable w.e.f. June 2020 & onwards examinations)</i>	2. Subject Code : Appendix - a
3. Subject (PSP) : Anatomy (TT) :	
4. Paper : I/II 5. Total Marks : 100 6. Total Time : 3 Hrs.	
7. Web Pattern : [] 8. Web Skeleton : [] 9. Web Syllabus : [] 10. Web Old QP : []	

SECTION "A" MCQ

Instructions:

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (**4 MCO Should be CASE based**) (20x1=20)

a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.
- 7) Use a common answerbook for all sections.

SECTION "B" (40 Marks)

2. Short Answer Questions (Any Four out of Five & two SAQs will be **Clinical Application Based**) (4 x 5 = 20)

a) b) c) d) e)

3. Long Answer Questions (Any Two out of Three) (2 x 10 = 20)

a) b) c)

SECTION "C" (40 Marks)

Short answer questions (Any Four out of Five)
(**1 Should be on AETCOM module 1.1, 1.5 in Paper I & 2 SAQ will be clinical application based**) (4 x 5 = 20)

a) b) c) d) e)

Long Answer Questions (Any Two out of Three) (2 x 10 = 20)

5. a) b) c)

RECOMMENDED BOOKS

- 1) Gray's Anatomy
- 2) Sahana's Human Anatomy
- 3) Chourai's Human Anatomy 3 volumes
- 4) Cunningham's manual of Practical Anatomy
- 5) Regional Anatomy by R. J. Last
- 6) Human Histology by Inderbir Singh
- 7) Atlas of Human Histology- DIFORE
- 8) Surgical Anatomy- McGregor
- 9) Histology- by Ham,
- 10) Human Embryology – Inderbir Singh,
- 11) Medical Embryology – Langman,
- 12) Surface Anatomy & Radiology – Halim Das,
- 13) General Anatomy by – Chowrisia
- 14) Text book of Neuroanatomy – Inderbir Singh
- 15) Central Nervous System – Podar Bhagat
- 16) Clinical anatomy for medical students – Richard Snell
- 17) J.S.P. Lumbley at all – M.C.Q's in Anatomy
- 18) Text Book of General Anatomy – V. Subhadra Devi
- 19) Dissection Manual with Regions & Applied Anatomy, Lower Extremity
Abdomen Pelvis and Perineum Vol 2 -1 Edition 2018 - Dr. Mercy Navis
- 20) Dissection Manual with Regions & Applied Anatomy, Head , Neck
& Brain. Mercy Navis
- 21) Clinical Anatomy by-Neeta V Kulkarni.

Course Content

Physiology

First M.B.B.S. (From August 2019)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page no.91-118)

Teaching hours

Lectures(hours)-160

Self directed learning (hours)-

25

Small group teachings/tutorials/Integrated teaching/Practicals(hours)-310

Total(hours) -495

Early clinical exposure(hours)- 90 to be divided equally in all three subjects .

Competency No.	Topics & subtopics
1	General Physiology
PY. 1.1	Structure and Functions of a Mammalian Cell
PY. 1.2	Principles of Homeostasis
PY. 1.3	Intercellular communication
PY. 1.4	Apoptosis – Programmed cell death
PY. 1.5	Transport mechanisms across cell membranes
PY. 1.6	Fluid compartment of the body, its ionic composition & measurements
PY. 1.7	Concept of pH & Buffer systems in the body
PY. 1.8	Molecular basis of resting membrane potential and action potential in excitable tissue
PY. 1.9	Methods used to demonstrate the functions of the cells and its products, its communication and their applications in Clinical care and research.
2	Topic: Hematology
PY. 2.1	Composition & functions of blood components
PY. 2.2	Original, forms, variations and functions of plasma proteins
PY. 2.3	Synthesis and functions of Hemoglobin & explain its breakdown. Describe variants of hemoglobin
PY. 2.4	RBC formation (erythropoiesis & its regulation) and its functions
PY. 2.5	Types of anaemias & Jaundice
PY. 2.6	WBC formation (granulopoiesis) & its regulation
PY. 2.7	Formation of platelets, functions & variations

PY. 2.8	Physiological basis of hemostasis and anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)
PY. 2.9	Different blood groups and clinical importance of blood grouping, blood banking and transfusion
PY. 2.10	Types of immunity , development of immunity and its regulation
PY. 2.11	Estimation Hb, RBC, TLC, RBC indices, DLC, Blood group, BT/CT
PY. 2.12	Tests for ESR, Osmotic fragility, Hematocrit , findings and interpretation of test results etc.
PY. 2.13	Steps for reticulocyte and platelet count
3	Nerve and Muscle Physiology
PY. 3.1	Structure and functions of a neuron and neuroglia; Nerve Growth Factor & other growth factors/cytokines
PY. 3.2	Types, functions & properties of nerve fibers
PY. 3.3	Degeneration and regeneration in Peripheral nerves
PY. 3.4	Structure neuro-muscular junction and transmission of impulses
PY. 3.5	Action of neuro-muscular blocking agents
PY. 3.6	Pathophysiology of Myasthenia gravis
PY. 3.7	Types of muscle fibres and their structure
PY. 3.8	Action potential and its properties in different muscle types (skeletal & smooth)
PY. 3.9	Molecular basis of muscle contraction in skeletal and in smooth muscles
PY. 3.10	Mode of muscle contraction (isometric and isotonic)
PY. 3.11	Energy source and muscle metabolism
PY. 3.12	Gradation of muscular activity
PY. 3.13	Muscular dystrophy: myopathies
PY. 3.14	Ergography
PY. 3.15	Effect of mild, moderate and severe exercise and changes in cardiorespiratory parameters
PY. 3.16	Harvard Step test and impact on induced physiologic parameters in a simulated environment
PY. 3.17	Strength-duration curve
PY. 3.18	Computer assisted learning (i) amphibian nerve – muscle experiments (ii) amphibian cardiac experiments
4	Gastro-intestinal Physiology

PY. 4.1	Structure and functions of digestive system
PY. 4.2	Composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal, juices and bile secretion
PY. 4.3	GIT movements, regulation and functions ,defecation reflex. Role of dietary fibre.
PY. 4.4	Physiology of digestion and absorption of nutrients
PY. 4.5	Source of GIT hormones, their regulation and functions
PY. 4.6	Gut-Brain Axis
PY. 4.7	Structure and functions of liver and gall bladder
PY. 4.8	Gastric function tests, pancreatic exocrine function test & liver function tests
PY. 4.9	Physiology aspects of; peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhea , constipation, Adynamic ileus, Hirschsprung's disease
PY. 4.10	Clinical examination of the abdomen in a normal volunteer or simulated environment
5	Cardiovascular Physiology (CVS)
PY. 5.1	Functional anatomy of heart including chambers sounds; and Pacemaker tissue and conducting system.
PY. 5.2	Properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions
PY. 5.3	Events occurring during the cardiac cycle
PY. 5.4	Generation, conduction of cardiac impulse
PY. 5.5	Physiology of electrocardiogram (E.C.G.), its applications and the cardiac axis
PY. 5.6	Abnormal ECG, arrhythmias, heart block and myocardial infarction.
PY. 5.7	Haemodynamics of circulatory system
PY. 5.8	Local and systemic cardiovascular regulatory mechanisms
PY. 5.9	Factors affecting heart rate, regulation of cardiac output & blood pressure
PY. 5.10	Regional circulation including microcirculation, lymphatic, coronary, cerebral, capillary, Skin, foetal, pulmonary and splanchnic circulation
PY. 5.11	Patho-physiology of shock, syncope and heart failure
PY. 5.12	Blood pressure & pulse recording at rest and in different grades of exercise and postures in a volunteer or simulated environment
PY. 5.13	Record and interpret normal ECG in a volunteer or simulated environment

PY. 5.14	Cardiovascular autonomic function tests in a volunteer or simulated environment
PY. 5.15	Clinical examination of the cardiovascular system in a normal volunteer or simulated environment
PY. 5.16	Recording Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment
6	Respiratory Physiology
PY. 6.1	Functional anatomy of respiratory tract
PY. 6.2	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
PY. 6.3	Transport of respiratory gases: Oxygen and Carbon dioxide
	Regulation of respiration -- Neural & chemical
PY. 6.4	Physiology of high altitude deep sea diving
PY. 6.5	Principles of artificial respiration oxygen therapy, acclimatization and decompression sickness
PY. 6.6	Pathophysiology of dyspnea, hypoxia, cyanosis asphyxia; drowning, periodic breathing
PY. 6.7	Lung function tests & their clinical significance
PY. 6.8	Technique to perform & interpret Spirometry
PY. 6.9	Examination of the respiratory system in a normal volunteer or simulated environment
PY. 6.10	Technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment
7	Renal Physiology
PY. 7.1	Structure and function of kidney
PY. 7.2	Structure and functions of juxta glomerular apparatus and role of renin-angiotensin system
PY. 7.3	Mechanism of urine formation and processes involved
PY. 7.4	Significance & implication of Renal clearance
PY. 7.5	Renal regulation of fluid and electrolytes & acid-base balance
PY. 7.6	Innervations of urinary bladder, physiology of micturition and its abnormalities
PY. 7.7	Artificial kidney, dialysis and renal transplantation
PY. 7.8	Renal Function Tests
PY. 7.9	Cystometry and discuss the normal cystometrogram
8	Endocrine Physiology

PY. 8.1	Physiology of bone and calcium metabolism
PY. 8.2	Synthesis, secretion, transport, physiological actions, regulation and effects of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus
PY. 8.3	Physiology of Thymus & Pineal Gland
PY. 8.4	Function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas
PY. 8.5	Metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome
PY. 8.6	Mechanism of action of steroid, protein and amine hormones
9	Reproductive Physiology
PY. 9.1	Sex determination; sex differentiation and their abnormalities and outline psychiatry and practical implementation of sex determination
PY. 9.2	Puberty: onset, progression, states; early and delayed puberty and outline adolescent clinical and psychological association
PY. 9.3	Male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness
PY. 9.4	Female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle – hormonal, uterine and ovarian changes
PY. 9.5	Physiological effects of sex hormones
PY. 9.6	Contraceptive methods for male and female. Discuss their advantages & disadvantages
PY. 9.7	Effects of removal of gonads on physiological functions
PY. 9.8	Physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it
PY. 9.9	Interpret a normal semen analysis report including (a) sperm count, (b) sperm morphology and (c) sperm motility, as per WHO guidelines and discuss the result
PY. 9.10	Physiological basis of various pregnancy tests
PY. 9.11	Hormonal changes and their effects during perimenopause and menopause
PY. 9.12	Common causes of infertility in a couple and role of IVF in managing a case of infertility
10	Neurophysiology
PY. 10.1	Organization of nervous system

PY. 10.2	Functions and properties of synapse, reflex, receptors
PY. 10.3	Somatic sensations & sensory tracts
PY. 10.4	Motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus
PY. 10.5	Structure and functions of reticular activating system, autonomic nervous system (ANS)
PY. 10.6	Spinal cord, its functions, lesion & sensory disturbances
PY. 10.7	Functions of cerebral cortex, basal ganglia thalamus, hypothalamus. Cerebellum and limbic system and their abnormalities
PY. 10.8	Behavioural and EEG characteristics during sleep and mechanism responsible for its production
PY. 10.9	Physiological basis of memory, learning and speech
PY. 10.10	Chemical transmission in the nervous system. (Outline the psychiatry element)
PY. 10.11	Clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment
PY. 10.12	Normal EEG forms
PY. 10.13	Perception of smell and taste sensation
PY. 10.14	Patho-physiology of altered smell and taste sensation
PY. 10.15	Functional anatomy of ear and auditory pathways & physiology of hearing
PY. 10.16	Pathophysiology of deafness. Hearing tests
PY. 10.17	Functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex
PY. 10.18	Physiological basis of lesion in visual pathway
PY. 10.19	Auditory & visual evoke potentials
PY. 10.20	(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
11	Integrated Physiology
PY. 11.1	Mechanism of temperature regulation
PY. 11.2	Adaptation to altered temperature (heat and cold)
PY. 11.3	Mechanism of fever, cold injuries and heat stroke

PY. 11.4	Cardio-respiratory and metabolic adjustment during exercise; physical training effects
PY. 11.5	Physiological consequences of sedentary lifestyle
PY. 11.6	Physiology of Infancy
PY. 11.7	Physiology of aging; free radicals and antioxidants
PY. 11.8	Cardio-respiratory changes in exercise (isometric and isotonic) with that in the resting state and under different environmental conditions (heat and cold)
PY. 11.9	Interpretation of growth charts
PY. 11.10	Interpretation of anthropometric assessment of infants
PY. 11.11	Concept, criteria for diagnosis of Brain death and its implications
PY. 11.12	Physiological effects of meditation
PY. 11.13	History taking and general examination in the volunteer / simulated environment
PY. 11.14	Basic Life Support in a simulated environment

Paper wise distribution of topics

Year: First MBBS Subject: Physiology

Paper	Section	Topics
I	A	MCQs on all topics of the paper I
	B & C	General Physiology
		Blood
		Respiratory System
		Cardio Vascular System,
		Cardio-respiratory and metabolic adjustment during exercise
		Renal system
		Gastro intestinal system
		Life style, aging, Meditation
		AETCOM module no. 1.2 & 1.3
		Scenario based / application questions can be on any topic of the paper I
	For long answer question and scenario based / application questions , topics will not be repeated	
II	A	MCQs on all topics of the paper II
	B & C	Endocrine Physiology
		Reproductive System, Physiology of Infancy
		Special senses
		Central nervous system including brain death
		Temperature Regulation & applied
		Nerve muscle physiology
		Scenario based / application questions can be on any topic of the paper II
	For long answer question and scenario based / application questions , topics will not be repeated	

Internal Assessment

Physiology

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

Sr. No	I-Exam (December)			II-Exam (March)		
	Theory	Practical (Including 05 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 05 Marks for Journal & Log Book	Total Marks
1	100	50	150	100	50	150

Sr. No	Preliminary Examinations			Remedial Examination (after University Examination)		
	III-Exam (July)					
	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
1	200	100	300	200	100	300

1. There will be 3 internal assessment examinations in the academic year. The structure of the internal assessment theory examinations should be similar to the structure of University examination.
2. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal

assessment marks to the University. (It is mandatory for the students to appear for all the three internal assessment examination.)

3. First internal assessment examination will be held in December, second internal assessment examination will be held in March and third internal assessment examination will be held in July.
4. Internal assessment marks for theory and practical will be converted to out of 40. Internal assessment marks, after conversion, should be submitted to university by 7th of August.
5. The student who scores 35% marks separately in theory & practical internal assessment examinations is eligible to appear for university examinations
6. It is mandatory to secure at least 50% marks of the total marks (combined in theory & practical) assigned for internal assessment in the particular subject in order to be declared successful at the final University Examination of that subject.
7. **Remedial internal assessment examination for students:**
 - a. Applicable for students who got individual theory or practical marks between 35% and 50% but did not score aggregate 50% (combined in theory and practical) for the subject: Remedial internal assessment should be organized by the college immediately after the completion of university examination of the affected students. The revised internal assessment marks (converted out of 40 each) of such students should be sent to the University within maximum of 15 days after university examination of these students. Such a remedial examination shall be conducted by allocating only three days per subject without any gap (two days for theory and one day for practical).
8. The internal assessment marks of the remedial examination alone shall be considered.
9. **Conversion Formula for calculation of marks in internal assessment examinations**

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40)	Minimum marks to be obtained to declare the final University examination result (Out of 80 Combined in theory and practical)
Theory	100	100	200	400	$\frac{\text{Total marks}}{10}$	14	40
Practical	50	50	100	200	$\frac{\text{Total marks}}{5}$	14	

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

10. The result of the final University examination for students, who fail to secure 50% marks of the total marks (40 marks after conversion - combined in theory & practical) in internal assessment, even after remedial examination, shall not be declared by University and his / her performance in the final examination shall be annulled.

11. a) Non eligible students having less than 35% internal assessment marks AND students who fail to secure 50 % combined in theory and practical in remedial examination will have to appear for a remedial internal assessment examination which will be held before supplementary examination. Eligible students (minimum 35 % separately in theory and practical) will be permitted to appear for supplementary examination, but students have to undergo remedial examination after university supplementary examination & score aggregate 50% marks for results to be declared (Same as described in point 8). The result of the supplementary University examination for students, who fail to secure 50% marks of the total marks (40 marks

after conversion-combined in theory & practical) in internal assessment, even after remedial measures, shall not be declared by University and his / her performance in the supplementary examination shall be annulled.

b) Students who score less than 35% separately in theory & practical AND the students who were unable to score aggregate 50% in remedial measures after supplementary examination will have to appear for III internal assessment examination (Preliminary examination) along with next regular batch of students & marks obtained in this examination will be used to calculate internal assessment marks. Further rules for these students will remain similar to the students admitted in next regular batch.

13) Supplementary University examination shall be held within 45 – 90 days of declaration of results of first professional University examinations.

First Year MBBS Practical Mark's Structure

Internal Assessment Examinations I & II

(Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Physiology					
	Hematology	Clinical Examination/Human Physiology expt. / Short exercises	Journal/ Logbook	Oral Viva	Total
	A	B	C	D	E
Max. Marks	15	20	5	10	50

First Year MBBS Physiology Practical Mark's Structure (Prelim exam)

(Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Seat No.	Exercise 1				Exercise 2	Exercise 3 *	Exercise 4**		Practical (Total)	Oral/Viva (Total)	PR/Oral Total
	Clinical Examination										
	C.V.S	R.S	C.N.S. & Special Senses	General Exam & Abdomen	Hematology	Short exercise	Human Physiology Experiment	Journal & Log book			
	A	B	C	D	E	F	G	H	I	J	K
Max. Mark's	10.0	10.0	10.0	10.0	10.0	15.0	15.0	10.0	90	10.0	100

***Short exercises 3 marks each(3X5)**

1. Case based scenarios/ endocrine disorders photographs .2. Interpretation of function tests. 3. One skeletal graph
4. One cardiac graph 5. Calculation

**** Exercise 4: Human Physiology Experiment** 1. Basic Life Support in a simulated environment 2. ECG 3. Spirometry 4. PEFR 5. EEG Interpretation 6. Ergography 7. Harward step test 8. Perimetry

*** Suggested Methods of Assessment**

Preclinical exam & OSPE

First Year MBBS Physiology Practical Mark's Structure(MUHS)

(Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

	Exercise 1				Exercise 2	Exercise 3 *	Exercise 4**	Practical (Total)	Oral/Viva (Total)	PR/Oral Total	
	Clinical Examination										
	C.V.S	R.S	C.N.S. & Special Senses	General Exam & Abdomen	Hematology	Short exercises	Human Physiology Experiment				
	A	B	C	D	E	F	G	H	I	J	
Max. Mark's	10.0	10.0	10.0	10.0	10.0	15.0	15.0	80	20.0	100	

***Short exercises 3 marks each(3X5)**

1. Case based scenarios/ endocrine disorders photographs .2. Interpretation of function tests. 3. One skeletal graph
4. One cardiac graph 5. Calculation

**** Exercise 4: Human Physiology Experiment** 1. Basic Life Support in a simulated environment 2. ECG 3. Spirometry 4. PEFR 5. EEG Interpretation 6. Ergography 7. Harward step test 8. Perimetry

*** Suggested Methods of Assessment**

Clinical exam & OSPE

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : First MBBS <i>(applicable w.e.f. June 2020 & onwards examinations)</i>	2. Subject Code : Appendix - a
3. Subject (PSP) : Physiology (TT) :	
4. Paper : : I/II 5. Total Marks : 100 6. Total Time : 3 Hrs.	
7. Web Pattern : [] 8. Web Skeleton : [] 9. Web Syllabus : [] 10. Web Old QP : []	

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (**4 MCQ Should be CASE based**) (20x1=20)

- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.
- 7) Use a common answerbook for all sections.

SECTION "B" (40 Marks)

2. Short Answer Questions (Any Four out of Five & two SAQs will be **Clinical Application Based**) (4 x 5 = 20)
- a) b) c) d) e)
3. Long Answer Questions (Any Two out of Three) (2 x 10 = 20)
- a) b)

SECTION "C" (40 Marks)

4. Short answer questions (Any Four out of Five) (**1 Should be on AETCOM module 1.2/1.3 in Paper I** & two SAQs will be **Clinical Application Based**) (4 x 5 = 20)
- a) b) c) d) e)
5. Long Answer Questions (Any Two out of Three) (20)
- a) b) c)

Books recommended:

1) Textbooks of Physiology :

Guyton - Textbook of Physiology
Ganong - Review of Medical Physiology
S. Wright - Applied Physiology

2) Reference Books :

Best and Taylor - Physiological basis of medical practice
Berne & levy. - Principles of Physiology
Dr. V.G. Ranade - Laboratory Manual and Journal of Physiology
Practicals

Ghai's VP Varshney, Mona Bedi- Textbook of Physiology -9 th Edition2019.

G.K. Pal-Comprehensive Text Book of Medical Physiology.

Course Content

(Based on Competency Table published by Medical Council of India. Students/Teachers are directed to refer competency table published on MCI Website for details)

Subject: Biochemistry

Year: First MBBS

Competency No.	Topics & Subtopics
1	Basic Biochemistry
1.1 Describe the molecular and functional organization of a cell and its subcellular components.	Molecular and functional organization of cell and its subcellular components
2	Enzymes
2.1 Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature.	Biochemical nature of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors IUBMB enzyme classification
2.2 Observe the estimation of SGOT & SGPT	Estimation of SGOT (AST) & SGPT (ALT) with its normal range and clinical significance.
2.3 Describe and explain the basic principles of enzyme activity	Mechanism of enzyme action, factors affecting enzyme activity, brief concept of enzyme kinetics with special reference to V_{max} & k_m .
2.4	Enzyme inhibition. Various inhibitors as drugs and poisons

Competency No.	Topics & Subtopics
Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes	
<p style="text-align: center;">2.5</p> Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions.	Diagnostic and therapeutic importance of various serum enzymes in various disorders
<p style="text-align: center;">2.6</p> Discuss use of enzymes in laboratory investigations (Enzyme-based assays)	Analytical uses of Enzymes in laboratory investigations (enzyme based assays)
<p style="text-align: center;">2.7</p> Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions.	Interpret various serum enzymes of liver & biliary tract, Pancreas, cardiac & skeletal muscle in various disorders
<p style="text-align: center;">3</p>	<p style="text-align: center;">Chemistry & Metabolism of Carbohydrates</p>
<p style="text-align: center;">3.1</p> Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body	Classification of carbohydrates with examples and functions of monosaccharides giving examples as energy fuel, glycosides and its therapeutic importance, disaccharides with examples and importance, polysaccharides with examples as storage form like glycogen, structural elements like glycosaminoglycan's in the human body, resistant starch, glycemic index, and dietary fiber. Clinical importance of dextran's
<p style="text-align: center;">3.2</p> Describe the processes involved in digestion and assimilation of carbohydrates and storage.	<p style="text-align: center;">3.3</p> Digestion & absorption, transport and storage of carbohydrates, Lactose intolerance and sucrase deficiency disorders

Competency No.	Topics & Subtopics
Describe and discuss the digestion and assimilation of carbohydrates from food.	
<p style="text-align: center;">3.4</p> Define and differentiate the pathways of carbohydrate metabolism(glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt).	Pathway, energetics, regulation & clinical diseases / disorders of - Glycolysis including Rappaport Leubering cycle, Gluconeogenesis, Glycogenesis, Glycogenolysis , HMP pathway , Uronic acid pathway, Galactose & Fructose metabolism
<p style="text-align: center;">3.5</p> Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders.	
<p style="text-align: center;">3.6</p> Describe and discuss the concept of TCA cycle as a amphibolic pathway and its regulation.	TCA cycle Pathway,energetics, regulation & its concepts as amphibolic pathway
<p style="text-align: center;">3.7 To be clubbed with 3.4 & 3.6</p> Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg: fluoride, arsenate)	Common poisons that inhibit crucial enzymes of carbohydrate metabolism like: Iodoacetate, fluoride & arsenite as poisons that inhibit enzymes of glycolysis Fluoroacetate, arsenite & malonate as poisons that inhibit enzymes of TCA cycle
<p style="text-align: center;">3.8 & 3.10</p> <p>3.8: Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates. (to be clubbed with comp no 11.17- Diabetes Mellitus)</p> <p style="text-align: center;">3.10</p> Interpret the results of blood glucose levels and other Laboratory investigations related to disorders of carbohydrate metabolism.	Interpretation of the results of blood glucose, Glycated hemoglobin & GTT as per WHO guidelines in Diabetes mellitus including gestational diabetes and other laboratory investigation like urinary glucose, urinary ketone bodies. Interpretation of the results of blood & urinary galactose levels in galactosemia. Interpretation of blood G6PD levels

Competency No.	Topics & Subtopics
<p style="text-align: center;">3.9</p> <p>Discuss the mechanism and significance of blood glucose regulation in health and disease.</p>	<p>Regulation of blood glucose in fed and fasting state in normal health & changes in diabetes mellitus.</p>
<p style="text-align: center;">4</p>	<p>Chemistry & Metabolism of Lipids</p>
<p style="text-align: center;">4.1</p> <p>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.</p>	<p>Definition & classification of lipids including classification of fatty acids, their nomenclature, numbering, functions & biological importance of various lipids like fatty acids, cholesterol, hormonal steroids, triglycerides, major phospholipids and sphingolipids</p>
<p style="text-align: center;">4.2</p> <p>Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism</p>	<p>Digestion, absorption and transport of lipids along with abnormalities like lipid malabsorption.</p> <p>Metabolism of fatty acids (β-oxidation of even and odd carbon fatty acids), regulation, energetics and disorders associated with oxidation of fatty acids, Formation & fate of ketone bodies, its significance, regulation and associated disorders like ketosis.</p> <p>In brief de novo fatty acid biosynthesis- site & organs, precursors, enzyme complex, product formed & regulatory steps.</p> <p>Biosynthesis of triacylglycerol and fate of triacylglycerol formed in liver & adipose tissue, its significance and regulation, Metabolic role of adipose tissue and disorders of lipid transport and storage like fatty liver.</p> <p>In brief Cholesterol biosynthesis- site & organs, precursors, key enzymes, product formed & regulatory step, metabolic fate & excretion</p>

Competency No.	Topics & Subtopics
<p>4.3 Explain the regulation of lipoprotein metabolism & associated disorders.</p>	<p>Metabolism of various lipoproteins and hyperlipoproteinemia's, hypolipoproteinemias- abetalipoproteinemias & Tangiers disease.</p>
<p>4.4 Describe the structure and functions of lipoproteins, their functions, interrelations & relations with atherosclerosis</p>	<p>Classification structure and functions of lipoproteins- (To be clubbed with 4.1) Metabolic interrelationship between various lipoproteins, Role of lipoproteins in transport of cholesterol and reverse cholesterol transport, atherosclerosis- (To be clubbed with 4.3)</p>
<p>4.5 & 4.7 Interpret laboratory results of analytes associated with metabolism of lipids</p>	<p>Various lipid profile tests with their biological reference intervals. Interpret lipid profile results in various disorders like hyper/hypolipoproteinemias, diabetes mellitus, nephrotic syndrome, disorders of thyroid etc.</p>
<p>4.6 Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.</p>	<p>Various eicosanoid classes (prostaglandins, leukotrienes & thromboxanes), their functions. Key features of synthesis of eicosanoids and inhibitors of eicosanoid synthesis, therapeutic uses of prostaglandins</p>
<p>4.7 Interpret laboratory results of analytes associated with metabolism of lipids.</p>	<p>Same as 4.5</p>
<p>5</p>	<p>Chemistry and Metabolism of Proteins</p>
<p>5.1 Describe and discuss structural organization of proteins.</p>	<p>General nature of amino acid, classification and importance of amino acids with examples, peptide bond formation, biologically important peptides, different levels of protein structure including disulfide & weak bonds with examples and clinical significance.</p>

Competency No.	Topics & Subtopics
<p style="text-align: center;">5.2</p> <p>Describe and discuss functions of proteins and structure-function relationships in relevant areas e.g. hemoglobin and selected hemoglobinopathies</p>	<p>Definition, various classifications with examples and functions of proteins, plasma proteins, structure - function relationship of proteins like myoglobin, normal & abnormal hemoglobin</p>
<p style="text-align: center;">5.3</p> <p>Describe the digestion and absorption of dietary proteins.</p>	<p>Digestion, absorption and transport of dietary proteins with related disorders like Hartnup disease, cystinuria & glycinuria.</p>
<p style="text-align: center;">5.4</p> <p>Describe common disorders associated with protein metabolism.</p>	<p>Role of transamination & deamination reactions in metabolism of amino acids in the formation of ammonia with their clinical significance.</p> <p>Transport of ammonia, pathway of urea cycle, its significance, regulation and metabolic disorders associated with urea cycle.</p> <p>Metabolic pathways for Glycine, Phenylalanine & Tyrosine, Sulphur containing amino acids (Methionine, Cysteine & Cystine) and branch chain amino acids (Valine, Isoleucine & Leucine), their role in biosynthesis of variety of specialized biomolecules, associated metabolic disorders</p> <p>For Tryptophan- Only important biomolecules formed & clinical significance.</p>
<p style="text-align: center;">5.5</p> <p>Interpret laboratory results of analytes associated with metabolism of proteins.</p>	<p>Interpret laboratory results of protein metabolism for example: Levels of various metabolites in blood or urine in metabolic disorders like- urea cycle disorders, Phenylketonuria, Tyrosinemia, Alkaptonuria, Hartnups disease, MSUD, cystinuria & homocystinuria</p>
<p style="text-align: center;">6</p>	<p>Metabolism and Homeostasis</p>
<p style="text-align: center;">6.1</p> <p>Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states.</p>	<p>Integration of carbohydrate, protein and lipid metabolism at cellular and tissue or organ level with its significance, Metabolic processes with role of specific organs in fed, fasting and starvation states.</p>

Competency No.	Topics & Subtopics
<p align="center">6.2</p> <p>Describe and discuss the metabolic processes in which nucleotides are involved.</p>	<p>Important steps in de novo biosynthesis of purine and pyrimidine nucleotides and their regulation, enzymes of the nucleotide biosynthesis that are inhibited by anticancer drugs, salvage pathway for the synthesis of purine nucleotides with its significance, catabolism of purine and pyrimidine nucleotides.</p>
<p align="center">6.3</p> <p>Describe the common disorders associated with nucleotide metabolism.</p>	<p>Disorder of nucleotide metabolism like gout, Lesch-Nyhan syndrome, orotic aciduria, with diagnostic tests & biochemical mechanism of nutritional & drug therapy.</p>
<p align="center">6.4</p> <p>Discuss the laboratory results of analytes associated with gout & Lesch-Nyhan syndrome.</p>	<p>Lab results of analytes related with gout & Lesch-Nyhan syndrome. Levels of uric acid in blood & urine and presence of urate crystals in synovial fluid in gout, levels of uric acid in blood</p>
<p align="center">6.5</p> <p>Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency</p>	<p>Sources, biochemical functions, daily requirement and deficiency manifestations of fat soluble vitamins (Vitamin A, D, E & K). Sources, biochemical functions and deficiency manifestations of water soluble vitamins (Thiamine, Riboflavin, Niacin, Pantothenic acid, Pyridoxine, Biotin, Folic acid, Cobalamin and vitamin C)</p>
<p align="center">6.6</p> <p>Describe the biochemical processes involved in generation of energy in cells.</p>	<p>Electron transport chain, mechanism of oxidative phosphorylation (chemiosmotic theory), substrate level phosphorylation, Uncouplers & Inhibitors of electron transport chain , shuttle systems for transport of extra-mitochondrial NADH</p>
<p align="center">6.7</p> <p>Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these.</p>	<p>Acids, bases and buffers, mechanism of action of buffer, dietary sources of acids, bases, normal pH of body fluids. Role of blood buffers, respiratory system & kidney in regulation of blood pH. Disorders associated with blood pH (acidosis and alkalosis) & their compensatory mechanisms, anion gap & its clinical importance.</p>

Competency No.	Topics & Subtopics
	Total body water and its compartmental distribution, various electrolytes- sodium, potassium and chloride, their distribution and clinical conditions related to their plasma level alterations, maintenance of normal water and electrolyte balance and disorders associated with water and electrolyte imbalance.
<p style="text-align: center;">6.8</p> <p>Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.</p>	Interpretation of results of arterial blood gas (ABG) analysis in acidosis and alkalosis.
<p style="text-align: center;">6.9</p> <p>Describe the functions of various minerals in the body, their metabolism and homeostasis.</p>	Dietary food sources, daily requirement, biochemical functions, metabolism and homeostasis of: Calcium, phosphorus & magnesium, trace elements (copper, fluoride, iodine, iron, manganese, selenium & zinc)
<p style="text-align: center;">6.10</p> <p>Enumerate and describe the disorders associated with mineral metabolism.</p>	Clinical conditions related to plasma level alterations of: Calcium, phosphorus & magnesium Trace elements (copper, fluoride, iodine, iron, manganese, selenium & zinc)
<p style="text-align: center;">6.11</p> <p>Describe the functions of heme in the body and describe the processes involved in its metabolism and describe porphyrin metabolism</p>	Structure and functions of hemoglobin, role of 2,3-bisphosphoglycerate (BPG) in oxygen binding and delivery, biosynthesis of heme (iron containing porphyrin), its regulation, functions in the body, disorders of heme biosynthesis (various types of porphyria's), catabolism of heme, various types of jaundice
<p style="text-align: center;">6.12</p> <p>Describe the major types of hemoglobin and its derivatives found in the body and their physiological/ pathological relevance.</p>	Types of normal human hemoglobin, types of normal & abnormal derivatives of hemoglobin, various hemoglobinopathies: Sickle cell anemia, Thalassemia

Competency No.	Topics & Subtopics
<p align="center">6.13</p> <p>Describe the functions of the kidney, liver, thyroid and adrenal glands.</p>	<p>1.Functions of liver, disorders& liver function tests</p> <p>2. Functions of kidney, disorders& kidney function tests</p> <p>3.Functions of Thyroid, disorders& thyroid function tests</p> <p>4.Functions of Adrenals , disorders& Adrenal function tests</p>
<p align="center">6.14</p> <p>Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).</p>	
<p align="center">6.15</p> <p>Describe the abnormalities of kidney, liver, thyroid and adrenal glands.</p>	
<p align="center">7</p>	<p align="center">Molecular Biology</p>
<p align="center">7.1</p> <p>Describe the structure and functions of DNA and RNA and outline the cell cycle</p>	<p>Structure and functions of nucleotides, biologically important nucleotides and their importance, major types of synthetic analogs of nucleotides (antimetabolites) and their clinical significance, structure and functions of DNA and RNA, Phases of cell cycle</p>
<p align="center">7.2</p> <p>Describe the processes involved in replication & repair of DNA and the transcription & translation mechanisms.</p>	<p>Replication of DNA in Eukaryotes, inhibitors of DNA replication and different types of repair systems of DNA</p> <p>Transcription in Eukaryotes and posttranscriptional modifications, inhibitors, reverse transcription & its significance</p> <p>Genetic code and wobble hypothesis, Translation in Eukaryotes, inhibitors, chaperons , protein folding and posttranslational modifications</p>
<p align="center">7.3</p>	<p>Causes and types of genetic mutations with examples.</p> <p>Regulation of Eukaryotic gene expression</p>

Competency No.	Topics & Subtopics
Describe gene mutations and basic mechanism of regulation of gene expression	
<p style="text-align: center;">7.4</p> Describe applications of molecular technologies like Recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis.	Recombinant DNA technology, restriction endonucleases, process of construction of recombinant DNA and its applications in medicine, DNA library, blot transfer techniques- southern blotting, northern blotting & western blotting, mechanism of polymerase chain reaction and its application in medical diagnosis and treatment of genetic diseases.
<p style="text-align: center;">7.5</p> Describe the role of xenobiotics in disease	Mechanisms of biotransformation of xenobiotics & associated diseases.
<p style="text-align: center;">7.6</p> Describe the anti-oxidant defense systems in the body.	Enzymatic and non-enzymatic antioxidant defense systems in the body.
<p style="text-align: center;">7.7</p> Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.	Free radical, biological sources of reactive oxygen species (ROS) and oxidative damage, oxidative stress, roll of oxidative stress in cancer, diabetes mellitus & atherosclerosis.
<p style="text-align: center;">8</p>	<p>Nutrition</p>
<p style="text-align: center;">8.1</p> Discuss the importance of various dietary components and explain importance of dietary fiber.	Importance of carbohydrates, lipids, proteins & vitamins, quality of proteins, various types of dietary fibers and their importance in the diet.
<p style="text-align: center;">8.2</p> Describe the types and causes of protein energy malnutrition and its effects.	Protein energy malnutrition, Kwashiorkor and Marasmus their causes and effects.

Competency No.	Topics & Subtopics
<p align="center">8.3</p> <p>Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.</p>	<p>Balanced diet in adult, in childhood and in pregnancy for optimal health, dietary advice in diabetes mellitus & coronary heart disease</p>
<p align="center">8.4</p> <p>Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity</p>	<p>Causes, effects and health risk associated with overweight/ obesity</p>
<p align="center">8.5</p> <p>Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance)</p>	<p>Nutritional importance of commonly used items of food like cereals, pulses, eggs, meat, fish, fruits and vegetables and their normal dietary requirements.</p>
<p align="center">9</p>	<p>Extracellular Matrix</p>
<p align="center">9.1</p> <p>List the functions and components of the extracellular matrix (ECM).</p>	<p>Types & functions of the extracellular matrix (ECM), Components and functions of proteoglycans, glycoproteins & major proteins of ECM</p>
<p align="center">9.2</p> <p>Discuss the involvement of ECM components in health and disease.</p>	<p>Disorders associated with components of ECM like Osteogenesis imperfecta, Marfan's Syndrome , Mucopolysaccharidoses, Scurvy & Menkes Disease</p>
<p align="center">9.3</p> <p>Describe protein targeting & sorting along with its associated disorders(It is non-core: N)</p>	<p>Types of protein targeting and sorting, disorders due to defects in mitochondrial targeting signals and defects in peroxisomal matrix protein import.</p>
<p align="center">10</p>	<p>Oncogenesis and Immunity</p>

Competency No.	Topics & Subtopics
<p align="center">10.1</p> <p>Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis</p>	<p>Characteristics of cancer cell, molecular basis of cancer (carcinogenesis) ,various carcinogens and initiator, promoter of carcinogens, oncogenes and proto-oncogenes, tumor suppressor genes (retinoblastoma, RB and p53), mechanisms of apoptosis in physiologic and pathologic conditions .</p>
<p align="center">10.2</p> <p>Describe various biochemical tumor markers and the biochemical basis of cancer therapy.</p>	<p>Biochemical tumor markers, biochemical basis of chemotherapy, radiotherapy, hormonal therapy, targeted drug therapy and immunotherapy.</p>
<p align="center">10.3</p> <p>Describe the cellular and humoral components of the immune system & describe the types and structure of antibody</p>	<p>Cells of the Immune System, types of immune systems (Innate &adaptive), cellular and humoral components of innate and adaptive immune systems, B cell development and the formation of antibodies, types, structure and mechanism of action of antibodies (Immunoglobulins), primary and secondary response</p>
<p align="center">10.4</p> <p>Describe & discuss innate and adaptive immune responses, self/non-self-recognition and the central role of T-helper cells in immune responses</p>	<p>Innate and adaptive immune systems, immunological memory, T lymphocytes development, role of helper T cells (CD4+ T cells) and cytotoxic T cells/killer cells/CD8+ T cells in immune responses, Brief concept of MHC</p> <p>Disorders – Immunodeficiency, autoimmunity & hypersensitivity.</p>
<p align="center">10.5</p> <p>Describe antigens and concepts involved in vaccine development.</p>	<p>Antigens, concept involved in vaccine development and their types.</p>
<p align="center">11</p>	<p align="center">Biochemical Laboratory Tests</p>
<p align="center">11.1</p> <p>Describe commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal.</p>	<p>Common lab equipments and apparatus like test tubes, pipettes & other glassware , auto pipettes, centrifuge, balances, oven, water bath good safe laboratory practice , management of needle stick injury & latest guidelines of disposal of biomedical waste</p>

Competency No.	Topics & Subtopics
<p align="center">11.2</p> <p>Describe the preparation of buffers and estimation of pH.</p>	<p>Preparation of buffer –acidic and alkaline. Measurement of pH paper and pH meter</p>
<p align="center">11.3</p> <p>Describe the chemical components of normal urine.</p>	<p>Chemical constituents of normal urine</p>
<p align="center">11.4 & 11.20</p> <p>11.4: Perform urine analysis to estimate and determine normal and abnormal constituents.</p> <p>11.20: Identify abnormal constituents in urine; interpret the findings and correlate these with pathological states.</p>	<p>Physical characteristics and organic constituents of urine. Collection of random & 24 hour urine sample Urine Report: Physical characteristics and abnormal constituents, urine dipsticks</p> <p>Interpretation of Urine Abnormalities</p>
<p align="center">11.5</p> <p>Describe screening of urine for inborn errors & describe the use of paper chromatography. Club Paper chromatography of amino acid & TLC from competency no 11.16</p>	<p>Urine: Screening of inborn errors. Paper chromatography for diagnosis of inborn errors</p>
<p align="center">11.6</p> <p>Describe the principles of colorimetry. (Club spectrophotometry from competency no 11.18)</p>	<p>Colorimeter- Principle, Beer and Lambert’s law & applications. Principles of spectrophotometry.</p>
<p align="center">11.7,11.8, 11.21 & 11.22</p> <p>11.7- Demonstrate the estimation of serum creatinine and creatinine clearance</p> <p>11.8- Demonstrate estimation of serum proteins, albumin and A:G ratio</p> <p>11.21- Demonstrate estimation of glucose, creatinine, urea and total protein in serum.</p> <p>11.22- Calculate albumin: globulin A:G ratio and creatinine clearance</p>	<p>Estimation of serum creatinine, urine creatinine and calculation of creatinine clearance and their clinical interpretation.</p> <p>Estimation of serum proteins, albumin and calculation of A/G ratio and their clinical interpretation.</p> <p>Estimation of plasma glucose, serum urea and their clinical interpretation.</p>
<p align="center">11.9</p>	<p>Estimation of serum total cholesterol and HDL cholesterol, their ratio their clinical interpretation.</p>

Competency No.	Topics & Subtopics
Demonstrate the estimation of serum total cholesterol and HDL cholesterol	
<p style="text-align: center;">11.10</p> Demonstrate the estimation of triglycerides	Estimation of serum triglycerides and their clinical interpretation.
<p style="text-align: center;">11.11</p> Demonstrate estimation of calcium and phosphorous	Estimation of serum calcium and phosphorus their clinical interpretation.
<p style="text-align: center;">11.12</p> Demonstrate the estimation of serum bilirubin	Estimation of serum bilirubin: Total, direct and indirect, their clinical interpretation.
<p style="text-align: center;">11.13 & 2.2</p> 11.13- Demonstrate the estimation of SGOT/ SGPT	Estimation of SGOT (AST)/ SGPT(ALT) and their clinical interpretation.
<p style="text-align: center;">11.14</p> Demonstrate the estimation of alkaline phosphatase	Estimation of serum ALP and their clinical interpretation.
<p style="text-align: center;">11.15</p> Describe & discuss the composition of CSF	Physical characteristics and chemical composition of CSF
<p style="text-align: center;">11.16 & 11.19</p> 11.16- Observe use of commonly used equipment's/techniques in biochemistry laboratory including: <ul style="list-style-type: none"> •pH meter •Paper chromatography of amino acid •Protein electrophoresis •TLC, PAGE •Electrolyte analysis by ISE •ABG analyzer •ELISA •Immunodiffusion •Autoanalyser •Quality control 	Principle, application and working of following lab equipment's/techniques: pH meter, paper chromatography of amino acids, protein electrophoresis, TLC, PAGE, Electrolyte analysis by ISE, ABG analyzer, ELISA, immunodiffusion, auto analyzer, quality control, DNA isolation from blood/tissue (Paper chromatography of amino acid ,TLC clubbed with 11.5)

Competency No.	Topics & Subtopics
<p>•DNA isolation from blood/ tissue</p> <p style="text-align: center;">11.19</p> <p>Outline the basic principles involved in the functioning of instruments commonly used in a biochemistry laboratory and their applications.</p>	
<p style="text-align: center;">11.17</p> <p>Explain the basis and rationale of biochemical tests done in the following conditions:</p> <ul style="list-style-type: none"> - diabetes mellitus, - dyslipidemia, - myocardial infarction, - renal failure, gout, - proteinuria, - nephrotic syndrome, - edema, - jaundice, - liver diseases, pancreatitis, disorders of acid- base balance, thyroid disorders. 	<p>Basis and rationale of biochemical tests required in the following Conditions:</p> <ul style="list-style-type: none"> - Diabetes mellitus-blood & urine glucose, microalbumin, ketone bodies and glycated hemoglobin – (Club with 3.8 & 3.10) - Dyslipidemia-lipid profile (Club with 4.5 & 4.7) - Myocardial infarction –CK, LDH, Troponin (Club with 2.6 & 2.7) - Renal failure & nephrotic syndrome, – BUN, Creatinine, urinary protein, cholesterol (Club with 3.8 & 3.10) - Gout- serum uric acid, synovial fluid analysis (Club with 6.3 & 6.4) - liver diseases & Jaundice- LFTs (Club with 6.1) Pancreatitis- serum amylase and lipase (Club with 2.5& 7 2.7) <p>Disorder of acid base balance- ABG analysis for pH, pO₂, O₂ saturation pCO₂, HCO₃ and base excess (BE) (Club with 6.7,6.8)</p> <ul style="list-style-type: none"> - Thyroid disorder – serum free and total T3 & T4 and serum TSH (Club with 6.1)
<p style="text-align: center;">11.18</p> <p>Discuss the principles of spectrophotometry.</p> <p style="text-align: center;">(Clubbed with 11.6)</p>	<p>Spectrophotometer –principle & use</p>

Competency No.	Topics & Subtopics
<p style="text-align: center;">11.19</p> <p>Outline the basic principles involved in the functioning of instruments commonly used in a Biochemistry laboratory and their applications. (Clubbed with & 11.6 & 11.16)</p>	<p>Instruments commonly used in Biochemistry laboratory & their applications.</p>
<p style="text-align: center;">11.20</p> <p>Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states. (Clubbed with 11.4)</p>	
<p style="text-align: center;">11.21</p> <p>Demonstrate estimation of glucose, creatinine, urea and total protein in serum. (Clubbed with 11.7, 11.8)</p>	
<p style="text-align: center;">11.22</p> <p>Calculate albumin: globulin (A/G)ratio and creatinine clearance (Clubbed with 11.7, 11.8)</p>	
<p style="text-align: center;">11.23</p> <p>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.</p>	<p>Energy contents of lipids, carbohydrates & proteins in common food items.</p>
<p style="text-align: center;">11.24</p> <p>Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food.</p>	<p>Advantages of unsaturated fats, disadvantages of saturated and trans fats in food</p>

Paper wise distribution of topics

Year: First MBBS Subject: Biochemistry

Paper	Section	Topics	Competency nos. BI
I	A	MCQs on all topics of the paper I	
	B & C	Basic Biochemistry	1.1
		Enzymes	2.1-2.7
		Chemistry & metabolism of carbohydrates	3.1-3.10
		Chemistry & metabolism of lipids	4.1-4.7
		Biological oxidation	6.6
		Xenobiotics	7.5
		Antioxidants & defence system	7.6-7.7
		Nutrition	8.1-8.5
		Extracellular matrix	9.1-9.3
		Oncology , oncogenesis & immunity	10.1-10.5
		Biomedical waste	11.1
		Physical characteristics and chemical composition of CSF	11.15
		Energy contents of lipids, carbohydrates & proteins in common food items, Advantages of unsaturated fats. Disadvantages of saturated and trans fats in food	11.23 & 11.24
	AETCOM- 1.4		
For long answer question and scenario based / application questions, topics will not be repeated.			
II	A	MCQs on all topics of the paper II	
	B & C	Chemistry & metabolism of proteins	5.1-5.5
		Integration & starvation	6.1
		Nucleic acid metabolism	6.2-6.4
		Vitamins	6.5
		Water electrolyte balance & acid base balance	6.7-6.8
		Mineral metabolism	6.9-6.10
		Haemoglobin chemistry and metabolism	6.11-6.12

	Organ function test	6.13-6.15
	Molecular biology	7.1-7.3
	Genetic engineering	7.4
	Urine: Screening of inborn errors.	11.5
	Principle, application and working of following lab equipments/techniques: pH meter, paper chromatography of amino acids, protein electrophoresis, TLC, PAGE, Electrolyte analysis by ISE, ABG analyzer, ELISA, immunodiffusion, auto analyzer, quality control, DNA isolation from blood/tissue	11.16
For long answer question and scenario based / application questions, topics will not be repeated.		

Internal Assessment

Biochemistry

Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards

Sr. No	I-Exam (December)			II-Exam (March)		
	Theory	Practical (Including 05 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 05 Marks for Journal & Log Book	Total Marks
1	100	50	150	100	50	150

Sr. No	Preliminary Examinations			Remedial Examination (after University Examination)		
	III-Exam (July)					
	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
1	200	100	300	200	100	300

1. There will be 3 internal assessment examinations in the academic year. The structure of the internal assessment theory examinations should be similar to the structure of University examination.
2. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University. (It is mandatory for the students to appear for all the three internal assessment examination.)

3. First internal assessment examination will be held in December, second internal assessment examination will be held in March and third internal assessment examination will be held in July.
4. Internal assessment marks for theory and practical will be converted to out of 40. Internal assessment marks, after conversion, should be submitted to university by 7th of August.
5. The student who scores 35% marks separately in theory & practical internal assessment examinations is eligible to appear for university examinations
6. It is mandatory to secure at least 50% marks of the total marks (combined in theory & practical) assigned for internal assessment in the particular subject in order to be declared successful at the final University Examination of that subject.

7. Remedial internal assessment examination for students:

- a. Applicable for students who got individual theory or practical marks between 35% and 50% but did not score aggregate 50% (combined in theory and practical) for the subject: Remedial internal assessment should be organized by the college immediately after the completion of university examination of the affected students. The revised internal assessment marks (converted out of 40 each) of such students should be sent to the University within maximum of 15 days after university examination of these students. Such a remedial examination shall be conducted by allocating only three days per subject without any gap (two days for theory and one day for practical).

8. The internal assessment marks of the remedial examination alone shall be considered.

9. Conversion Formula for calculation of marks in internal assessment examinations

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40)	Minimum marks to be obtained to declare the final University examination result (Out of 80 Combined in theory and practical)
Theory	100	100	200	400	$\frac{\text{Total marks}}{10}$	14	40

Practical	50	50	100	200	<u>Total marks</u> 5	14	
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While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

10. The result of the final University examination for students, who fail to secure 50% marks of the total marks (40 marks after conversion - combined in theory & practical) in internal assessment, even after remedial examination, shall not be declared by University and his / her performance in the final examination shall be annulled.

11.

a) Non eligible students having less than 35% internal assessment marks AND students who fail to secure 50 % combined in theory and practical in remedial examination will have to appear for a remedial internal assessment examination which will be held before supplementary examination. Eligible students (minimum 35 % separately in theory and practical) will be permitted to appear for supplementary examination, but students have to undergo remedial examination after university supplementary examination & score aggregate 50% marks for results to be declared (Same as described in point 8). The result of the supplementary University examination for students, who fail to secure 50% marks of the total marks (40 marks after conversion-combined in theory & practical) in internal assessment, even after remedial measures, shall not be declared by University and his / her performance in the supplementary examination shall be annulled.

b) Students who score less than 35% separately in theory & practical AND the students who were unable to score aggregate 50% in remedial measures after supplementary examination will have to appear for III internal assessment examination (Preliminary examination) along with next regular batch of students & marks obtained in this examination will be used to calculate internal assessment marks. Further rules for these students will remain similar to the students admitted in next regular batch.

13) Supplementary University examination shall be held within 45 – 90 days of declaration of results of first professional University examinations.

First Year MBBS Practical Mark's Structure

Internal Assessment Examinations I & II

(Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Biochemistry						
Practical					Oral/Viva	Total
Seat No.	Quantitative Experiment	Quantitative Experiment/Urine organic/Urine Report/Quality Control/Interpolation of lab Report /Interpolation of Special Technique	Spots	Journal/ Logbook		
	A	B	C	D	E	F
Max. Marks	15	15	5	5	10	50

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : First MBBS (applicable w.e.f. June 2020 & onwards examinations)	2. Subject Code : Appendix - a		
3. Subject (PSP) : Biochemistry (TT) :			
4. Paper : : I/II	5. Total Marks : 100	6. Total Time : 3 Hrs.	
7. Web Pattern : []	8. Web Skeleton : []	9. Web Syllabus : []	10. Web Old QP : []

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (**4 MCO Should be CASE based**) (20x1=20)
a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All questions are compulsory**.
- 4) The number to the **right** indicates **full marks**.
- 5) Draw diagrams **wherever** necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.
- 7) Use a common answerbook for all sections.

SECTION "B" (40 Marks)

2. Short Answer Questions (Any Four out of Five & two SAQs will be **Clinical Application Based**) (4 x 5 = 20)
a) b) c) d) e)
3. Long Answer Questions (Any Two out of Three) (2 x 10 = 20)
a) b) c)

SECTION "C" (40 Marks)

4. Short answer questions (Any Four out of Five) (**1 Should be on AETCOM module 1.4 in Paper I**) (4 x 5 = 20)
a) b) c) d) e)
5. Long Answer Questions (Any Two out of Three) (2 x 10 = 20)
a) b) c)

BOOKS RECOMMENDED:

TEXT BOOKS ;

1. Medical Biochemistry - U.Satyanarayan.
2. Biochemistry for Medical students by D.M.Vasudevan & Shree Kumari.
3. Medical Biochemistry by M.N. Chatterjea and Rana Shinde.
4. Text Book of Medical Biochemistry by Ramakrishnan, Prasannan & Rajan.
5. Medical Biochemistry by Debajyoti Das.
6. Biochemistry by A.C.Deb.

REFERENCE BOOKS:

1. Biochemistry by Pankaja Naik
2. Harper's Biochemistry.
3. Medical Biochemistry by N.V.Bhagwan.
4. Biochemistry by L.Stryer.
5. Biochemistry by Orten & Neuhans.
6. Text Book of Biochemistry for Medical Student-8th Edition-16 By- DM Vasudevan

Competency Nos.	Topics & Subtopics
PH1.10	Prescription writing
PH1.12	Factors modifying drug dose- Dose calculation
PH1.13	Pharmacology of Adrenergic drugs, Pharmacology of Anti adrenergic drugs
PH1.14	Pharmacology of Cholinergic drugs, Pharmacology of Anticholinergic drugs
PH1.15	Pharmacology of Skeletal muscle relaxants
PH1.16	Pharmacology of Histamine and antihistaminics, Pharmacology of Serotonin and drugs acting on serotonergic pathways, Pharmacotherapy of Migraine Pharmacology of NSAIDS Pharmacotherapy of Gout and Rheumatoid arthritis
PH1.17	Pharmacology of Local anaesthetics
PH1.18	Pharmacology of General anaesthetics and Preanesthetic drugs
PH1.19	Pharmacology of Sedatives & hypnotics Pharmacology of Antiepileptics Pharmacology of Anti depressants and anti anxiety drugs Pharmacology of Antipsychotics and anti manic drugs Pharmacology of Drugs used for neurodegenerative disorders Pharmacology of Opioids
PH1.20	Pharmacology of Alcohol and alcohol poisoning
PH1.21	
PH1.22	Pharmacology of drug dependence, drug abuse and Deaddiction
PH1.23	
PH1.24	Pharmacology of Diuretics and antidiuretics
PH1.25	Pharmacology of coagulants and anticoagulants Pharmacology of antiplatelets Pharmacology of thrombolytics and antifibrinolytics Pharmacology of plasma expanders
PH1.26	Pharmacology of Renin Angiotensin-Aldosterone system
PH1.27	Pharmacology of calcium channel blockers Pharmacology of other vasodilators and sympatholytics Pharmacotherapy of Hypertension, Pharmacotherapy of Shock

Competency Nos.	Topics & Subtopics
PH1.28	Pharmacology of Antianginal drugs Pharmacotherapy of IHD Pharmacology of Drugs for PVD
PH1.29	Pharmacology of Drugs used in CCF
PH1.30	Pharmacology of Antiarrhythmics
PH1.31	Pharmacology of Drugs for dyslipidemia
PH1.32	Pharmacology of Drugs for bronchial asthma and COPD
PH1.33	Pharmacology of Drugs for cough
PH1.34	Pharmacology of Drugs for acid peptic diseases Pharmacology of Antiemetics and prokinetics Pharmacology of Drugs for diarrhea and constipation
PH1.35	Pharmacotherapy of anemias
PH1.36	Pharmacology of Antidiabetic drugs Pharmacology of Drugs for thyroid dysfunction Pharmacology of Drugs affecting calcium metabolism
PH1.37	Pharmacology of Estrogen and antiestrogens Pharmacology of Progestins and antiprogestins Pharmacology of Androgens and antiandrogens Pharmacology of Anterior Pituitary hormones and their antagonists
PH1.38	Pharmacology of Corticosteroids and antagonists
PH1.39	Pharmacology of Hormonal contraceptives
PH1.40	Pharmacotherapy of infertility and erectile dysfunction
PH1.41	Pharmacology of Oxytocics and tocolytics
PH1.42	Introduction to Chemotherapy-General principles, Pharmacology of Sulfonamides and Trimethoprim Pharmacology of Fluoroquinolones, Pharmacology of Penicillin and its derivatives Pharmacology of Cephalosporins, Pharmacology of other Beta lactam antibiotics
PH1.43	Pharmacology of Aminoglycosides, Pharmacology of Macrolides Pharmacology of Broad spectrum antibiotics, Pharmacology of newer antibacterials

Competency Nos.	Topics & Subtopics
PH1.44	Pharmacology of Antitubercular drugs including MDR and XDR TB
PH1.45	
PH1.46	Pharmacology of Antileprotics
PH1.47	Pharmacology of Antimalarials Pharmacology of Antiamoebic and other Antiprotozoal drugs Pharmacology of Anthelmintics
PH1.48	Pharmacotherapy of UTI Pharmacotherapy of STD Pharmacology of Antiretroviral drugs
PH1.49	Pharmacology of Anticancer drugs
PH1.50	Pharmacology of Immunomodulators
PH1.51	Occupational and environmental toxicology
PH1.53	Pharmacology of Chelating agents
PH1.54	Vaccines and Antisera
PH1.55	National health programs
PH1.56	Geriatric and Pediatric pharmacology
PH1.57	Drugs used in skin disorders
PH1.58	Drugs used in Ocular disorders
PH1.61	Dietary supplements and Nutraceuticals
PH1.62	Antiseptics and Disinfectants
Competency Nos.	Topics & Subtopics
	CLINICAL PHARMACY
PH2.1	Drug dosage forms (Oral, local, parenteral)
PH2.2	ORS preparation
PH2.3	Intravenous drip setting
PH2.4	Dosage calculation
	CLINICAL PHARMACOLOGY

Competency Nos.	Topics & Subtopics
	CLINICAL PHARMACY
PH3.1	Prescription writing and communication
PH3.8	
PH5.1	
PH3.2	Critical appraisal of Prescription
PH3.3	Evaluation of Promotional Drug literature
PH3.4	Adverse drug reaction-Identification and reporting
PH3.5	Introduction to the concept of P – drugs and preparation of P-drug list
PH3.6	Interaction with a pharmaceutical representative and critical evaluation of Drug information
PH3.7	Introduction to the concept of Essential medicines
	EXPERIMENTAL PHARMACOLOGY
PH4.1	Drug administration on Maniquins
PH4.2	Study of effects of drugs on blood pressure using software
	COMMUNICATION TOPICS
PH5.2	Importance of optimal use of drug therapy, storage of medicines
PH5.3	Importance of Drug Compliance
PH5.4	
PH5.5	Problems associated with prescribing drugs with dependence liability
PH5.6	Problems associated with use of OTC drugs
PH5.7	Prescription: legal and ethical aspects
2.1	AETCOM-1
2.2	AETCOM-2
2.3	AETCOM-3

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: Second MBBS Subject: **Pharmacology**

Paper	Section	Topics
I	A	MCQs on all topics of the paper I
	B	General Pharmacology
		Autonomic Nervous system including skeletal muscle relaxants
		Cardiovascular system
		Haematology
		Gastro intestinal drugs
		Respiratory system
		AETCOM- 2.1, 2.2, 2.3 (section B one SAQ)
II	A	MCQs on all topics of the paper II
	B	Central Nervous system including general/local anaesthesia
		Endocrine system
		Chemotherapy system
		Autacoids
		MISC. TOPICS : Chelating agents, Vaccines and Antisera, ocular pharmacology, dermatological pharmacology, nutraceuticals, occupational and environmental pharmacology, toxicology)

**Second MBBS
Internal Assessment
Subject: Pharmacology**

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase	I-Exam (Jan)			II-Exam (May)			Prelim (July)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical	Total Marks
Second MBBS	100	100	200	100	100	200	Paper 1 -100 Paper 2 -100	100	300

1. There will be 3 internal assessment examinations in Pharmacology. The structure of the internal assessment theory examinations should be similar to the structure of University examinations.
2. It is mandatory for the students to appear for all the internal assessment examinations.
3. First internal assessment examination will be held in January, second internal assessment examination will be held in May and third internal assessment examination will be held in July.
4. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.
5. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.

6. Internal assessment marks for theory will be out of 400 and practical will be out of 300.
7. Reduce total theory internal assessment to 40 marks and total practical internal assessment to 40 marks. Students must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) to be eligible for appearing University examination
8. **Conversion Formula for calculation of marks in internal assessment examinations**

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% separately in Theory & Practical, 50% Combined)
Theory	100	100	200	400	<u>Total marks obtained</u> 10	16 (Minimum)
Practical	100	100	100	300	<u>Total marks obtained</u> 7.5	16 (Minimum)
						Total of Theory + Practical Must be 40.

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
15.01 to 15.49	15
15.50 to 15.99	16

9. Internal assessment marks will reflect as separate head of passing at the summative examination.
10. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

Practical marks Distribution:

A. For Ist and IInd term examinations

1. **Journal / Logbook** - 10 Marks
2. **Viva – 20 marks**
3. **Clinical Pharmacy (20 marks) –**
 - a. Dosage form- 10 marks,
 - b. ORS preparation/ IV drip setting- 5 marks
 - c. Dose calculation – 5 marks
4. **Clinical Pharmacology (30 marks)-**
 - a. Prescription writing- 10 marks
 - b. Prescription criticism and rewriting / justification of FDC – 10 marks
 - c. ADR identification / ADR reporting- 5 marks
 - d. P- drug list- 5 marks.
5. **Experimental Pharmacology (10 marks) OSPE –**
 - a. Drug administration using maniquin / drug effect using CAL software (or any other)- 10 marks
6. **Communication (10 marks) OSPE-**
 - a. prescription communication / ethics- legal drug storage/ use of device/drug adherence-compliance/ drug dependence/OTC/ interaction with Medical representative- 10 marks

B. For Preliminary examinations

1. **Viva – 30 marks**
 - a. Viva I- 15 marks
 - b. Viva II- 15 marks
2. **Clinical Pharmacy (20 marks) –**
 - a. Dosage form- 10 marks,
 - b. ORS preparation/ IV drip setting- 5 marks
 - c. Dose calculation – 5 marks
3. **Clinical Pharmacology (30 marks)-**
 - a. Prescription writing- 10 marks
 - b. Prescription criticism and rewriting / justification of FDC – 10 marks
 - c. ADR identification / ADR reporting- 5 marks
 - d. P- drug list- 5 marks.
4. **Experimental Pharmacology (10 marks) OSPE –**
 - a. Drug administration using maniquin / drug effect using CAL software (or any other)- 10 marks
5. **Communication (10 marks) OSPE-**
 - a. prescription communication / ethics- legal drug storage/ use of device/drug adherence-compliance/ drug dependence/OTC/ interaction with Medical representative- 10 marks

Second MBBS Practical Mark's Structure (I, II & Prelim Exam.)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: PHARMACOLOGY								
Practical						VIVA	Log Book/ Journal	Practical & Oral
Seat No.	Clinical Pharmacy	Clinical Pharmacology	Experimental Pharmacology	Communication	Total			
Max. Marks	20	30	10	10	70	20	10	100

Second MBBS Practical Mark's Structure (M.U.H.S. Final Exam.)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: PHARMACOLOGY									
Practical						Oral/Viva			Total
Seat No.	Clinical Pharmacy	Clinical Pharmacology	Experimental Pharmacology	Communication	Total	VIVA 1	VIVA 2	Total	Practical & Oral (E + H)
	A	B	C	D	E	F	G	H	I
Max. Marks	20	30	10	10	70	15	15	30	100

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : Second MBBS <i>(applicable w.e.f. September 2021 & onwards examinations)</i>	2. Subject Code :
3. Subject (PSP) : Pharmacology (TT) :	
4. Paper : : I	5. Total Marks : 100
	6. Total Time : 3 Hrs.
	7. Remu. (Rs) : Rs. 300/-
	8. Remu. (Rs) : Rs. 350/-
9. Web Pattern : []	10. Web Skeleton : []
	11. Web Syllabus : []
	12. Web Old QP : []

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x1 = 20)
 a) b) c) d) e) f) g) h) i) j)
 k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.
- 7) Use a common answerbook for all sections.

SECTION "B"

2. Short Answer Questions (AETCOM(2.1, 2.2, 2.3)(compulsory) (7x1=07)
a)
3. Short Answer Questions (Answer Any 3 out of 4) (7x3=21)
a) b) c) d)
4. Structured Long Answer Questions (Compulsory) (12x1=12)
a)
5. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)
a) b) c) d) e)
6. Structured Long Answer Questions (Compulsory) (12x1=12)
a)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : Second MBBS <i>(applicable w.e.f. September 2021 & onwards examinations)</i>	2. Subject Code :
3. Subject (PSP) : Pharmacology (TT) :	
4. Paper : II	5. Total Marks : 100
	6. Total Time : 3 Hrs.
	7. Remu. (Rs) : Rs. 300/-
	8. Remu. (Rs) : Rs. 350/-
9. Web Pattern : []	10. Web Skeleton : []
	11. Web Syllabus : []
	12. Web Old QP : []

Instructions:

SECTION "A" MCQ

- 1) in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x 1 = 20)
 - a) b) c) d) e) f) g) h) i) j)
 - k) l) m) n) o) p) q) r) s) t)

SECTION "B"

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.
 - 7) Use a common answerbook for all sections.

SECTION "B"

2. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)
 - a) b) c) d) e)
3. Structured Long Answer Questions (**Compulsory**) (12x1=12)
 - a)
4. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)
 - a) b) c) d) e)
5. Structured Long Answer Questions (**Compulsory**) (12x1=12)
 - a)

Competency Based Medical Education

Year: Second MBBS

Subject: Pharmacology Learning Resource Material

Books recommended :

1. Basic & Clinical Pharmacology. Katzung BG (Ed), Publisher: Prentice Hall International Ltd., London.
2. Pharmacology & Pharmacotherapeutics. Satoskar RS, Bhandarkar SD (Ed), Publisher: Popular Prakashan, Bombay.
3. Essentials of Medical Pharmacology. Tripathi KD (Ed), Jaypee Brothers, publisher: Medical Publishers (P) Ltd.
4. Clinical Pharmacology. Laurence DR, Bennet PN, Brown MJ (Ed). Publisher: Churchill Livingstone

Reference books :

1. Goodman & Gilman's The Pharmacological Basis of Therapeutics. Hardman JG & Limbird LE (Ed), Publisher: McGraw-Hill, New York.
2. A Textbook of Clinical Pharmacology. Roger HJ, Spector RG, Trounce JR (Ed), Publisher: Hodder and Stoughton Publishers.

Maharashtra University of Health Sciences
Nashik



**PHARMACOLOGY LOGBOOK For PHASE SECOND
MBBS STUDENTS AS PER COMPETENCY BASED
CURRICULUM**

Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize “**Health for all**” as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching learning strategies for the same. With this goal in mind, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency Based curriculum.

Name of the College

Admission Year : _____

CERTIFICATE

This is to certify that,

Mr/Ms. _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for Phase I MBBS Competency Based Curriculum in the subject of Pharmacology.

Date: ___/___/_____

Place: _____

Teacher Incharge

**Professor and Head
Department of Pharmacology**

Instructions

1) This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II MBBS students in the subject of Pharmacology.

2) Students are instructed to keep their logbook entries up to date.

3) Students are expected to write minimum 2 reflections on any two activities each of Clinical Pharmacology skills & Self-Directed Learning (SDL).

4) Students also have to write reflections on AETCOM Module 2.1 , 2.2, 2.3) Reflections should be structured using the following guiding questions:

- What happened? (What did you learn from this experience)
- So what? (What are the applications of this learning)
- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

5) The logbook assessment will be based on multiple factors like

- Attendance
- Active participation in the sessions
- Timely completions
- Quality of write up of reflections
- Overall presentation

INDEX

Sr. No	Description	Page No's	Status Complete/ Incomplete	Signature of Teacher
1	Clinical Pharmacology Skills			
2	Self-Directed Learning, Seminars, Projects, Quizzes			
3	AETCOM Module * 2.1 , 2.2, 2.3			
4	Attendance Records			
5	Records of Internal Assessment			

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

Record of Clinical Pharmacology Skills

S.No	Skill	Setting	Correlation	Date	Signature of Teacher
1	Critical appraisal of prescription / audit				
2	Critical evaluation of promotional literature				
3	Filling and interpretation of ADR report				
4	Prepare and explain P drug list				
5	Optimised Interaction with pharmaceutical representative				
6	Prepare essential drug list for health care facility				

Reflection on Clinical Pharmacology Skills

Topic:

Date:

Signature of Teacher-in- charge

Reflection on Clinical Pharmacology Skills

Topic:

Date:

Signature of Teacher-in- charge

Reflection on Clinical Pharmacology Skills

Topic:

Date:

Signature of Teacher-in- charge

2. Self Directed Learning, Seminars, Tutorials, Projects, Quizzes

S.No	Self Directed Learning, Seminars, Tutorials, Projects, Quizzes	Date	Signature of Teacher

Reflection on self directed learning activities

Topic:

Date:

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic:

Date:

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic:

Date:

Signature of Teacher-in- charge

3: AETCOM Module

2.1 Foundation of communication 2

2.2 Foundation of bioethics

2.3 Health care as a right

Reflection on AETCOM module

Topic:

Date:

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic:

Date:

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic:

Date:

Signature of Teacher-in- charge

4A: Attendance Record of the Student

S. No	Term	Theory (%)	Practical (%)	Signature of the Student	Signature of the Teacher
A	I Term				
B	II Term				
C	Overall attendance				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

SECTION 4B: Details of attending extra classes [For poor attendance (if any)]

S.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Section 5. Records of Internal Assessment Examinations

Records of Internal Assessment examinations

S.No	Exam	Theory	Practical including viva	Signature of student	Signature of Teacher
1	I Internal Assessment	/ 100	/ 100		
2	II Internal Assessment	/ 100	/ 100		
3	III Internal Assessment (Prelim)	/ 200	/ 100		
4	Internal Assessment marks	/ 400	/ 300		
5	Betterment exam	/ 200	/ 100		
6	Final Internal Assessment	/ 400	/ 300		

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Course Content
Second MBBS (from October 2020)
Subject: Pathology (Theory and Practical)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page nos.160-203)

1. Total Teaching hours : **230 hours**
2. A. Lectures (hours): **80**
- B. Self-directed learning (hours): **12**
- C. Clinical postings (hours): **NIL**
- D. Small group teachings/tutorials/Integrated teaching/Practicals (hours): **138**

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	138 hours	12 hours
PA1.1 – 1.3	Introduction to Pathology <i>Core:</i> common definitions and terms, role of pathologist, branches of pathology <i>Practicals:</i> histological techniques, working of a microscope <i>Non-core:</i> history and evolution of pathology	1	2	
PA2.1 – 2.8	Cell injury and adaptations <i>Core:</i> Cell injury, necrosis, apoptosis, intracellular accumulations, cell death, cellular adaptations, calcification, disorders of pigment metabolism, <i>Non-core:</i> cellular aging	6	6	
PA3.1-3.2	Amyloidosis- Core: Pathogenesis and pathology of amyloidosis	1	2	
PA4.1 – 4.4	Inflammation <i>Core:</i> Acute and chronic inflammation, mediators of inflammation, granulomatous inflammation, including TB	4	4	
PA5.1	Healing and repair- Core: Repair and wound healing	1	-	
PA6.1- 6.7	Hemodynamic disorders <i>Core:</i> Edema, hyperemia, congestion, hemorrhage, shock, thrombosis, embolism, ischemia, infarction	4	6	
PA7.1-7.5	Neoplasia <i>Core:</i> Definition and classification of neoplasia, molecular basis of cancer, carcinogenesis, effects of tumour on host, paraneoplastic syndrome, laboratory diagnosis of cancer <i>Non-core:</i> Immunology and immune response to cancer	5	6	
PA8.1-8.3	Basic diagnostic cytology <i>Core:</i> Diagnostic role of cytology, exfoliative cytology	-	2	
PA9.1-9.37	Immunopathology <i>Core:</i> Principles of immunity, hypersensitivity reactions, HLA system, transplant rejection, autoimmunity, systemic lupus erythematosus, pathology of HIV/AIDS	5	2	
PA10.1-10.4	Infections and infestations- Core: Malaria, cysticercus, leprosy, <i>Non-core:</i> Common bacterial, viral, protozoal, and helminthic diseases	-	2	1

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	138 hours	12 hours
PA11.1-11.3	Genetic and pediatric diseases- <i>Non-core:</i> Mutations, Tumors and tumour-like conditions of infancy and childhood, common storage disorders	1	-	1
PA12.1-12.3	Environmental and nutritional disease <i>Core:</i> Air pollution, tobacco, alcohol, protein calorie malnutrition, starvation, obesity	-	2	
PA13.1-13.5	Introduction to hematology <i>Core:</i> Hematopoiesis and extramedullary hematopoiesis, definition and classification of anemia, anticoagulants, investigations in anemia, peripheral smear examination	2	8	
PA14.1-14.3	Microcytic anemia- <i>Core:</i> Iron metabolism, microcytic hypochromic anemia, peripheral smear in microcytic anemia	1	4	
PA15.1-15.4	Macrocytic anemia <i>Core:</i> Vitamin B12 metabolism. Etiology and pathogenesis of B12 deficiency, laboratory investigations in macrocytic anemia, megaloblastic anemia <i>Non-core:</i> differences between megaloblastic and non-megaloblastic anemia	1	4	
PA16.1-16.7	Hemolytic anemia <i>Core:</i> Definition and classification of hemolytic anemia, pathogenesis, features, hematological indices, sickle cell anemia, thalassemia, peripheral smear picture in hemolytic anemia, classification, clinical features of hemolytic anemia	2	6	
PA17.1-17.2	Aplastic anemia- <i>Non-core:</i> Etiology, pathogenesis, findings, bone marrow aspiration and biopsy	1	2	
PA18.1-18.2	Leukocyte disorders <i>Core:</i> Leukocytosis, leukopenia, acute and chronic leukemia	2	2	
PA19.1-19.7	Lymph node and spleen <i>Core:</i> Lymphadenopathy, TB lymphadenitis, Hodgkin's disease, non-Hodgkin's lymphoma, splenomegaly	2	2	
PA20.1	Plasma cell disorders- <i>Core:</i> Multiple myeloma	-	2	
PA21.1-21.5	Hemorrhagic disorders <i>Core:</i> Normal hemostasis, vascular and platelet disorders, ITP, hemophilia, clotting disorders, DIC, Vitamin K deficiency	3	4	
PA22.1-22.7	Blood banking and transfusion <i>Core:</i> Blood group systems, compatibility testing, blood components, transfusion transmitted infections, transfusion reactions, autologous transfusion	2	4	1
PA23.1-23.3	Clinical Pathology <i>Core:</i> Urine analysis, Body fluids, semen analysis, thyroid function tests, renal function tests, liver function tests		12	
PA24.1-24.7	Gastrointestinal tract:- <i>Core:</i> Etiology, pathogenesis, pathology, morphology and clinical features of: oral cancer,	5	4	

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	138 hours	12 hours
	peptic ulcer disease, polyp, carcinoma stomach, tubercular intestine, inflammatory bowel disease, carcinoma colon			
PA25.1-25.6	Hepatobiliary system: <i>Core:</i> Bilirubin metabolism, etiopathogenesis and classification of jaundice, hepatic failure, pathology, complications, consequences and laboratory diagnosis of viral hepatitis; pathophysiology of alcoholic liver disease and cirrhosis; portal hypertension; hepatocellular carcinoma Interpretation of liver function tests; Serology panel in viral hepatitis (small group)	5	6	
PA26.1-26.7	Respiratory system: <i>Core:</i> Etiopathogenesis, morphology, and complications of: pneumonia, lung abscess, chronic obstructive airway disease, bronchiectasis, tuberculosis, occupational lung disease, lung tumours, <i>Non-core:</i> pleural tumours, mesothelioma	4	4	
PA27.1-27.10	Cardiovascular system: <i>Core:</i> Arteriosclerosis, aneurysm, heart failure, ischemic heart disease, laboratory diagnosis of acute coronary syndrome, rheumatic fever and heart disease, infective endocarditis, pericarditis, pericardial effusion, <i>Non-core:</i> cardiomyopathies,	5	6	1
PA28.1-28.16	Urinary tract <i>Core:</i> Histology of kidney, clinical syndromes, acute renal failure, chronic renal failure, acute glomerulonephritis, glomerular manifestations in systemic disease, diseases of tubular interstitium, acute tubular necrosis, acute and chronic pyelonephritis, reflux nephropathy, vascular diseases of kidney, cystic diseases of kidney, urinary calculi and obstructive uropathy, renal tumours <i>Non-core:</i> thrombotic angiopathies, urothelial tumours	6	4	2
PA29.1-29.5	Male genital tract: <i>Core:</i> Testicular tumours, carcinoma penis, benign prostatic hyperplasia, carcinoma prostate, <i>Non-core:</i> prostatitis	1	2	
PA30.1-30.9	Female genital tract: <i>Core:</i> Pathogenesis, etiology, pathology, diagnosis, and progression of: carcinoma cervix, carcinoma endometrium, leiomyoma, leiomyosarcoma, ovarian tumours, gestational trophoblastic neoplasms, <i>Non-core:</i> cervicitis, endometriosis, adenomyosis, endometrial hyperplasia	1	6	2
PA31.1-31.4	Breast- <i>Core:</i> Benign breast disease, carcinoma breast, <i>Non-core:</i> gynecomastia	1	2	
PA32.1-32.9	Endocrine system <i>Core:</i> etiology, pathogenesis, pathology and iodine dependency of: goiters, thyrotoxicosis, hyperthyroidism,	4	4	2

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	138 hours	12 hours
	hypothyroidism; epidemiology, etiopathogenesis, pathology, laboratory diagnosis, complications of diabetes mellitus <i>Non-core:</i> hyperparathyroidism, pancreatic cancer, adrenal insufficiency, Cushing syndrome, adrenal neoplasms			
PA33.1-33.5	Bone and soft tissue <i>Core:</i> Osteomyelitis, bone tumours, soft tissue tumors <i>Non-core:</i> Rheumatoid arthritis, Paget's disease of bone	1	4	1
PA34.1-34.4	Skin <i>Core:</i> Squamous cell carcinoma, basal cell carcinoma <i>Non-core:</i> Nevus, melanoma,	1	4	
PA35.1-35.3	Central nervous system <i>Core:</i> CSF findings in meningitis, CNS tumours	2	4	
PA36.1	Eye- <i>Non-core:</i> Retinoblastoma			1
AETCOM 2.4	Working in a health care team		2	
AETCOM 2.8	What does it mean to be family member of a sick patient?		2	

Subject: Pathology
LIST OF PRACTICALS

GENERAL PATHOLOGY

1. Histological techniques, tissue processing, microscopy
2. Intracellular accumulations, calcification
3. Cellular adaptations
4. Disorders of pigment metabolism
5. Amyloidosis
6. Acute inflammation
7. Chronic inflammation and repair
8. Tuberculosis and leprosy
9. Hemodynamic disturbances
10. Neoplasia
11. Infections and infestations

HEMATOLOGY

1. Collection of specimens, anticoagulants, normal hematopoiesis
2. Hemoglobin estimation: Interpretation of report
3. Hematocrit and Erythrocyte sedimentation rate: Interpretation of report
4. Complete blood count: Interpretation of report (without flags) from automated cell counter
5. Preparation of peripheral smear and performing differential leukocyte count, interpretation of peripheral smear
6. Investigations of anemia
7. Investigations of leukemia
8. Plasma cell dyscrasias
9. Investigation of bleeding and clotting disorders
10. Blood banking: Performing blood grouping and interpretation of results

SYSTEMIC PATHOLOGY

1. Lymphoma
2. Splenomegaly
3. Gastrointestinal tract: Ulcers
4. Intestinal polyp and carcinoma intestine
5. Cirrhosis and hepatocellular carcinoma
6. Pneumonia, bronchiectasis
7. Pulmonary tuberculosis and bronchogenic carcinoma
8. Atherosclerosis
9. Left ventricular hypertrophy, myocardial infarction, lab diagnosis of MI
10. Rheumatic heart disease and infective endocarditis
11. Chronic contracted kidney, glomerulonephritis, pyelonephritis
12. Urinary calculi, Renal cell carcinoma,
13. Male genital tract
14. Female genital tract: Carcinoma cervix, Carcinoma endometrium
15. Leiomyoma, Ovarian tumours
16. Gestational trophoblastic disease
17. Breast
18. Thyroid
19. Bone and soft tissue tumours
20. Skin
21. CNS tumours

CLINICAL PATHOLOGY

1. Urine analysis: Interpretation of physical, chemical and microscopic examination results
2. Semen analysis: Lecture demonstration, interpretation of report
3. Basic cytological techniques: FNAC and exfoliative cytology (Lecture demonstration)
4. CSF examination: Lecture demonstration and interpretation of reports
5. Body fluids: Interpretation of serous effusion reports
6. Interpretation of kidney function tests
7. Investigations in jaundice
8. Investigations in diabetes mellitus

AUTOPSY

Indications and technique, autopsy findings in common conditions like myocardial infarction, cirrhosis, portal hypertension, bronchogenic carcinoma, miliary tuberculosis, renal cell carcinoma etc.

Suggested LIST OF SPECIMENS

1. Fatty liver
2. Vesicular mole (hydropic change)
3. Cardiac hypertrophy
4. Kidney- atrophy
5. Large white kidney-amyloidosis
6. Anthracosis
7. Hemochromatosis- Prussian blue reaction
8. Acute appendicitis
9. Serofibrinous pericarditis
10. Abscess- lung/ liver
11. Tubercular lymph node- caseation, matted lymph nodes
12. CVC Liver
13. Splenic infarct
14. Renal infarct
15. Myocardial infarction
16. Leiomyoma
17. Squamous papilloma
18. Hemangioma- Liver
19. Intestinal polyp
20. Squamous cell carcinoma-skin/cervix/penis
21. Adenocarcinoma- intestine
22. Melanoma
23. Enlarged lymph node: Hodgkin's disease
24. Benign ulcer-Peptic ulcer
25. Tubercular intestine
26. Amebic ulcer
27. Malignant ulcer- Carcinoma stomach
28. Cirrhosis
29. Hepatocellular carcinoma
30. Pulmonary tuberculosis
31. Miliary tuberculosis
32. Rheumatic heart disease mitral stenosis
33. Small contracted kidney
34. Renal cell carcinoma
35. Hydronephrosis
36. Urinary calculi
37. Wilm's tumour

38. Carcinoma penis
39. Seminoma
40. Carcinoma cervix
41. Carcinoma endometrium
42. Dermoid cyst
43. Ovarian cystadenoma
44. Leiomyoma
45. Carcinoma breast
46. Goitre
47. Solitary thyroid nodule
48. Giant cell tumour
49. Fibroadenoma of breast
50. Lipoma
51. Metastatic (Liver/Lung)
52. Fat necrosis
53. Meningioma

LIST OF SLIDES

1. Cloudy swelling-kidney
2. Fatty liver
3. Hyaline change in leiomyoma
4. Benign prostatic hyperplasia
5. Squamous metaplasia
6. Calcification
7. Amyloidosis- kidney
8. Nevus
9. Anthracosis
10. Acute appendicitis
11. Acute pyogenic meningitis
12. Tubercular lymphadenitis (Caseous necrosis, granuloma)
13. Tuberculoid leprosy
14. Lepromatous leprosy
15. Pulmonary edema
16. CVC lung
17. CVC liver
18. Thrombus
19. Renal infarct
20. Myocardial infarction
21. Capillary hemangioma
22. Squamous papilloma
23. Squamous cell carcinoma
24. Adenocarcinoma
25. Actinomycosis
26. Rhinosporidiosis
27. Cysticercosis
28. PS-Malaria
29. Eosinophilia
30. Neutrophilia
31. Microcytic anemia
32. Macrocytic anemia
33. Sickle cell anemia
34. Acute leukemia

35. Chronic myeloid leukemia
36. Hodgkin's disease
37. Peptic ulcer
38. Tubercular intestine
39. Adenocarcinoma intestine
40. Cirrhosis
41. Lobar pneumonia
42. Bronchopneumonia
43. Pulmonary tuberculosis
44. Atherosclerosis
45. Myocardial infarction
46. Crescentic glomerulonephritis
47. Chronic pyelonephritis
48. Renal cell carcinoma
49. Benign prostatic hyperplasia
50. Seminoma
51. Fibroadenoma
52. Carcinoma breast
53. Colloid goiter
54. Papillary carcinoma thyroid
55. Basal cell carcinoma
56. Melanoma
57. Lipoma
58. Osteogenic sarcoma
59. Giant cell tumour

CASE-BASED LEARNING

1. Microcytic anemia
2. Macrocytic anemia
3. Hemolytic anemia
4. Multiple myeloma
5. Hepatitis
6. Obstructive jaundice
7. Hemolytic jaundice
8. Nephrotic syndrome
9. Meningitis

CHARTS

1. Interpretation of microcytic anemia
2. Interpretation of macrocytic anemia
3. Interpretation of hemolytic anemia
4. Interpretation of acute leukemia
5. Interpretation of chronic leukemia
6. Interpretation of multiple myeloma
7. Interpretation of bleeding disorder
8. Interpretation of clotting disorder
9. Interpretation of Liver disorders
10. Interpretation of Renal disorders
11. Interpretation of Thyroid disorders
12. Interpretation of acute myocardial infarction
13. Pyogenic meningitis
14. Tubercular meningitis
15. Viral meningitis
16. Diabetes mellitus

Paper wise distribution of topics for Prelim & MUHS Annual Examination
Year: Second MBBS
Subject: Pathology

Paper	Section	Topics
I	A	Topics of the paper I
		General Pathology: 1. Cell injury and adaptation 2. Amyloidosis 3. Inflammation and repair 4. Tuberculosis and leprosy 5. Hemodynamic disturbances 6. Immunopathology 7. Neoplasia 8. Infections and infestations 9. Basic diagnostic cytology 10. Histological techniques, tissue processing 11. Genetic and pediatric diseases 12. Environmental and nutritional diseases
		Hematology 1. Introduction to hematology 2. Microcytic anemia 3. Macrocytic anemia 4. Hemolytic anemia 5. Aplastic anemia 6. Leukocyte disorder 7. Lymph node and spleen 8. Plasma cell disorders 9. Hemorrhagic disorders 10. Blood banking and transfusion medicine
		AETCOM 2.4 and 2.8
II	A	Topics of the paper II
		Systemic Pathology 1. Gastrointestinal tract 2. Hepatobiliary system 3. Respiratory system 4. Cardiovascular system 5. Urinary tract 6. Male genital tract 7. Female genital tract 8. Breast 9. Endocrine system 10. Bone and soft tissue 11. Skin 12. Central nervous system
		Clinical Pathology 1. Urine analysis 2. Body fluid analysis 3. CSF analysis 4. Liver function test 5. Renal function test 6. Diabetes mellitus 7. Thyroid function test

**Second MBBS
Internal Assessment
Subject: Pathology**

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase	I-Exam (After 3 months , Jan)			II-Exam (After 7 months, May)			Prelims (July)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical	Total Marks
Second MBBS	100	100	200	100	100	200	Paper 1 -100 Paper 2 -100	100	300

1. There will be 3 internal assessment examinations in Pathology. The structure of the internal assessment theory examinations should be similar to the structure of University examinations.
2. It is mandatory for the students to appear for all the internal assessment examinations.
3. First internal assessment examination will be held in January, second internal assessment examination will be held in May and third internal assessment examination will be held in July.
4. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.
5. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
6. Internal assessment marks for theory will be out of 400 and practical will be out of 200.

7. Reduce total theory internal assessment to 40 marks and total practical internal assessment to 40 marks. Students must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) to be eligible for appearing University examination

8. Conversion Formula for calculation of marks in internal assessment examinations

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% separately in Theory & Practical, 50% Combined)	
Theory	100	100	200	400	<u>Total marks obtained</u> 10	16 (Minimum)	Total of Theory + Practical Must be 40.
Practical	50	50	100	200	<u>Total marks obtained</u> 05	16 (Minimum)	

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
15.01 to 15.49	15
15.50 to 15.99	16

9. Internal assessment marks will reflect as separate head of passing at the summative examination.

10. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

Second MBBS Practical Mark's Structure

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: Pathology (I term)											
Practical							Oral/Viva			Total	
Seat No.	OSPE	PS/DLC	CBC report interpretation	Blood group	Histopathology slide	Total	Gross specimen General Pathology	Hematology		Log book	Practical & Oral
	Max. Marks	10	5	5	5	5	30	7	8	15	5

Subject: Pathology (II term)									
Practical					Oral/Viva				Total
Seat No.	OSPE	Urine report interpretation	Histopathology slide	Total	Gross specimen Systemic Pathology	Clinical pathology	Total	Log book	Practical & Oral
	Max. Marks	20	5	5	30	7	8	15	5

Subject: Pathology Prelim Examination

Practical									Oral/Viva			
Seat No.											Total	Practical & Oral
	OSPE	PS/DLC	Urine interpretation	CBC report interpretation	Blood group	Histopathology slide	Logbook	Total	Gross specimens	Clinical and hematology	Total	Total (G +)
Max. Marks	32	10	10	5	5	8	10	80	10	10	20	100

Subject: Pathology M.U.H.S. Final Exam.

Practical								Oral/Viva			
Seat No.							Total			Total	Practical & Oral
	OSPE	PS/DLC	Urine interpretation	CBC report interpretation	Blood group	Histopathology slide		Gross specimens	Clinical and hematology	Total	Total (G + J)
	A	B	C	D	E	F	G	H	I	J	K
Max. Marks	32	10	10	5	5	8	70	15	15	30	100

For Urine examination

Students are not expected to perform urine examination, but to interpret results. Clinical cases with urinary findings may be given to them for interpretation.

Suggested OSPE stations

1. Clinical chart interpretation (Clinical Pathology) - 5 marks
2. Clinical chart interpretation (Clinical Pathology) - 5 marks
3. Clinical chart interpretation (CSF) - 5 marks
4. Clinical chart interpretation (Hematology)- 5 marks
5. Slides (3)- Hematology, benign, inflammatory- 6 marks
6. Specimens (3)- 6 marks

Subject: Pathology

LIST OF PRACTICALS

GENERAL PATHOLOGY

1. Histological techniques, tissue processing, microscopy
2. Intracellular accumulations, calcification
3. Cellular adaptations
4. Disorders of pigment metabolism
5. Amyloidosis
6. Acute inflammation
7. Chronic inflammation and repair
8. Tuberculosis and leprosy
9. Hemodynamic disturbances
10. Neoplasia
11. Infections and infestations

HEMATOLOGY

1. Collection of specimens, anticoagulants, normal hematopoiesis
2. Hemoglobin estimation: Interpretation of report
3. Hematocrit and Erythrocyte sedimentation rate: Interpretation of report
4. Complete blood count: Interpretation of report (without flags) from automated cell counter
5. Preparation of peripheral smear and performing differential leukocyte count, interpretation of peripheral smear
6. Investigations of anemia
7. Investigations of leukemia
8. Plasma cell dyscrasia
9. Investigation of bleeding and clotting disorders
10. Blood banking: Performing blood grouping and interpretation of results

SYSTEMIC PATHOLOGY

1. Lymphoma
2. Splenomegaly
3. Gastrointestinal tract: Ulcers
4. Intestinal polyp and carcinoma intestine
5. Cirrhosis and hepatocellular carcinoma
6. Pneumonia, bronchiectasis
7. Pulmonary tuberculosis and bronchogenic carcinoma
8. Atherosclerosis
9. Left ventricular hypertrophy, myocardial infarction, lab diagnosis of MI
10. Rheumatic heart disease and infective endocarditis
11. Chronic contracted kidney, glomerulonephritis, pyelonephritis
12. Urinary calculi, Renal cell carcinoma,
13. Male genital tract
14. Female genital tract: Carcinoma cervix, Carcinoma endometrium
15. Leiomyoma, Ovarian tumours
16. Gestational trophoblastic disease
17. Breast
18. Thyroid
19. Bone and soft tissue tumours
20. Skin
21. CNS tumours

CLINICAL PATHOLOGY

1. Urine analysis: Interpretation of physical, chemical and microscopic examination results
2. Semen analysis: Lecture demonstration, interpretation of report
3. Basic cytological techniques: FNAC and exfoliative cytology (Lecture demonstration)
4. CSF examination: Lecture demonstration and interpretation of reports
5. Body fluids: Interpretation of serous effusion reports
6. Interpretation of kidney function tests
7. Investigations in jaundice
8. Investigations in diabetes mellitus

AUTOPSY

Indications and techniques, autopsy findings in common conditions like myocardial infarction, cirrhosis, portal hypertension, bronchogenic carcinoma, miliary tuberculosis, renal cell carcinoma etc.

LIST OF SPECIMENS

1. Fatty liver
2. Vesicular mole (hydropic change)
3. Cardiac hypertrophy
4. Kidney- atrophy
5. Large white kidney-amyloidosis
6. Anthracosis
7. Hemochromatosis- Prussian blue reaction
8. Acute appendicitis
9. Serofibrinous pericarditis
10. Abscess- lung/ liver
11. Tubercular lymph node- caseation, matted lymph nodes
12. CVC Liver
13. Splenic infarct
14. Renal infarct
15. Myocardial infarction
16. Leiomyoma
17. Squamous papilloma
18. Hemangioma- Liver
19. Intestinal polyp
20. Squamous cell carcinoma-skin/cervix/penis
21. Adenocarcinoma- intestine
22. Melanoma
23. Enlarged lymph node: Hodgkin's disease
24. Benign ulcer-Peptic ulcer
25. Tubercular intestine
26. Amebic ulcer
27. Malignant ulcer- Carcinoma stomach
28. Cirrhosis
29. Hepatocellular carcinoma
30. Pulmonary tuberculosis
31. Miliary tuberculosis
32. Bronchiectasis
33. Bronchogenic carcinoma
34. Atherosclerosis
35. Myocardial infarction

36. Small contracted kidney
37. Renal cell carcinoma
38. Hydronephrosis
39. Urinary calculi
40. Wilm's tumour
41. Carcinoma penis
42. Seminoma
43. Carcinoma cervix
44. Carcinoma endometrium
45. Dermoid cyst
46. Ovarian cystadenoma
47. Leiomyoma
48. Carcinoma breast
49. Goitre
50. Solitary thyroid nodule
51. Giant cell tumour
52. Fibroadenoma of breast
53. Lipoma
54. Metastasis of Liver/Lung
55. Fat necrosis
56. Meningioma

LIST OF SLIDES

1. Cloudy swelling-kidney
2. Fatty liver
3. Hyaline change in leiomyoma
4. Benign prostatic hyperplasia
5. Squamous metaplasia
6. Calcification
7. Amyloidosis- kidney
8. Nevus
9. Anthracosis
10. Acute appendicitis
11. Acute pyogenic meningitis
12. Tubercular lymphadenitis (Caseous necrosis, granuloma)
13. Tuberculoid leprosy
14. Lepromatous leprosy
15. Pulmonary edema
16. CVC lung /Liver
17. Thrombus
18. Renal infarct
19. Myocardial infarction
20. Capillary hemangioma
21. Squamous papilloma
22. Squamous cell carcinoma
23. Adenocarcinoma
24. Actinomycosis
25. Rhinosporidiosis
26. Cysticercosis
27. PS-Malaria

28. Eosinophilia
29. Neutrophilia
30. Microcytic anemia
31. Macrocytic anemia
32. Sickle cell anemia
33. Acute leukemia
34. Chronic myeloid leukemia
35. Hodgkin's disease
36. Peptic ulcer
37. Tubercular intestine
38. Adenocarcinoma intestine
39. Cirrhosis
40. Lobar pneumonia
41. Bronchopneumonia
42. Pulmonary tuberculosis
43. Atherosclerosis
44. Myocardial infarction
45. Crescentic glomerulonephritis
46. Chronic pyelonephritis
47. Renal cell carcinoma
48. Benign prostatic hyperplasia
49. Seminoma
50. Fibroadenoma
51. Carcinoma breast
52. Colloid goiter
53. Papillary carcinoma thyroid
54. Basal cell carcinoma
55. Melanoma
56. Lipoma
57. Osteogenic sarcoma
58. Giant cell tumour

CASE-BASED LEARNING

1. Microcytic anemia
2. Macrocytic anemia
3. Hemolytic anemia
4. Multiple myeloma
5. Hepatitis
6. Obstructive jaundice
7. Hemolytic jaundice
8. Nephrotic syndrome
9. Meningitis

CHARTS

1. Interpretation of microcytic anemia
2. Interpretation of macrocytic anemia
3. Interpretation of hemolytic anemia
4. Interpretation of acute leukemia
5. Interpretation of chronic leukemia

6. Interpretation of multiple myeloma
7. Interpretation of bleeding disorder
8. Interpretation of clotting disorder
9. Interpretation of Liver disorders
10. Interpretation of Renal disorders
11. Interpretation of Thyroid disorders
12. Interpretation of acute myocardial infarction
13. Pyogenic meningitis
14. Tubercular meningitis
15. Viral meningitis
16. Diabetes mellitus

f. Books recommended:

- a) Text book of Pathology by Robbins
- b) Text book of General Pathology Part I & II by Bhende and Deodhare
- c) Clinical Pathology by Talib
- d) Text book of Pathology by Harsh Mohan
- e) Text book of Pathology by Muir
- f) Haematology De Gruchi
- g) IAPM text book of Pathology

Reference books:

- a) Anderson's text book of Pathology Vol I & II
- b) Oxford text book of Pathology Vol. I, II & III
- c) Pathology by Rubin and Farber
- d) Pathologic basis of Disease Robbins

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : Second MBBS <i>(applicable w.e.f. September 2021 & onwards examinations)</i>	2. Subject Code :
3. Subject (PSP) : PATHOLOGY (TT) :	
4. Paper : : I	5. Total Marks : 100
6. Total Time : 3 Hrs.	7. Remu. (Rs) : Rs. 300/-
	8. Remu. (Rs) : Rs. 350/-
9. Web Pattern : []	10. Web Skeleton : []
11. Web Syllabus : []	12. Web Old QP : []

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each. At least 5 should be scenario-based MCQ) (20 x1=20)
- a) b) c) d) e) f) g) h) i) j)
- k) l) m) n) o) p) q) r) s) t)

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
 - 7) Use a common answerbook for all sections.

2. SAQ - AETCOM Module (2.4 and 2.8) (7x1=7)
- a)
3. Short Answer Questions (Any 3 out of 4) (7x3=21)
- a) b) c) d)
4. Long Answer Questions (Structured) (12x1=12)
- a)
5. Short answer questions (Any 4 out of 5) (7x4=28)
- a) b) c) d) e)
6. Long Answer Questions (Structured) (12x1=12)
- a)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : Second MBBS <i>(applicable w.e.f. September 2021 & onwards examinations)</i>	2. Subject Code :
3. Subject (PSP) : PATHOLOGY (TT) :	
4. Paper : II	5. Total Marks : 100
6. Total Time : 3 Hrs.	7. Remu. (Rs) : Rs. 300/-
	8. Remu. (Rs) : Rs. 350/-
9. Web Pattern : []	10. Web Skeleton : []
11. Web Syllabus : []	12. Web Old QP : []

SECTION "A" MCQ

Instructions:

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each. At least 5 should be scenario-based MCQ) (20 x1=20)

a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.
- 7) Use a common answerbook for all sections.

2. Short Answer Questions (Any 4 out of 5) (7x4=28)

a) b) c) d) e)

3. Long Answer Question Structured (12x1=12)

a)

4 Short answer question (Any 4out of 5) (8x3=24)

b) b) c) d) e)

5 Long Answer Questions (Scenario Based) (12x1=12)

a)

Competency Based Medical Education

Year: Second MBBS

Subject: *Pathology Learning Resource Material*

Books recommended:

- a) Text book of Pathology by Robbins
- b) Text book of General Pathology Part I & II by Bhende and Deodhare
- c) Clinical Pathology by Talib
- d) Text book of Pathology by Harsh Mohan
- e) Text book of Pathology by Muir
- f) Haematology De Gruchi
- g) IAPM text book of Pathology

Reference books:

- a) Anderson's text book of Pathology Vol I & II
- b) Oxford text book of Pathology Vol. I, II & III
- c) Pathology by Rubin and Farber
- d) Pathologic basis of Disease Robbins

Maharashtra University of Health Sciences Nashik



**PATHOLOGY LOGBOOK FOR PHASE
SECOND MBBS STUDENTS AS PER COMPETENCY
BASED CURRICULUM**

Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize “**Health for all**” as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching-learning strategies for the same. With this goal in mind, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency based curriculum.

Name of the College

Admission Year: _____

CERTIFICATE

This is to certify that,

Mr/Ms. _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for Phase II MBBS Competency Based Curriculum in the subject of Pathology.

Date: ___/___/_____

Place: _____

Teacher Incharge

**Professor and Head
Department of Pathology**

Instructions

1. This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II MBBS students in the subject of Pathology.
2. Students are instructed to keep their logbook entries up to date.
3. Students also have to write reflections on AETCOM Module 2.4 and 2.8)
Reflections should be structured using the following guiding questions:
 - What happened? (What did you learn from this experience)
 - So what? (What are the applications of this learning)
 - What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)
4. The logbook assessment will be based on multiple factors like
 - Attendance
 - Active participation in the sessions
 - Timely completions
 - Quality of write up of reflections
 - Overall presentation

CONTENTS

S.No	Topic	Signature of the teacher	Remarks

S.No	Topic	Signature of the teacher	Remarks

S.No	Topic	Signature of the teacher	Remarks

ASSESSMENT OF LOG BOOK

Sr.No	Description	Maximum Marks	Marks obtained	Signature of Teacher
1	Completion of Journal- I term	5		
2	Completion of Journal- II term	5		
3	Performance in case based learning	3		
4	Participation in seminars, research projects, quiz etc	3		
5	Reflections on AETCOM Module * 2.4 , 2.8	2		
6	Attendance Records	2		
7	Total marks obtained for log book	20		

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

The following skills have been performed by the student and are certified by the teacher as follows:

		Date	Teacher's signature
1.	Preparation of peripheral smear		
2.	Interpretation of liver function tests and viral serology panel		
3	Interpretation of CSF in meningitis		

PRACTICAL TOPICS IN PATHOLOGY

Students are expected to write briefly about the topics and draw labelled diagrams of relevant slides in their journal, and get it assessed from their teacher.

GENERAL PATHOLOGY

1. Histological techniques, tissue processing, microscopy
2. Intracellular accumulations, calcification
3. Cellular adaptations
4. Disorders of pigment metabolism
5. Amyloidosis
6. Acute inflammation
7. Chronic inflammation and repair
8. Tuberculosis and leprosy
9. Hemodynamic disturbances
10. Neoplasia
11. Infections and infestations

HEMATOLOGY

1. Collection of specimens, anticoagulants, normal hematopoiesis
2. Hemoglobin estimation: Interpretation of report
3. Hematocrit and Erythrocyte sedimentation rate: Interpretation of report
4. Complete blood count: Interpretation of report (without flags) from automated cell counter
5. Preparation of peripheral smear and performing differential leukocyte count, interpretation of peripheral smear
6. Investigation of anemia
7. Investigation of leukemia
8. Plasma cell dyscrasia
9. Investigation of bleeding and clotting disorders
10. Blood banking: Performing blood grouping and interpretation of results

SYSTEMIC PATHOLOGY

1. Lymphoma
2. Splenomegaly
3. Gastrointestinal tract: Ulcers
4. Intestinal polyp and carcinoma intestine
5. Cirrhosis and hepatocellular carcinoma
6. Pneumonia, bronchiectasis
7. Pulmonary tuberculosis and bronchogenic carcinoma
8. Atherosclerosis
9. Left ventricular hypertrophy, myocardial infarction, lab diagnosis of MI
10. Rheumatic heart disease and infective endocarditis
11. Chronic contracted kidney, glomerulonephritis, pyelonephritis
12. Urinary calculi, Renal cell carcinoma,
13. Male genital tract
14. Female genital tract: Carcinoma cervix, Carcinoma endometrium
15. Leiomyoma, Ovarian tumours
16. Gestational trophoblastic disease
17. Breast
18. Thyroid

19. Bone and soft tissue tumours
20. Skin
21. CNS tumours

CLINICAL PATHOLOGY

1. Urine analysis: Interpretation of physical, chemical and microscopic examination results
2. Semen analysis: Lecture demonstration, interpretation of report
3. Basic cytological techniques: FNAC and exfoliative cytology (Lecture demonstration)
4. CSF examination: Lecture demonstration and interpretation of reports
5. Body fluids: Interpretation of serous effusion reports
6. Interpretation of kidney function tests
7. Investigations in jaundice
8. Investigations in diabetes mellitus

AUTOPSY

Indications and techniques, autopsy findings in common conditions like myocardial infarction, cirrhosis, portal hypertension, bronchogenic carcinoma, miliary tuberculosis, renal cell carcinoma etc.

Reflection on AETCOM 2.4

Topic: Working in a health care team

Date:

Signature of Teacher-in- charge

Reflection on AETCOM 2.8

Topic: What does it mean to be a family member of a sick patient? Date:

Signature of Teacher-in- charge

Participation in Seminars, Research Projects, Quiz

S.No	Activity	Date	Signature of Teacher

Signature of Teacher-in- charge

Attendance Record of the Student

S. No	Term	Theory (%)	Practical (%)	Signature of the Student	Signature of the Teacher
A	I Term				
B	II Term				
C	Overall attendance				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Details of attending extra classes [For poor attendance (if any)]

S.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Section 5. Records of Internal Assessment Examinations

Records of Internal Assessment examinations

S.No	Exam	Theory	Practical including viva and log book	Signature of student	Signature of Teacher
1	I Internal Assessment	/ 100	/ 50		
2	II Internal Assessment	/ 100	/ 50		
3	III Internal Assessment (Prelim)	/ 200	/ 100		
4	Internal Assessment marks	/ 400	/ 200		
5	Remedial exam (if any)	/ 200	/ 100		
6	Internal Assessment marks after conversion	/ 100	/ 100		

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Second MBBS (from October 2020)
Subject: Microbiology Theory / Practical

Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate,
 2018. (Vol. 1; page nos. 205-227)

1. Total Teaching hours : **190**
2. A. Lectures(hours): **70**
 - B. Self-directed learning (hours):- **10**
 - C. Clinical Postings (Hours): **NA**
 - D. Small group teachings/tutorials/Integrated teaching / Practical's (hours): **110**

Competency Nos.	Topics and Subtopics
MI1.1	Introduction to Microbiology and historical aspects. Introduction to bacteria, viruses & Bacteriophages, fungi, parasites, host parasite relationship, normal flora.
MI1.2	Morphology of bacteria, microscopy, Gram staining, Z-N staining, stool examination- routine microscopy
MI1.3	Types of infection, source/ reservoir of infection, modes of transmission, pathogenicity, definition of prevalence, incidence, types of infectious diseases (endemic, epidemic, pandemic, sporadic)
MI1.4	Methods of sterilization and disinfection, their application in the laboratory, clinical and surgical practice, demonstration of working of autoclave
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
MI1.6	Mechanism of drug resistance, methods of antibiotic susceptibility testing, definition of MIC, MBC, break points, interpretation of antibiotic susceptibility test report, antimicrobial audit/use, antibiotic policy, antimicrobial stewardship.
MI1.7	Immunity
MI1.8	Antigen, antibodies, immune response and complement, antigen antibody reactions
MI1.9	Vaccines, universal vaccination program, immunoprophylaxis, immunotherapy

Competency Nos.	Topics and Subtopics
MI1.10	Hypersensitivity, autoimmune disorders and immunodeficiency states, laboratory methods used in their detection
MI1.11	Immunological mechanisms of transplantation and tumor immunity
MI2.1	Rheumatic Heart Disease-definition, etiological agent, pathogenesis, clinical features and laboratory diagnosis. Streptococci
MI2.2	Infective endocarditis- classification, etiological agents, pathogenesis, clinical features and laboratory diagnosis. Streptococcus viridans, Streptococcus mutans, HACEK
MI2.3	Blood collection for culture, throat swab collection, blood culture, ASO test, interpretation of the test
MI2.4	Anemia-definition, etiological agents, pathogenesis, clinical features and laboratory diagnosis. Hookworm, Trichuris trichiura,
MI2.5	Kala_azar, malaria, filariasis and other common parasites prevalent in India - Schistosomes, Fasciolopsis buski, Paragonimus westermani,
MI2.6	Peripheral smear staining for malaria, Identify the slide for filarial
MI2.7	HIV- epidemiology, the etio- pathogenesis, evolution, complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV
MI3.1	Microbial agents causing diarrhea and dysentery- epidemiology, morphology, pathogenesis, clinical features and laboratory diagnosis of Shigella, Campylobacter, Vibrio, salmonella, E. hystolytica, Giardia, B. coli, H. nana, Taenia , Intestinal nematodes, Norwalk virus and Rota virus, Coronavirus
MI3.2	Stool examination-routine microscopy, hanging drop preparation,
MI3.3	Septicemia, Enteric fever and Food poisoning Salmonella -Morphology, pathogenesis, clinical features, laboratory diagnosis.
MI3.4	Blood culture, Widal test, Stool culture, Clot culture, Interpretation of the reports
MI3.5	Food poisoning- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Staphylococci, Cl. botulinum, Bacillus cereus
MI3.6	Acid peptic disease (APD)- etio-pathogenesis, clinical course laboratory diagnosis and management. H. pylori
MI3.7	Viral hepatitis- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Hepatitis A, B, C, D, E, Cytomegalovirus, Epstein-Barr virus, HSV, VZV, Measles, Rubella
MI3.8	Serological tests for the laboratory diagnosis of viral hepatitis, viral markers, interpretation of reports

Competency Nos.	Topics and Subtopics
MI4.1	Anaerobic infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Spore bearing and non-spore bearing anaerobes, Clostridia
MI4.2	Bone and joint infections- etio-pathogenesis, clinical features and laboratory diagnosis. Prosthetic joint infections, Staphylococci, Acinetobacter
MI4.3	Skin and soft tissue infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Superficial, cutaneous and sub-cutaneous fungal infections, Mycetoma, Leprosy, Herpes.
MI5.1	Meningitis- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Meningococci, Leisteria, H. influenzae, Cryptococcus neoformans
MI5.2	Encephalitis- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Primary amoebic meningo-encephalitis, viral encephalitis, Japanese encephalitis, Rabies, Aseptic meningitis -ECHO viruses
MI5.3	laboratory diagnosis of meningitis, interpretation of laboratory reports
MI6.1	Upper respiratory tract infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Orthomyxo virus, Paramyxo virus, Adenovirus, Rhinovirus, Diphtheria, Bordetella and Lower respiratory tract infections-etioloical agents, pathogenesis, clinical features and laboratory diagnosis Streptococcus pneumonia, Mycobaterium tuberculosis,
MI6.2	Gram staining- Interpretation of results
MI6.3	Z-N staining and Fluorescent staining- Interpretation of results
MI7.1	Genitourinary infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Non-gonococcal urethritis, Trichomoniasis, Bacterial vaginosis
MI7.2	Sexually transmitted infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Syphilis, Gonorrhoea, Herpes, Calymmatobacterium, HPV, Molluscum contagiosum
MI7.3	Urinary tract infections- etiological agents, pathogenesis, significant bacteruria , clinical features and laboratory diagnosis. E. coli, Klebsiella, Proteus
MI8.1	Zoonotic diseases- etiological agents, mode of transmission, pathogenesis, clinical features laboratory diagnosis and prevention-Brucella, Yesinia, Leptospira, Anthrax and Arbo viruses, Hydatid disease
MI8.2	Opportunistic infections- etio-pathogenesis, factors contributing to the occurrence of OI, laboratory diagnosis - Toxoplasma, Pneumocystis jiroveci, Cryptospora, Isospora,
MI8.3	Oncogenic viruses in the evolution of virus associated malignancy

Competency Nos.	Topics and Subtopics
MI8.5	Healthcare Associated Infections (HAI)- definition, types, factors that contribute to the development of HAI and the methods for prevention- Pseudomonas, MOTT, Antibiotic associated diarrhea
MI8.6	Hand hygiene, bio medical waste management, environmental hygiene, use of equipments, respiratory hygiene and cough etiquette, PEP, spill management, vaccination
MI8.7	Infection control practices and use of Personal Protective Equipments (PPE)
MI8.8	Microbiology of food, water and air
MI8.9	Methods of sample collection and transport
MI8.10	Collection and transport of specimens
MI8.11	Respect for patient samples sent to the laboratory for performance of laboratory tests
MI8.12	Confidentiality pertaining to patient identity in laboratory results
MI8.13	Appropriate laboratory test in the diagnosis of the infectious disease
MI8.14	Confidentiality pertaining to patient identity in laboratory results
MI8.15	Interpret the results of the laboratory tests used in diagnosis of the infectious disease
MI8.16	National Health Programs in the prevention of common infectious diseases- Vector borne diseases control program, Revised National Tuberculosis Control Program (RNTCP), National AIDS Control Program, National Leprosy Eradication Program, Pulse Polio Program- Poliovirus
Miscellaneous topics - may be covered in theory or SGT	Burkholderia, Mycoplasma, Borrelia, Actinomyses & Nocardia, Rickettsia, Bortonella, Ehrlichia, Chlamydiae, Ebola virus, Slow viruses

AETCOM Module no.	Topics and Subtopics
2.5	Bioethics-patient autonomy and decision making
2.6	Bioethics-patient autonomy and decision making
2.7	Bioethics-patient autonomy and decision making

Revision

Paper wise distribution of topics for Prelim & MUHS Annual Examination
Year: Second MBBS Subject: MICROBIOLOGY

Paper	Section	Topics
I	A	MCQs on all topics of the paper I
		General Microbiology and Immunity
		CVS and Blood
		Gastrointestinal and hepatobiliary system
		AETCOM Module No- 2.5,2.6 and 2.7
II	A	MCQs on all topics of the paper II
		Musculoskeletal system, skin and soft tissue infection
		Central nervous system infections
		Respiratory tract infections
		Genitourinary and sexually transmitted infections
		Zoonotic diseases and miscellaneous

**Second MBBS
Internal Assessment
Subject: Microbiology**

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase	I-Exam (After 3 months , Jan)			II-Exam (After 7 months, May)			Prelims (July)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical	Total Marks
Second MBBS	50	50	100	50	50	100	Paper 1 -100 Paper 2 -100	100	300

1. There will be 3 internal assessment examinations in Microbiology. The structure of the internal assessment theory examinations should be similar to the structure of University examinations.
2. It is mandatory for the students to appear for all the internal assessment examinations.
3. First internal assessment examination will be held in January, second internal assessment examination will be held in May and third internal assessment examination will be held in July.
4. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.
5. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
6. Internal assessment marks for theory will be out of 300 and practical will be out of 200.

7. Reduce total theory internal assessment to 40 marks and total practical internal assessment to 40 marks. Students must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40% marks in theory and practical separately) to be eligible for appearing University examination
8. **Conversion Formula for calculation of marks in internal assessment examinations**

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% separately in Theory & Practical, 50% Combined)	
Theory	50	50	200	300	<u>Total marks obtained</u> 7.5	16 (Minimum)	Total of Theory + Practical Must be 40.
Practical	50	50	100	200	<u>Total marks obtained</u> 05	16 (Minimum)	

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
15.01 to 15.49	15
15.50 to 15.99	16

9. Internal assessment marks will reflect as separate head of passing at the summative examination.
10. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

**Second MBBS Practical Mark's Structure
Internal Assessment Examinations**

(Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards)

Subject : MICROBIOLOGY Practical										
Seat No.	I Term					II Term				
	Gram Stain	P.S. for M.P.	Journal/Log book	Viva	Total	Z-N stain	Stool - Routine microscopy	Journal/Log book	Viva	Total
Max. Marks	10	10	10	20	50	10	10	10	20	50

Second MBBS Practical Mark's Structure (Prelim)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: MICROBIOLOGY										
Practical							Oral/Viva			Total
Seat No.	Gram/ Z-N staining	P.S. for M.P./ Stool –routine microscopy	Use of PPE/ Hand hygiene	Interpretation of reports	Journal/ Log book	Total	Viva-I	Viva-II	Total	Practical & Oral (F + I)
Max. Marks	15	15	10	20	10	70	15	15	30	100

Second MBBS Practical Mark's Structure (M.U.H.S Examination)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: MICROBIOLOGY										
Practical							Oral/Viva			Total
Seat No.	Gram/ Z-N staining	P.S. for M.P./ Stool –routine microscopy	Use of PPE/ Hand hygiene	Interpretation of reports	Journal/ Log book	Total	Viva-I	Viva-II	Total	Practical & Oral (F + I)
	A	B	C	D	E	F	G	H	I	J
Max. Marks	15	15	10	20	10	70	15	15	30	100

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : Second MBBS <i>(applicable w.e.f. September 2021 & onwards examinations)</i>	2. Subject Code :
3. Subject (PSP) : MICROBIOLOGY (TT) :	
4. Paper : I 5. Total Marks : 100 6. Total Time : 3 Hrs.	7. Remu. (Rs) : Rs. 300
	8. Remu. (Rs) : Rs. 350/-
9. Web Pattern : [] 10. Web Skeleton : [] 11. Web Syllabus : []	12. Web Old QP : []

Instructions:	SECTION "A" MCQ
1) Put <input type="checkbox"/> in the appropriate box below the question number once only.	
2) Use blue ball point pen only.	
3) Each question carries One mark .	
4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.	

SECTION "B"		
Instructions:	1) Use blue/black ball point pen only.	
	2) Do not write anything on the blank portion of the question paper . If written anything, such type of act will be considered as an attempt to resort to unfair means.	
	3) All questions are compulsory .	
	4) The number to the right indicates full marks.	
	5) Draw diagrams wherever necessary.	
	6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.	
	7) Use a common answerbook for all sections.	
SECTION "B" (40 Marks)		
2. Short Answer Questions	(AETCOM 2.5, 2.6, 2.7) (compulsory)	(7x1=07)
a)		
3. Short Answer Questions	(Answer Any 3 out of 4)	(7x3=21)
a) b) c) d)		
4. Structured Long Answer Questions	(Compulsory)	(12x1=12)
a)		
5. Short Answer Questions	(Answer Any 4 out of 5)	(7x4=28)
a) b) c) d) e)		
6. Structured Long Answer Questions	(Compulsory)	(12x1=12)
a)		

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : Second MBBS <i>(applicable w.e.f. September 2021 & onwards examinations)</i>	2. Subject Code :
3. Subject (PSP) : MICROBIOLOGY (TT) :	
4. Paper : II	5. Total Marks : 100
	6. Total Time : 3 Hrs.
	7. Remu. (Rs) : Rs. 300/-
	8. Remu. (Rs) : Rs. 350/-
9. Web Pattern : []	10. Web Skeleton : []
	11. Web Syllabus : []
	12. Web Old QP : []

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x1 = 20)
- a) b) c) d) e) f) g) h) i) j)
- k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.
- 7) Use a common answerbook for all sections.

SECTION "B"

2. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)
- a) b) c) d) e)
3. Structured Long Answer Questions (Compulsory) (12x1=12)
- a)
4. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)
- a) b) c) d) e)
5. Structured Long Answer Questions (Compulsory) (12x1=12)
- a)

Competency Based Medical Education

Year: *Second MBBS*

Subject: *Microbiology*

Learning Resource Material

Books recommended:

1. Textbook of Microbiology – R. Ananthanarayan C. K. Jayaram Panikar
2. A Textbook of Microbiology – P. Chakraborty
3. Textbook of Medical Microbiology – Rajesh Bhatia & Itchpujani
4. Textbook of Medical Microbiology – Arora and Arora
5. Textbook of Medical Parasitology – C. K. Jayaram Panikar
6. Textbook of Medical Parasitology – Arora and Arora
7. Textbook of Medical Parasitology – S.C.Parija
8. Microbiology in clinical practice – D. C. Shanson
9. A Textbook of Parasitology – Dr. R.P. Karyakarte and Dr. A.S. Damle
10. Essentials of Medical Microbiology – Apurba shashtry

Reference books:

1. Mackie McCartney practical Medical Microbiology- Colle JG, Fraser AG
2. Principles of Bacteriology, Virology & Immunology vol. 1, 2, 3, 4, 5-
Topley Wilsons
3. Medical Mycology (Emmons)- Kwon – Chung
4. Review of Medical Microbiology (Lange)- Jawetz
5. Immunology- Weir DM
6. Medical Microbiology- David Greenwood, Richard Stack, John Pentherer
7. Parasitology- KD Chatterjee
8. Medical virology- Timbury MC
9. Mackie McCartney Medical, Microbiology vol.1- Duguid JP
10. Microbial infections- Marmion BP, Swain RHA
11. Bailey & Scott's Diagnostic Microbiology
12. Textbook of Mycology – Jagdish Chander

Maharashtra University of Health Sciences Nashik



MICROBIOLOGY LOGBOOK
For
PHASE II MBBS STUDENTS
AS PER
COMPETENCY BASED CURRICULUM

First Edition: 2020

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Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize “**Health for all**” as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching learning strategies for the same. With this goal in mind, early clinical exposure, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency Based curriculum.

Name of the College

Admission Year : _____

CERTIFICATE

This is to certify that,

Mr/Ms. _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for Phase II MBBS Competency Based Curriculum in the subject of Microbiology.

Date: ___/___/_____

Place: _____

Teacher-in-Charge

**Professor and Head
Department of Microbiology**

Instructions

- 1) This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II MBBS students in the subject of Microbiology.
- 2) Students are instructed to keep their logbook entries up to date.
- 3) Students are expected to write minimum 1 reflections on Self-Directed Learning (SDL).
- 4) Students also have to write reflections on AETCOM Modules – 2.5, 2.6 and 2.7.
- 5) Reflections should be structured using the following guiding questions:
 - What happened? (What did you learn from this experience)
 - So what? (What are the applications of this learning)
 - What next? (What knowledge or skills do you need to develop so that you can handle **this type of situation?**)
- 6) The logbook assessment will be based on multiple factors like
 - Attendance
 - Active participation in the sessions,
 - Timely completions
 - Quality of write up of reflections
 - Overall presentation

INDEX

Sr. No	Description	Page No's	Status	Signature of Teacher
			Complete/ Incomplete	
1	Self-Directed Learning, skill assessment, participation in Group discussions			
2	*AETCOM Module No. 2.5, 2.6, 2.7			
3	Attendance Records			
4	Records of Internal Assessment			

*AETCOM – Competencies for IMG, 2018, Medical Council of India.

Reflection on Self-directed learning Experience

Topic:

Date:

Signature of Teacher-in- charge

Reflection on Self-directed learning Experience

Topic:

Date:

Signature of Teacher-in- charge

Section 2

Reflection on AETCOM Module – 2.5

Topic:

Date:

Signature of Teacher-in- charge

Reflection on AETCOM Module – 2.6

Topic:

Date:

Signature of Teacher-in- charge

Reflection on AETCOM Module - 2.7

Topic:

Date:

Signature of Teacher-in-charge

Section 3

Section 3A: Attendance Record of the Student

S. No	Term	Theory (%)	Practical (%)	Signature of student	Signature of Teacher
A	I Term				
B	II Term				
C	III Term				
D	Overall attendance				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

SECTION 3B: Details of attending extra classes [For poor attendance (if any)]

S. No	Date	Period	Total hours	Signature of Student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Section 4
Records of Internal Assessment Examinations

Sr. No	Exam no	Theory	Practical including Viva	Signature of student	Signature of Teacher
1	I Internal Assessment	/50	/50		
2	II Internal Assessment	/50	/50		
3	III Internal Assessment	/200	/100		
4	Internal assessment (1+2+3)	/100	/100		
5	Betterment exam (If Any)	/200	/100		
6	Final Internal Assessment	/100	/100		

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Competency Nos.	Topics & Subtopics-	
2.32	Forensic Pathology - ability to exchange information by verbal, or nonverbal communication to the peers, family members, law enforcing agency and judiciary	LECTURE-01
3.1	Clinical Forensic Medicine-Identification	LECTURE-03
3.2	Clinical Forensic Medicine-Identification	Small group teachings/tutorials/ Integrated teaching/Practicals-05
3.27	Clinical Forensic Medicine-Abortion and MTP act	LECTURE-00
3.28	Clinical Forensic Medicine-criminal abortion	Small group teachings/tutorials/ Integrated teaching/Practicals-02
3.32	Clinical Forensic Medicine- 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	Small group teachings/tutorials/ Integrated teaching/Practicals-02
4.1	Medical Jurisprudence (Medical Law and ethics)- intro	LECTURE-03
4.2	Medical Jurisprudence (Medical Law and ethics)- Code of Medical Ethics 2002 conduct	Small group teachings/tutorials/ Integrated teaching/Practicals-05
4.3	Medical Jurisprudence (Medical Law and ethics)- functions and role of Medical Council of India and State Medical Councils	SDL-1
4.4	Medical Jurisprudence (Medical Law and ethics)-medical register	
4.5	Medical Jurisprudence (Medical Law and ethics)- Rights/privileges of a medical practitioner, penal erasure, infamous conduct, disciplinary Committee, disciplinary procedures, warning notice and penal erasure	
4.6	Medical Jurisprudence (Medical Law and ethics)- Laws in Relation to medical practice and the duties of a medical practitioner towards patients and society	
4.7	Medical Jurisprudence (Medical Law and ethics)-HIV	
4.8	Medical Jurisprudence (Medical Law and ethics)-CPA	
4.9	Medical Jurisprudence (Medical Law and ethics)-NHRC	
4.10	Medical Jurisprudence (Medical Law and ethics)- communication between doctors, public and media	
4.11	Medical Jurisprudence (Medical Law and ethics)-Euthansia	
4.12	Medical Jurisprudence (Medical Law and ethics)-stem cell research	
4.17	Medical Jurisprudence (Medical Law and ethics)- thical Principles: Respect for autonomy, nonmalfeasance, beneficence & justice	
4.22	Medical Jurisprudence (Medical Law and ethics)Hippocratic oath	
4.23	Medical Jurisprudence (Medical Law and ethics)- modified Declaration of Geneva	
4.25	Medical Jurisprudence (Medical Law and ethics)-clinical research	
4.26	Medical Jurisprudence (Medical Law and ethics)-ethical committee	
4.27	Medical Jurisprudence (Medical Law and ethics)-ethical guidelines	
6.1	Forensic Laboratory investigation in medical legal practice	SDL-01

Competency Nos.	Topics & Subtopics-	
	Term –II	
8.1	Toxicology: General Toxicology-History	SDL-01
8.2	Toxicology: General Toxicology-various definition	LECTURE-03 Small group teachings/tutorials/ Integrated teaching/Practicals-11
8.3	Toxicology: General Toxicology-types of poisons and diagnosis in livings and dead	
8.4	Toxicology: General Toxicology-NDPS act	
8.5	Toxicology: General Toxicology-autopsy in poisoning and sample preservation	
8.6	Toxicology: General Toxicology-common poison encounter in India	
8.7	Toxicology: General Toxicology-bed side test	
8.8	Toxicology: General Toxicology-general treatment of poisoning	
8.9	Toxicology: General Toxicology- procedure of intimation of suspicious cases or actual cases of foul play to the police	
8.10	Toxicology: General Toxicology- general principles of Analytical Toxicology	
9.1	Toxicology : Chemical Toxicology-caustic inorganic and organic	
9.2	Toxicology : Chemical Toxicology-phosphorus iodine and barium	
9.3	Toxicology : Chemical Toxicology-Heavy metals	
9.4	Toxicology : Chemical Toxicology—ethanol	
9.5	Toxicology : Chemical Toxicology- agricultural poison	
9.6	Toxicology : Chemical Toxicology-amonnia, CO, HCN, MIC and tear gas	
10.1	Toxicology : Pharmaceutical Toxicology-CNS depressants, cardiovascular poisons	
11.1	Toxicology-Snake Bite	
12.1	Toxicology-management of drug abuse	
13.2	Toxicology-Workman compensation in Poisoning.	
14.7	Skills in Forensic Medicine & Toxicology- Demonstrate & identify that a particular stain is blood and identify the species of its origin	Small group teachings/tutorials/ Integrated teaching/Practicals-01
14.8	Skills in Forensic Medicine & Toxicology- Demonstrate the correct technique to perform and identify ABO & RH blood group of a person	Small group teaching sing/Practicals-01

Course Content
III/I MBBS (from October 2021)
Subject: Forensic Medicine & Toxicology
Theory / Practical

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page nos. 228 -251)

1. Total Teaching hours : 75
2. A. Lectures(hours):25 B. Self-directed learning (hours) :5
- C. Clinical Postings (hours):
- D. Small group teachings/tutorials/Integrated teaching/Practicals(hours): **45**

Term I/II

Competency Nos.	Topics & Subtopics	
1.8	General Information Describe the latest Decisions/notifications/resolutions/ circulars/ standing orders related to medico-legal practice issued by Courts/Government authorities	Lectures- 01 Practical/ Small group Tech. etc.- 03
1.9	General Information- Medical documentation	
1.10	General information-Cause of Death as per ICD 10	
1.11	General Information-write correct cause of death as per ICD 10	
4.19	MEDIAL JURISPRUDENCE- (Medical Law and ethics)-Consent	Lectures- 04 Practical/ Small group Tech. etc.- 08
4.18	Medical Jurisprudence (Medical Law and ethics-Negligence	
4.13	Medical Jurisprudence - social aspect of assault, rape, suicide and homicide	
4.14	Medical Jurisprudence challenges in managing Med-leg cases	
4.15	Medical Jurisprudence (principle in handling pressure in MLC)	
4.16	Medical Jurisprudence – Bioethics	
4.20	Medical Jurisprudence (Mallinging, Therapeutic misadventure, human experiment.	
4.21	Medical Jurisprudence (product liability and Indemity insurance	
4.24	Medical Jurisprudence (Medical Law and ethics-Rights of RMP	
4.28	Medical Jurisprudence (Medical Law and ethics-laws related to medical practice	
4.29	Medical Jurisprudence (Medical Law and ethics- ability to communicate with media public and doctors	
4.30	Medical Jurisprudence (Medical Law and ethics- ability to conduct research	
3.3	Clinical forensic medicine-Mechanical Injuries	Lectures- 08 Practical/ Small group Tech. etc.- 5
3.4	Clinical forensic medicine-Mechanical Injuries	
3.5	Clinical forensic medicine-Mechanical Injuries	
3.6	Clinical forensic medicine-Mechanical Injuries	
3.7	Clinical forensic medicine-Mechanical Injuries	
3.8	Clinical forensic medicine-Mechanical Injuries	
3.9	Clinical forensic medicine-Mechanical Injuries- firearm	
3.10	Clinical forensic medicine-Mechanical Injuries-firearm	

Competency Nos.	Topics & Subtopics	
3.11	Clinical forensic medicine-Mechanical Injuries-regional injuries	
3.12	Clinical forensic medicine-Mechanical Injuries-regional injuries	
2.25	Forensic pathology-types of injuries and medicolegal aspect of injuries.	
2.14	Forensic pathology-examination of clothing, preservation of viscera on post-mortem examination for chemical	
2.15	Forensic pathology- Special protocol in custodial death	
2.16	Forensic pathology- Mutilated charred bones	Practical/ Small group Tech. etc.- 02
2.17	Forensic pathology-exhumation	
2.18	Forensic pathology=CSI	
2.19	Forensic pathology-Anaesthetic death	
2.21	Forensic Pathology-Mechanical asphyxia	Lectures- 03 Practical/ Small group Tech. etc.- 02
2.22	Forensic Pathology-Mechanical asphyxia	
2.23	Forensic Pathology-Mechanical asphyxia	
2.24	Forensic Pathology-Mechanical asphyxia	
2.26	Forensic Pathology-starvation	
2.31	Forensic Pathology- autopsy in custody, med negligence NHRC	
2.33	Forensic Pathology-Mass disaster	
3.13	Clinical forensic medicine-Sexual offences	Lectures- 04 Practical/ Small group Tech. etc.- 04
3.14	Clinical forensic medicine-Sexual offences	
3.15	Clinical forensic medicine-Sexual offences	
3.16	Clinical forensic medicine-Sexual offences	
3.17	Clinical forensic medicine-sexual perversion	
3.18	Clinical forensic medicine-Hymen, virginity, legitimacy	
3.19	Clinical forensic medicine-pregnancy	
3.20	Clinical forensic medicine-disputed paternity	
3.21	Clinical forensic medicine-Impotence and sterility	Lectures- 02 Practical/ Small group Tech. etc.- 02
3.22	Clinical forensic medicine-Sexual offences	
2.27	Forensic pathology- infanticide	
2.28	Forensic pathology- IUD, Still birth Hydrostatic test,	
3.23	Clinical forensic medicine-AI, Sterilization	
3.24	Clinical forensic medicine-vasectomy and tubectomy	
3.25	Clinical forensic medicine-national family health survey	Lectures- 02 Practical/ Small group Tech. etc.- 02
3.26	Clinical forensic medicine-ART	
3.29	Clinical forensic medicine-Battered baby	
3.30	Clinical forensic medicine-torture and injuries	
3.31	Clinical forensic medicine- human rights	
3.33	Clinical forensic medicine-dealing with Victims of torture	
5.1	Forensic psychiatry	
5.2	Forensic psychiatry	
5.3	Forensic psychiatry	
5.4	Forensic psychiatry	
5.5	Forensic psychiatry	

Competency Nos.	Topics & Subtopics	
5.6	Forensic psychiatry	
6.2	Forensic science lab	Lectures- 00 Practical/ Small group Tech. etc.- 02
6.3	Forensic science lab	
7.1	Emerging technologies such as DNA brain mapping, polygraph, facial reconstruction etc	
14.1	Skills in Forensic Medicine & Toxicology-Injury report	
14.2	Skills in Forensic Medicine & Toxicology-clinical examination in poisoning	Practical/ Small group Tech. etc.- 15
14.3	Skills in Forensic Medicine & Toxicology-collection and despatch of samples in poisoning	
14.4	Skills in Forensic Medicine & Toxicology-age estimation	
14.5	Skills in Forensic Medicine & Toxicology- conduct PM examination and prepare PM report	
14.6	Skills in Forensic Medicine & Toxicology-demostrate stain hair,semen	
14.9	Skills in Forensic Medicine & Toxicology-skeletal remains	
14.10	Skills in Forensic Medicine & Toxicology-demostrate specimen of injury	
14.11	Skills in Forensic Medicine & Toxicology- weapon report	
14.12	Skills in Forensic Medicine & Toxicology- Bullet and cartridge	
14.13	Skills in Forensic Medicine & Toxicology-estimate age of foetus	
14.14	Skills in Forensic Medicine & Toxicology-accused of rape	
14.15	Skills in Forensic Medicine & Toxicology-medicolegal report of victim of sexual assault	
14.16	Skills in Forensic Medicine & Toxicology- Drunkenness report	
14.17	Skills in Forensic Medicine & Toxicology-identify common poison	
14.18	Skills in Forensic Medicine & Toxicology- medicolegal report of person in judicial custody,	
14.19	Skills in Forensic Medicine & Toxicology- identify Histopathology common slide such as MI Pnemonnia	
14.20	Skills in Forensic Medicine & Toxicology-To record and certify Dying declaration	
14.21	Skills in Forensic Medicine & Toxicology- To preserved DNA sample	
14.22	Skills in Forensic Medicine & Toxicology- To give expert evidence in court of law	

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: III-II MBBS Subject: Forensic Medicine

Paper	Section	Topics
Only one paper	A	MCQs on all topics of the paper I
		ALL SYLLABUS OF FORENSIC MEDICINE AND TOXICOLOGY,
II Not applicable	A	MCQs on all topics of the paper II –Not applicable
		Not applicable

**MBBS Second & Third Phase Part -I
Internal Assessment**

Subject: Forensic Medicine & Toxicology

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase	I-Exam (At the end of first term)			II-Exam (At the end of second term)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 5Marks for Journal & Log Book	Total Marks
II MBBS	50	40+10	100	50	40+10	100

Phase	I-Exam (At the end of first term)			II-Exam (preliminary)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
III/I MBBS	50	40+10	100	100	90+10	200

1. There will be **4** internal assessment examinations in Forensic medicine. The structure of the Preliminary internal assessment theory examinations should be similar to the structure of University examination.
2. It is mandatory for the students to appear for all the internal assessment Examinations in the respective phases. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.

3. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
4. Internal assessment marks for theory will be out of 250 and practical will be out of 250.
5. Reduce total theory internal assessment to 40 marks and total practical internal assessment to 40 marks. Students must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) to be eligible for appearing University examination

6. Conversion Formula for calculation of marks in internal assessment examinations

	First IA II Phase	Second IA II Phase	Third IA III Phase Part -I	(Prelim) III Phase Part -I	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% separately in Theory & Practical, 50% Combined)	
Theory	50	50	50	100	250	<u>Total marks obtained</u> 6.25	16 (Minimum)	Total of Theory + Practical Must be 40.
Practical	50	50	50	100	250	<u>Total marks obtained</u> 6.25	16 (Minimum)	

7. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
15.01 to 15.49	15
15.50 to 15.99	16

8. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical
Separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.
9. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

Second MBBS Practical Mark's Structure

Internal Assessment Examinations

(Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards)

TERM END INTERNAL ASSESSMENT EXAMINATION-AUTONOMY AT INSTITUTE LEVEL.

III-I MBBS Practical Mark's Structure MUHS

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: Forensic Medicine & Toxicology																
Practical												Oral/Viva				Total
Seat No.	Age Estimation	MCCD	Injury report	Survivor of sexual assault report	Drunkness report/accused of sexual assault	Weapon report	Foetus examination	Bone Exam	Spots-specimen /slide/ DNA preservation	Journal marks	Total	Forensic pathology	Toxicology, FSL,	Med juris, Forensic psychiatry	Total	Practical & Oral (K + O)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Max. Marks	8	8	8	8	6	6	5	5	16	5	75	9	8	8	25	100

III-I MBBS Practical Mark's Structure (Prelim)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: Forensic Medicine																
Practical												Oral/Viva				Total
Seat No.	Age Estimation	MCCD	Injury report	Survivor of sexual assault report	Drunkenness report/ac cused of sexual assault	Weapon report	Foetus examination	Bone Exam	Spots-specimen/slide/DNA preservation	Journal marks	Total	Forensic pathology	Toxicology , FSL,	Med juris, Forensic psychiatry	Total	Practical & Oral
	A	B	C	D	E	F	G	H	I	J		K	L	M		
Max. Marks	8	8	8	8	6	6	5	5	15	10	79	7	7	7	100	

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : III- I MBBS <i>(applicable w.e.f. Oct. 2022 & onwards examinations)</i>	2. Subject Code :
3. Subject (PSP) : Forensic Medicine & Toxicology (TT) :	
4. Paper : I	5. Total Marks : 100
6. Total Time : 3 Hrs.	7. Remu. (Rs) : Rs. 300/-
	8. Remu. (Rs) : Rs. 350/-
9. Web Pattern : []	10. Web Skeleton : []
11. Web Syllabus : []	12. Web Old QP : []

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SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
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SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x1 = 20)
- a) b) c) d) e) f) g) h) i) j)
- k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
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- 4) The number to the **right** indicates **full marks**.
- 5) Draw diagrams **wherever** necessary.
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- 7) Use a common answerbook for all sections.

SECTION "B"

- | | | |
|-------------------------------------|---------------------------|-----------|
| 2. Short Answer Questions | (AETCOM(3.2)(compulsory) | (7x1=07) |
| a) | | |
| 3. Short Answer Questions | (Answer Any 3 out of 4) | (7x3=21) |
| a) b) c) d) | | |
| 4. Structured Long Answer Questions | (Compulsory) | (12x1=12) |
| a) | | |
| 5. Short Answer Questions | (Answer Any 4 out of 5) | (7x4=28) |
| a) b) c) d) e) | | |
| 6. Structured Long Answer Questions | (Compulsory) | (12x1=12) |
| a) | | |

Books recommended :-

1. Modi's Textbook of Medical Jurisprudence and Toxicology
Ed. 22, 1999, by B.V. Subramanyam, Butterworth
2. The Essentials of Forensic Medicine & Toxicology by K.S. Narayan Reddy
3. Parikh's Textbook of Medical Jurisprudence and Toxicology.
4. Text Book of Forensic Medicine – J.B. Mukherjee VOL 1 & 2
5. Principles of Forensic Medicine - A. Nandy
6. Toxicology at a Glance by Dr S.K. Singhal
7. Bernard Knight et. All: Cox's Medical Jurisprudence & Toxicology

Reference books

1. Russell S. Fisher & Charles S. Petty: Forensic Pathology
2. Keith Simpson: Forensic Medicine
3. Jurgen Ludwig: Current Methods of autopsy practice.
4. Gradwohl – Legal Medicine
5. A Doctors Guide to Court – Simpson
6. Polson C.J. : The essentials of Forensic Medicine
7. Adelson, L.: The Pathology of Homicide.
8. Atlas of Legal Medicine (Tomro Watonbe)
9. Sptiz, W.U. & Fisher, R.S.: Medico-legal Investigation of Death.
10. A Hand Book of Legal Pathology (Director of Publicity)
11. Taylor's Principles & Practice of Medical Jurisprudence.
Edited by A.Keith Mant, Churchill Livingstone.
12. Ratanlal & Dhirajlal, The Indian Penal Code; Justice Hidayatullah & V.R. Manohar
13. Ratanlal & Dhirajlal, The Code of Criminal procedure; Justice Hidayatullah & S.P. Sathe
14. Ratanlal & Dhirajlal, The Law of Evidence; Justice Hidayatullah & V.R. Manohar
15. Medical Law & Ethic in India – H.S. Mehta
16. Bernard Knight : Forensic Pathology
17. Code of medical ethics : Medical Council of India, approved by Central Government, U/S 33 (m) of IMC Act, 1956 (Oct 1970)
18. Krogman, W.M.: The human skeleton in legal medicine.
19. FE Camps, JM Cameren, David Lanham : Practical Forensic Medicine
20. V.V. Pillay : Modern Medical Toxicology.

Maharashtra University of Health Sciences Nashik



**FORENSIC MEDICINE LOGBOOK For
PHASE II MBBS STUDENTS AS PER COMPETENCY BASED
CURRICULUM**

First Edition: 2019

Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize **“Health for all”** as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching learning strategies for the same. With this goal in mind, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency Based curriculum.

Name of the College

Admission Year : _____

CERTIFICATE

This is to certify that,

Mr/Ms. _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for Phase I MBBS Competency Based Curriculum in the subject of **FORENSIC MEDICINE AND TOXICOLOGY**.

Date: ___/___/_____

Place: _____

Teacher Incharge

Professor and Head
Department of FORENSIC MEDICINE AND TOXICOLOGY

Instructions

1) This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II MBBS students in the subject of Pharmacology.

2) Students are instructed to keep their logbook entries up to date.

3) Students are expected to write minimum 2 reflections on any two activities each of Clinical Forensic Medicine skills & Self-Directed Learning (SDL).

4) Students also have to write reflections on AETCOM Module -----) Reflections should be structured using the following guiding questions:

- What happened? (What did you learn from this experience)
- So what? (What are the applications of this learning)
- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

5) The logbook assessment will be based on multiple factors like

- Attendance
- Active participation in the sessions
- Timely completions
- Quality of write up of reflections
- Overall presentation

INDEX

Sr. No	Description	Page No's	Status Complete/ Incomplete	Signature of Teacher
1	Clinical Forensic Medicine Skills			
2	Self-Directed Learning, Seminars, Projects, Quizzes			
3	AETCOM Module -----			
4	Attendance Records			
5	Records of Internal Assessment			

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

Record of Clinical Pharmacology Skills

S.No	Skill	Setting	Correlation	Date	Signature of Teacher
1	Skills in Forensic Medicine & Toxicology-clinical examination in poisoning				
2	Skills in Forensic Medicine & Toxicology-collection and despatch of samples in poisoning				
3	Skills in Forensic Medicine & Toxicology-demonstrate stain hair, semen				
4	Skills in Forensic Medicine & Toxicology- Bullet and cartridge				
5	Skills in Forensic Medicine & Toxicology-medicolegal report of person in judicial custody,				
6	Skills in Forensic Medicine & Toxicology- identify Histopathology common slide such as MI Pneumonia				
7	Skills in Forensic Medicine & Toxicology-To record and certify Dying declaration				

8	Skills in Forensic Medicine & Toxicology- To preserved DNA sample				
9	Skills in Forensic Medicine & Toxicology- To give expert evidence in court of law				
10	Skills in Forensic Medicine & Toxicology- Demonstrate & identify that a particular stain is blood and identify				
11	Skills in Forensic Medicine & Toxicology- Demonstrate the correct technique to perform and identify ABO & RH blood group of a person				

Reflection on Clinical FORENSIC MEDICINE Skills

Signature of Teacher-in- charge

Topic:

Date:

Reflection on Clinical FORENSIC MEDICINE Skills

Signature of Teacher-in- charge

Topic:

Date:

Reflection on Clinical FORENSIC MEDICINE Skills

Signature of Teacher-in- charge

Topic:

Date:

2. Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes

Sr. No	Self Directed Learning, Seminars, Tutorials, Projects, Quizzes	Date	Signature of Teacher

Reflection on self directed learning activities

Signature of Teacher-in- charge

Topic:

Date:

Reflection on self directed learning activities

Signature of Teacher-in- charge

Topic:

Date:

Reflection on self directed learning activities

Signature of Teacher-in- charge

Topic:

Date:

3: AETCOM Module

Signature of Teacher-in- charge

Reflection on AETCOM module

Signature of Teacher-in- charge

Topic:

Date:

Reflection on AETCOM module

Signature of Teacher-in- charge

Topic:

Date:

4A: Attendance Record of the Student

Sr. No	Term	Theory (%)	Practical (%)	Signature of the Student	Signature of the Teacher
A	I Term				
B	II Term				
C	III term				
D	IV TERM				
E	OVER ALL ATTENDANCE				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

SECTION 4B: Details of attending extra classes [For poor attendance (if any)]

S.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Section 5. Records of Internal Assessment Examinations

Records of Internal Assessment examinations

S.No	Exam	Theory	Practical including viva	Signature of student	Signature of Teacher
1	I Internal Assessment	/ 50	/ 50		
2	II Internal Assessment	/ 50	/ 50		
3	III Internal Assessment	/ 50	/ 50		
4	IV Internal Assessment (Prelim)	/100	/100		
4	Internal Assessment marks	/ 250	/ 250		
5	Betterment exam	/ 100	/ 100		
6	Final Internal Assessment	/ 250	/ 250		

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Course Content

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 ; page no.41-59)

Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards

Subject: Community Medicine

Year: First MBBS

Competency No. CM	Topics & subtopics
	Health care of the communtiy
117.1	Health care to community
	Visit to primary/secondary health facility
	Role of physician in health care delivery- Integration with AETCOM module 1.1 What does it mean to be doctor?
17.2	Community diagnosis
17.3	Primary Health Care- Def, Principles
17.4	National Health Policies , MDGs
	SDL- Current national / stale level status of health indicators
17.5	Health Care delivery in India
	Nutrition
5.1	Common sources of various nutrients

	Demonstration: Foods we eat & their nutritive values
	Special nutritional requirements according to age, sex, activity, physiological conditions
	SDL- Foods customs in our families for special groups such as children/ pregnant/lactating women/ill persons (data collection by interviewing 5 homemakers)
5.2	Nutritional assessment at individual level- DOAP
	Nutritional assessment at family and community level -DOAP
5.3	Common nutritional deficiency diseases- Epidemiology , prevention and control
5.4	Diet planning at individual level
	Diet planning at family level
5.5	Nutritional surveillance and rehabilitation
	Visit to Nutritional rehabilitation centre
	Nutrition education
5.6	National Nutritional Policy , National Nutritional Programs
5.7	Food hygiene , food adulteration
	Demonstration of simple tests to identify food adulteration
5.8	Food fortification , food additives
	Concept of Health and Disease
1.1	Concept of Public Health
1.2	Concept , definition , determinants of health
	Determinants of health- Group discussion
1.3	Epidemiological triad , multifactorial causation of disease
	SDL-Identification of multiple causative factors of 2 common diseases(interview in wards/ family visit)

1.4	Natural history of disease
1.5	Levels of Prevention
1.6	Health education , IEC, BCC
1.7	Indicators of health
	Exercise on calculation of indicators
1.8	Demographic profile of India
	Exercise on calculation of demographic indicators , fertility rates
	SDL- Demographic trends in India
1.9	Communication skills in Health
	DOAP-Verbal/non verbal communication
	Empathy- What does it mean to be patient?
	AETCOM module 1.2
1.10	Doctor patient relationship
	SDL- Determinants of doctor patient relationship(Collection of data from patients/ relatives)
	Case discussions – Integration with AETCOM module 1.3
	Principles of health promotion and education
4.1	Methods of health education
	Demonstration of various methods of health education
	Improving communication, barriers in communication- integration with AETCOM module 1.4
4.2	Organization of health educational and counselling activities for individual & family
	Organization of counselling activity in ward/OPDs
	Organization of community based health educational activity(community/school)

4.3	Evaluation of health education & promotion program
	SDL- Preparation of tool for evaluation
	Conducting evaluation of health education & promotion program

Note:

1. The observations/ reflections of family / hospital visits , DOAP sessions , Self directed learning activities (SDL) , practicals should be entered in the log book immediately after the assignment.
2. The observer / facilitator / teacher will provide the written brief feedback in the log book for the learner related to the competencies.

ANNEXURE 6

COURSE CONTENT

(Total teaching hours for Otorhinolaryngology = 25+40+5 = 70)

Lectures:

MBBS phase III-

Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Anatomy and Physiology of ear, nose, throat, head & neck				
			Lecture: 1		1
		EN 1.1 AN40.1 AN40.2 AN40.3	Describe the Anatomy & physiology of ear Describe & identify the parts, blood supply and nerve supply of external ear Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube Describe the features of internal ear	Anatomy	
			Lecture: 2		1
		EN 1.1 AN37.1 AN37.2 AN37.3	Describe the Anatomy & physiology of Nose, Throat Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply Describe location and functional anatomy of paranasal sinuses Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	Anatomy Physiology	
		PY10.13	Describe and discuss perception of smell and taste sensation		
			Lecture: 3		1
		EN 1.1 EN 1.2	Describe the Anatomy & physiology of Head and Neck Describe the pathophysiology of common diseases in Head and Neck	Anatomy	
2.	Clinical Skills				
			Lecture: 4		1
		EN 2.11 EN 2.15	Describe and identify by clinical examination malignant & pre-malignant ENT diseases Describe the national programs for prevention of deafness, cancer, noise & environmental pollution	Community Medicine	
3.	Management of diseases of ear, nose & throat				
			Lecture: 5		1
		EN4.1 EN4.6 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 Otagia 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 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		

			Lecture: 6		1
		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	Paediatrics	
		PE28.4	Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM)		
		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		
			Lecture: 7		1
		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 CSOM		
		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 squamosal type of CSOM		
			Lecture: 8		1
		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		
		EN4.12	Describe the clinical features, investigations and management principles of Sudden Sensori-neural Hearing Loss		
		EN4.15	Describe the clinical features, investigations management principles of Noise Induced Hearing Loss		
			Lecture: 9		1
		EN4.18	Describe the clinical features, investigations and principles management of Facial Nerve palsy		
			Lecture: 10		1
		EN4.19	Describe the clinical features, investigations and principles of management of Vertigo		
		EN4.13	Describe the clinical features, investigations and principles of management of Otosclerosis		
		EN4.21	Describe the clinical features, investigations and principles of management of Tinnitus		
		EN4.14	Describe the clinical features, investigations and management of Sudden Sensorineural Hearing Loss		
			Lecture: 11		1
		EN4.23	Describe the clinical features, investigations and principles of management of DNS		
		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 type of Nasal Polyps		
			Lecture: 12		1
		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 Allergic Rhinitis	Paediatrics	
		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 Vasomotor Rhinitis		
		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 Acute & Chronic Rhinitis		
		PE31.1	Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children		

			Lecture: 13		1
		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 Epistaxis		
		EN4.31	Describe the clinical features, investigations and principles of management of trauma to the face & neck		
		EN4.32	Describe the clinical features, investigations and principles of management of nasopharyngeal Angiofibroma		
			Lecture: 14		1
		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 type of Acute & Chronic Sinusitis		
			Lecture: 15		1
		EN4.34	Describe the clinical features, investigations and principles of management of Tumors of Maxilla		
		EN4.35	Describe the clinical features, investigations and principles of management of Tumors of Nasopharynx		
			Lecture: 16		1
		EN4.36	Describe the clinical features, investigations and principles of management of diseases of the Salivary glands		
		EN4.37	Describe the clinical features, investigations and principles of management of Ludwig's angina		
		EN4.41	Describe the clinical features, investigations and principles of management of Acute & chronic abscesses in relation to Pharynx		
		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		
			Lecture: 17		1
		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 Acute & Chronic Tonsillitis	Paediatrics	
		PE28.1	Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis		
		PE28.2	Discuss the etio-pathogenesis of Pharyngo Tonsillitis		
		PE28.3	Discuss the clinical features and management of Pharyngo Tonsillitis		
			Lecture: 18		1
		EN4.43	Describe the clinical features, investigations and principles of management of Acute & Chronic Laryngitis	Anatomy	
		EN4.44	Describe the clinical features, investigations and principles of management of Benign lesions of the vocal cord		
		EN4.45	Describe the clinical features, investigations and principles of management of Vocal cord palsy		
		AN38.3	Describe anatomical basis of recurrent laryngeal nerve injury		
			Lecture: 19		1
		EN4.46	Describe the clinical features, investigations and principles of management of Malignancy of the Larynx & Hypopharynx		
		EN4.47	Describe the clinical features, investigations and principles of management of Stridor		
			Lecture: 20		
		DE4.1	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity	Pathology	
		DE4.2	Discuss the role of etiological factors in the formation of precancerous /cancerous lesions		

		EN4.52	Describe the Clinical features, Investigations and principles of management of diseases of Oesophagus		
			Lecture: 21		1
		EN4.53 EN3.6	Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT Observe and describe the indications for and steps involved in the skills of emergency procedures in ear, nose & throat		
			Lecture: 22		1
			Revision lecture		
			Lecture: 23		1
			Revision lecture		
			Lecture: 24		1
			Revision lecture		
			Lecture: 25		1
			Revision lecture		

Small group discussions

MBBS phase III/I-

Total Teaching hours: 40 hours

SR. NO.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
	Anatomy and Physiology of ear, nose, throat, head & neck				
1.		AN40.1	Describe & identify the parts, blood supply and nerve supply of external ear		0.5 hour
2.		AN40.2	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube		1 hour
3.		AN37.1	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply		1 hour
4.		AN38.1	Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx		0.5 hour
5.		PY10.15	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing		1 hour
6.		PY10.16	Describe and discuss pathophysiology of deafness. Describe hearing tests		0.5 hour
	General Medicine				
7.		IM24.17	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly		1.5 Hours
	Paediatrics				
8.		PE28.5	Discuss the etio-pathogenesis, clinical features and management of Epiglottitis		0.5 hour
9.		PE28.6	Discuss the etio-pathogenesis, clinical features and management of Acute laryngo-tracheo-bronchitis		0.5 hour

10.		PE28.7	Discuss the etiology, clinical features and management of Stridor in children		1 hour
11.		PE28.8	Discuss the types, clinical presentation, and management of foreign body aspiration in infants and children		1 hour
	Clinical Skills				
12.		EN 2.9	Choose correctly and interpret radiological, microbiological & histological investigations relevant to the ENT disorders X Rays of mastoid, PNS, nasopharynx, neck, thorax -Routine blood investigations, Pus-bacterial culture, sensitivity, Fungal culture and KOH mount -FNAC and biopsy		1 hour 1 hour 1 hour
13.		EN2.15	Describe the national programs for prevention of deafness, cancer, noise & environmental pollution		1.5 hour
	Management of diseases of ear, nose & throat				
14.		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		1 hour
15.		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		1.5 hour
16.		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		1.5 hours
17.		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		1.5 hour
18.		EN4.13	Describe the clinical features, investigations and principle of management of Otosclerosis		1 hour
19.		EN 4.14	Describe the clinical features, investigations and principle of management of Sudden Sensorineural Hearing Loss		1 hour

20.		EN4.15	Describe the clinical features, investigations and principle of management of Noise Induced Hearing Loss	0.5 hour
21.		EN 4.18	Describe the clinical features, investigations and principle of management of Facial Nerve palsy	1 hour
22.		EN 4.19	Describe the clinical features, investigations and principle of management of Vertigo	0.5 hour
23.		EN 4.18	Describe the clinical features, investigations and principle of management of Tinnitus	0.5 hour
24.		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 Allergic Rhinitis	1 hour
25.		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 Acute & Chronic Rhinitis	1.5 hours
26.		EN 4.30	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of epistaxis	1 hour
27.		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 Acute & Chronic Sinusitis	2 hours
28.		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 Acute & Chronic Tonsillitis	1.5 hours
29.		EN 3.5 EN 4.10 EN 4.11	Observe and describe the indications for and the steps involved in the surgical procedures in ear, nose and throat	3 hours
30.		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	1.5 hours
31.		EN4.47	Describe the clinical features, investigations and principles of management of Stridor	1 hour
32.		EN4.49	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of	1.5 hours

			management of foreign bodies in the air & food passages		
33.		EN4.53	Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT		1 hour
	Community Medicine				
34.		CM3.1	Describe the health hazards of air, water, noise, radiation and pollution		1.5 hours

Self Directed Learning

MBBS phase III/I -

Total Teaching hours: 5 hours

Sr. No.	Competencies	SUBTOPICS	AIT	TL Methods	HOURS
1.	EN1.1	Anatomy and blood supply of Tonsil		Quiz-Poster Presentation (on topic given in groups)	5 hours
2.	EN1.2	Clinical features, diagnosis and treatment of: ASOM			
3.	EN2.4	Tuning Fork Tests			
4.	EN 3.5	Complications of tonsillectomy			
5.	EN 4.24	Septoplasty –Technique, Procedure and Complications			
6.	EN 4.5	Clinical features and management Otitis media with effusion, Myringotomy			
7.	EN 4.50	Indications and Complications of Tracheostomy			

Subject:
Otorhinolaryngology
Lectures

MBBS phase III-

Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Anatomy and Physiology of ear, nose, throat, head & neck				
			Lecture: 1		1
		EN 1.1 AN40.1 AN40.2 AN40.3	Describe the Anatomy & physiology of ear Describe & identify the parts, blood supply and nerve supply of external ear Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube Describe the features of internal ear	Anatomy	
			Lecture: 2		1
		EN 1.1 AN37.1 AN37.2 AN37.3	Describe the Anatomy & physiology of Nose, Throat Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply Describe location and functional anatomy of paranasal sinuses Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	Anatomy Physiology	

		PY10.13	Describe and discuss perception of smell and taste sensation		
			Lecture: 3		1
		EN 1.1 EN 1.2	Describe the Anatomy & physiology of Head and Neck Describe the pathophysiology of common diseases in Head and Neck	Anatomy	
2.	Clinical Skills				
			Lecture: 4		1
		EN 2.11 EN 2.15	Describe and identify by clinical examination malignant & pre- malignant ENT diseases Describe the national programs for prevention of deafness, cancer, noise & environmental pollution	Community Medicine	
3.	Management of diseases of ear, nose & throat				
			Lecture: 5		1
		EN4.1 EN4.6 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 Otagia 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 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		

			Lecture: 6		1
		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	Paediatrics	
		PE28.4	Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM)		
		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		
			Lecture: 7		1
		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 CSOM		
		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 squamosal type of CSOM		
			Lecture: 8		1
		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		
		EN4.12	Describe the clinical features, investigations and management principles of Sudden Sensori-neural Hearing Loss		
		EN4.15	Describe the clinical features, investigations management principles of Noise Induced Hearing Loss		
			Lecture: 9		1
		EN4.18	Describe the clinical features, investigations and principles management of Facial Nerve palsy		

			Lecture: 10		1
		EN4.19	Describe the clinical features, investigations and principles of management of Vertigo		
		EN4.13	Describe the clinical features, investigations and principles of management of Otosclerosis		
		EN4.21	Describe the clinical features, investigations and principles of management of Tinnitus		
		EN4.14	Describe the clinical features, investigations and management of Sudden Sensorineural Hearing Loss		
			Lecture: 11		1
		EN4.23	Describe the clinical features, investigations and principles of management of DNS		
		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 type of Nasal Polyps		
			Lecture: 12		1
		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 Allergic Rhinitis		
		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 Vasomotor Rhinitis		
		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 Acute & Chronic Rhinitis		
		PE31.1	Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children	Paediatrics	

			Lecture: 13		1
		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 Epistaxis		
		EN4.31	Describe the clinical features, investigations and principles of management of trauma to the face & neck		
		EN4.32	Describe the clinical features, investigations and principles of management of nasopharyngeal Angiofibroma		
			Lecture: 14		1
		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 type of Acute & Chronic Sinusitis		
			Lecture: 15		1
		EN4.34	Describe the clinical features, investigations and principles of management of Tumors of Maxilla		
		EN4.35	Describe the clinical features, investigations and principles of management of Tumors of Nasopharynx		
			Lecture: 16		1
		EN4.36	Describe the clinical features, investigations and principles of management of diseases of the Salivary glands		
		EN4.37	Describe the clinical features, investigations and principles of management of Ludwig's angina		
		EN4.41	Describe the clinical features, investigations and principles of management of Acute & chronic abscesses in relation to Pharynx		
		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		

			Lecture: 17		1
		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 Acute & Chronic Tonsillitis	Paediatrics	
		PE28.1	Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis		
		PE28.2	Discuss the etio-pathogenesis of Pharyngo Tonsillitis		
		PE28.3	Discuss the clinical features and management of Pharyngo Tonsillitis		
			Lecture: 18		1
		EN4.43	Describe the clinical features, investigations and principles of management of Acute & Chronic Laryngitis	Anatomy	
		EN4.44	Describe the clinical features, investigations and principles of management of Benign lesions of the vocal cord		
		EN4.45	Describe the clinical features, investigations and principles of management of Vocal cord palsy		
		AN38.3	Describe anatomical basis of recurrent laryngeal nerve injury		
			Lecture: 19		1
		EN4.46	Describe the clinical features, investigations and principles of management of Malignancy of the Larynx & Hypopharynx		
		EN4.47	Describe the clinical features, investigations and principles of management of Stridor		
			Lecture: 20		
		DE4.1	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity	Pathology	
		DE4.2	Discuss the role of etiological factors in the formation of precancerous /cancerous lesions		

		EN4.52	Describe the Clinical features, Investigations and principles of management of diseases of Oesophagus		
			Lecture: 21		1
		EN4.53 EN3.6	Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT Observe and describe the indications for and steps involved in the skills of emergency procedures in ear, nose & throat		
			Lecture: 22		1
			Revision lecture		
			Lecture: 23		1
			Revision lecture		
			Lecture: 24		1
			Revision lecture		
			Lecture: 25		1
			Revision lecture		

Internal Assessment

Subject – Otorhinolaryngology

Applicable w.e.f batches admitted from 2019 and onwards

Phase		
	Theory	Practical
Second MBBS	-	EOP Practical Examination may be conducted. However, these marks shall not be added to the Internal Assessment.

3rd Year (III MBBS, PART I)						
Phase	I-Exam (March)			II-Exam Prelim (August)		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/I MBBS	50	50	100	100	100	200

Assessment in CBME is ONGOING PROCESS,

No Preparatory leave is permitted.

1. There shall be 2 internal assessment examinations in Otorhinolaryngology including Prelim.
2. The suggested pattern of question paper for internal assessment internal examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 25 (theory) + 25 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	-	-
Phase III/I	150	150
Total	150	150
Conversion out of	25	25
Conversion formula	Total marks in 2 IA theory examinations /6	Total marks in 2 IA Practical examinations /6
Eligibility criteria after conversion	10	10
	Combined theory + Practical = 25	

1. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

2. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
3. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.
4. Remedial measures

A. Remedial measures for non-eligible students

- i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be arranged.
- ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
- iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. The marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination	100	100
Conversion out of	25	25
Conversion formula	Marks in remedial theory examinations /4	Marks in remedial Practical examinations /4
Eligibility criteria after conversion	10	10
	Combined theory + Practical = 25	

B. Remedial measures for absent students:

If any of the students is absent for any of the 2 IA examinations due to any reasons, following measures shall be taken.

- i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

- ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
- iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Format for Practical Examinations

Otorhinolaryngology

Internal Assessment Practical

Seat No.				Table viva				Practical Total
	Case	OSCE 1	OSCE 2	Surgical Pathology Radiology	Instruments and Surgical Procedure	Journal	Log Book	
Max. Marks	20	5	5	5	5	5	5	50

OSCE stations checklists to be prepared so as to give more weightage to crucial steps, if skills are small two or more skills may be included in same station

OSCE stations to include any of these – Clinical skills (case/audiology), Certifiable skills, AETCOM skills

Prelims Practical

Subject: Otorhinolaryngology Practical									
Seat No.						Table Viva			Practical Total
	Case	OSCE 1 (Clinical skills)	OSCE 2 (Clinical skills)	OSCE 3 (Certifiable skills)	OSCE 4 (AETCOM skills)	Surgical Pathology Radiology	Instruments and Surgical Procedure	Journal & log book	
Max. Marks	30	10	10	10	10	10	10	10	100

MUHS Final Practical

Subject: Otorhinolaryngology Practical								
Seat No.						Table Viva		Practical Total
	Case	OSCE 1 (Clinical skills)	OSCE 2 (Clinical skills)	OSCE 3 (Certificate skills)	OSCE 4 (AETCOM skills)	Surgical Pathology Radiology	Instruments and Surgical Procedure	
Max. Marks	30	10	10	10	10	15	15	100

Internal Assessment Theory Examination (I)

Otorhinolaryngology

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10 Marks)

1. Multiple Choice Questions (Total 10 MCQ of One mark each) (1x10=10)
- a) b) c) d) e) f) g) h) i) j)

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.
- 6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions structured clinical questions (15 x1=15)
- a)
- 3.Short Answer Questions (Any 5 out of 6),(including 1 on AETCOM) (5 x 5=25)
- a) b) c) d) e) f)

MUHS Final Theory Examination

Otorhinolaryngology

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK FORMAT / SKELETON OF QUESTION PAPER

Instructions:

SECTION "A" MCQ

- 5) Put in the appropriate box below the question number once only.
- 6) Use blue ball point pen only.
- 7) Each question carries **One mark**.
- 8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (1x20=20)
- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **whenever** necessary.
 - 6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions (Any 2 out of 3) structured clinical questions (15 x 2=30)
- a) b) c)
3. Short Answer Questions (All 3),(including 1 on AETCOM) (5 x 3=15)
- a) b) c)

SECTION C (40 Marks)

- 4 Long answer questions (15x1=15)
- a)
- 5 Short answer questions(any 4 out of 5) (Clinical Reasoning) (5x4=20)
- a) b) c) d) e)

Section wise distribution of topics for Prelim & MUHS Annual Examination

Year: **III-I MBBS** Subject: **_Otorhinolaryngology**

Paper	Section	Topics
1	A	MCQs on all topics of Otorhinolaryngology Basic Science (2), Otology (6), Rhinology (6), Head Neck Laryngology (6)
	B Basic Sciences, Recent Advances, Otology	Anatomy and Physiology of Ear, Nose, Throat & Head and Neck; Recent Advances; Audiology and Hearing loss; Vestibular System; Diseases of External Ear and Middle Ear; Eustachian Tube and its disorder; Cholesteatoma, Chronic Otitis media and Complications; Otosclerosis; Facial Nerve and its Disorder; Meniere's Disease; Tumours of External Ear, Middle Ear and Mastoid; Deaf Child & Rehabilitation of Hearing Impaired
	C Rhinology, Laryngology, Head and Neck	Diseases of External Nose; Nasal Septum and its diseases Acute and Chronic Rhinitis and Sinusitis and its complications; Allergic, Vasomotor Rhinitis and NARES; Nasal Polypi; Epistaxis; Facial Trauma; Granulomatous Diseases of Nose; Neoplasm of Nasal Cavity and PNS; Disorders and Tumours of Oral Cavity and Salivary Gland; Acute and Chronic Tonsillitis, Adenoiditis and Pharyngitis Head and Neck space infections; Tumours of Nasopharynx, Hypopharynx, Oropharynx and Pharyngeal Pouch; Snoring and Sleep Apnoea; Laryngotracheal Trauma; Acute and Chronic inflammation of Larynx; Congenital Lesions and Benign Tumours of Larynx; Laryngeal paralysis; Carcinoma Larynx; Stridor and Tracheostomy; Voice and Speech Disorder; Foreign Bodies in Air and Food passage; Disorders of Oesophagus and Dysphagia



Name of the Institute



OTORHINOLARYNGOLOGY

LOGBOOK

Competency – based medical education (CBME) involves the attainment of observable abilities by the students in a time-dependent, learner-centered manner. The emphasis is on outcomes that are relevant to the daily practice of medicine rather than facts. The student gets opportunity to learn at his/her own pace, the ultimate aim being the successful attainment of competencies by all students irrespective of when they do that. Assessment are aligned to these competencies; therefore, the tools differ drastically from the traditional curriculum. While written assessment of cognitive components constitute the bulk of traditional curricular assessment

Competency-based curriculum strives to employ more of workplace-based assessment including direct observation and daily logs.

Sayings of the great:

“I will prepare and someday my chance will come.”

Sir Abraham Lincoln

“Strength does not come from physical capacity, it comes from an indomitable will.”

2

Mahatma Gandhi

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LOGBOOK CERTIFICATE

This is to certify that this logbook is the bonafide record of Mr. / Ms. Roll
No.....Admission Year, of the Department of Otorhinolaryngology (ENT) at
.....Medical College.

The logbook is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

Head of Department of Otorhinolaryngology

Signature with Date

BIODATA OF THE CANDIDATE

Name of the student:

Name of the course: MBBS

Date of birth:

Father's / Guardian's name:

Mother's name:

Blood group:

Permanent Address:

Temporary Address:

.....

.....

.....

.....

Student's contact no:

Father's/ Guardian's contact no:

Student's Email id:

Father's/ Guardian's Email id:

Candidates Signature:

Date:



GENERAL INSTRUCTIONS

- 1) The logbook is a record of the academic / non-academic activities of the student. Each Medical student is responsible for maintaining their logbook.
- 2) This logbook is prepared as per the guidelines of NMC for implementation of Competency Based Curriculum for 3rd Professional MBBS students in the subject of Otorhinolaryngology.
- 3) Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly signed by the supervising faculty.
- 4) Entries in the logbook will be in accordance with activities done in the department & have to be scrutinized by the Head of the department.
- 5) The logbook assessment will be based on multiple factors like
 - Overall presentation
 - Active participation in the sessions Quality of write up of reflections.
 - Timely completions
 - Attendance
- 6) The logbook shall be kept as record work of the candidate for the department & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A **clear record** of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least **2 years** after passing of the examination. Institutions may be asked to provide these details by the University as and when required.

The contents in the logbook are suggested guidelines. The institutions can make **necessary changes as per the needs.**

ATTENDANCE

Attendance requirements are **75% in theory and 80% in practical/clinical** for eligibility to appear for the examination in that subject. In subjects that are taught in more than one phase- the learner must have 75% attendance in theory and 80% in practical in each phase of instruction in that subject

Records of Examinations and Internal Assessment

Sr. No.	Exam No.	Date	Theory	Date	Practical (Exam 1 and 2 – 5 marks each for journal and logbook, Prelim exam-10 marks each for journal and logbook)	Feedback provided	Signature of student	Signature of teacher
1	Exam no.1- *Phase II (end of 1 st clinical postings)		–		/40+10			
2	Exam no.2- Phase III/I (end of 2 nd clinical postings)		/50		/40+10			
3	Preliminary Examination		/100		/80+20			
4	Total		/150		/150			
5	Conversion		/30		/30			
6	Final Internal Assessment Marks (to be submitted to University)		/30		/30			

***The practical examination conducted in phase II will be college level examination and marks of the same will not be included in the internal assessment.**

.....
Signature of Head of the Department

Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes, extracurricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase II	Phase III/I	Signature of Teacher

Reflection (minimum 200 words) – 1

Date :

TOPIC:

Reflection (minimum 200 words) – 2

Date :

TOPIC:

LOGBOOK : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Competency # addressed	Name of Activity
Topic: Clinical Skills	
EN2.1	Elicit document and present an appropriate history in a patient presenting with an ENT complaint
EN2.2	Demonstrate the correct use of a headlamp and head mirror in the examination of the ear, nose and throat
EN2.4	Demonstrate the correct technique of performing and interpreting tuning fork tests
EN2.5	Demonstrate the correct technique of examination of the nose & paranasal sinuses including the use of nasal speculum
EN2.6	Demonstrate the correct technique of examining the throat including the use of a tongue depressor
EN2.7	Demonstrate the correct technique of examination of neck including elicitation of laryngeal crepitus
EN2.8	Demonstrate the correct technique to perform and interpret pure tone audiogram & impedance audiogram
EN2.12	Counsel and administer informed consent to patients and their families in a simulated environment
Topic: Management of diseases of ear, nose & throat	
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
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
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

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 mucosal type of CSOM
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
EN4.9	Demonstrate the correct technique for syringing wax from the ear in a simulated environment
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 Nasal Obstruction
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 Adenoid
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 Allergic Rhinitis
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 Epistaxis
EN4.37	Describe the clinical features, investigations and principles of management of Ludwig's angina
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 Chronic Tonsillitis
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
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

LOGBOOK PSYCHOMOTOR / PERFORMANCE SKILLS:

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

I - Otoscopy

D – Anterior nasal packing

LIST OF COMPETENCIES

Competency # addressed	Name of Activity
EN2.3	Demonstrate the correct technique of examination of the ear including Otoscopy
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)

LOGBOOK FOR AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

LIST OF COMPETENCIES FOR AETCOM

Competencies addressed

The student should be able to	Level
1. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues as it pertains to the physician – patient relationship (including fiduciary duty)	KH
2. Identify and discuss physician's role and responsibility to society and the community that she/he serves	KH

PHASE II-clinical (minimum two assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE II-Psychomotor

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										

PHASE III Part I -clinical (Minimum two assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I-Psychomotor skill

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										

PHASE III Part I - AETCOM

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										

REFLECTION ON AETCOM MODULE For PHASE III/Is

Module 2.1 – History taking

Competency addressed	Level
Elicit document and present an appropriate history in a patient presenting with an ENT complaint	SH

Reflection (minimum 200 words) -1

Date:

Signature of Teacher-in-charge

REFLECTION ON AETCOM MODULE

Module 2.12 – Counseling and administering informed consent

Competency addressed	Level
Counsel and administer informed consent to patients and their families in a simulated environment	SH

Reflection (minimum 200 words)-2

Date:

Signature of Teacher-in-charge

ANNEXURE 1:

RECORDING FORM FOR MINI – CEX

EVALUATOR :

DATE :

STUDENT :

YEAR :

PATIENT DIAGNOSIS :

SETTINGS :

AMBULATORY
IN PATIENT
ED

NEW
FOLLOW UP

COMPLEXITY : LOW
MODERATE
HIGH

PATIENT AGE

OTHER :

PATIENT SEX

FOCUS : DATA GATHERING / DIAGNOSIS / THERAPY / COUNSELLING

1. MEDICAL INTERVIEWING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

2. PHYSICAL INTERVIEWING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

3. HUMANISTIC QUALITIES / PROFESSIONALISM (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

4. CLINICAL JUDGEMENT (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

5. COUNSELLING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

6. ORGANIZATION / EFFICIENCY (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

7. OVERALL CLINICAL COMPETENCE (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

MINI CEX TIME : OBSERVING : _____ MINS

PROVIDING FEEDBACK _____ MINS

UNSATISFACTORY 1,2,3

SATISFACTORY 4, 5, 6

SUPERIOR 7, 8, 9

EVALUATOR SATISFACTION WITH MINI CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

RESIDENT SATISFACTION WITH MINI CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

COMMENTS :

STUDENT SIGNATURE

EVALUATOR SIGNATURE

ANNEXURE 2:

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Communication skills rating scale adapted from Kalamazoo consensus statement.

Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

MUHS Ophthalmology CBME U.G Curriculum

(a) **Competencies:** The student must demonstrate :

1. Knowledge of common eye problems in the community
2. Recognize, diagnose and manage common eye problems and identify indications for referral,
3. Ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of ophthalmologic problems, their management and correlation with function, rehabilitation and quality of life.

TEACHING METHODS & HOURS

	Large Group Teaching	Small group teaching/Practical /Tutorials	SDL	AETCOM	Total	Clinical/Field Posting
	-	-	-	-	-	-
3 rd part I/II	30 hours	60 hours	10 hours	MODULE 3.2	100 hours	PHASE 2 PHASE 3
Total	30 hours	60 hours	10 hours		100 hours	8 weeks

CURRICULUM

UG CURRICULUM FOR LARGE GROUP TEACHING

Topic code	Topic	No. of hours (30)	Integration	Method of Teaching
	Visual Acuity Assessment			
OP1.1	Describe the physiology of vision	1 hr	physiology	LGT
OP1.2	Define, classify and describe the types and methods of correcting refractive errors	2 hrs		LGT
OP1.4	Enumerate the indications and describe the principles of refractive surgery	1 hr		LGT
	Lids and Adnexa, orbit			
OP2.1	Enumerate the causes, describe and discuss the etiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa including	2 hr	Human anatomy	LGT

	Hordeolum externum / internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag, lagophthalmos			
OP2.6	Enumerate the causes and describe the differentiating features and clinical features of proptosis	1 hr		LGT
	Conjunctiva			
OP3.3	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of various causes of conjunctivitis	2hr		LGT
	Corneas			
OP4.1 & OP4.2	Enumerate, describe and discuss the types and causes of corneal ulceration Enumerate and discuss the differential diagnosis of infective Keratitis	3 hr	Human anatomy	LGT
OP4.4	Enumerate the causes and discuss the management of dry eye	1hr		<u>LGT</u>
OP4.5	Enumerate the causes of corneal blindness	1 hr		<u>LGT</u>
OP4.6	Enumerate the indications and types of keratoplasty	1 hr		<u>LGT</u>
OP4.9	Describe and discuss the importance and protocols involved in eye donation and eye banking	1 hr		<u>LGT</u>
	Iris and Anterior Chamber			
OP6.1	Describe clinical signs of intraocular inflammation and enumerate the features that distinguish granulomatous from non granulomatous inflammation.	2 hrs		<u>LGT</u>
OP6.2	Identify and distinguish acute iridocyclitis from chronic iridocyclitis			
OP6.7	Enumerate and discuss the aetiology, the clinical distinguishing features of shallow and deep anterior chamber. Choose appropriate investigations for patients with above conditions of anterior chamber	4 hr	<u>Human Anatomy</u>	<u>LGT</u>
	Lens			

OP7.2	Describe and discuss the aetio-pathogenesis , stages of maturation and complications of cataract	1 hr	<u>Pathology</u>	<u>LGT</u>
OP7.4	Enumerate the types of cataract surgery and describe the steps intraoperative and postoperative complications of extracapsular cataract extraction surgery	1 hr		<u>LGT</u>
	Retina & Optic Nerve			
OP8.1	Discuss the aetiology , pathology , clinical features and management of vascular occlusion of the retina	1 hr	<u>Human Anatomy</u> ^ <u>Pathology</u>	<u>LGT</u>
OP8.3	Demonstrate the correct technique of a fundus examination and describe and distinguish the fundoscopic features in normal condition and in conditions causing abnormal retinal exam	1 hr		<u>LGT</u>
OP8.5	Describe and discuss the correlative anatomy , aetiology , clinical manifestations, diagnostic tests , imaging and management of diseases of optic nerve and visual pathway	2 hr		<u>LGT</u>
	Miscellaneous			
OP9.2	Classify , enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus	1 hr		<u>LGT</u>
OP9.5	Describe the evaluation and enumerate the steps involved in the stabilization , initial management and indication for referral in a patient with ocular injury	1 hr		<u>LGT</u>

UG CURRICULUM FOR SMALL GROUP TEACHING

Topic code	Topic	No. of hours (60)	Integration	Method of Teaching
	Visual Acuity Assessment			
OP1.5	Define, enumerate the types and the mechanism by which strabismus leads to amblyopia	2 hr		<u>SGT</u>
	Lids and Adnexa, orbit			
OP2.4	Describe the aetiology , clinical presentation, Discuss the complication and management of orbital cellulitis	2 hr		<u>SGT</u>
OP2.5	Describe clinical features on ocular examination and management of a patient with cavernous sinus thrombosis	2 hr		<u>SGT</u>
OP2.6	Enumerate the causes and describe the differentiating features and clinical features and management of proptosis	3 hr		<u>SGT</u>
OP2.7	Classify the various types of orbital tumors . Differentiate the symptoms and signs of the presentations of various types of ocular tumors	4 hr		<u>SGT</u>
OP2.8	List the investigations helpful in diagnosis of orbital tumors. Enumerate the indications of appropriate referral	2 hr		<u>SGT</u>
	Conjunctiva			
OP3.4	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of trachoma	2hr		<u>SGT</u>
OP3.5	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of vernal catarrh	2 hr		<u>SGT</u>
OP3.6	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of pterygium	2 hr		<u>SGT</u>

OP3.7	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of symblepharon	1 hr		<u>SGT</u>
	Cornea			
OP4.3	Enumerate the causes of corneal edema	2 hr		<u>SGT</u>
OP4.7	Enumerate the indications and describe the methods of tarsorrhaphy	2 hr		<u>SGT</u>
	Sclera			
OP5.1	Define, enumerate and Describe the etiology, associated systemic conditions , ocular features, indications for referral , complication and management of episcleritis	2 hr		<u>SGT</u>
OP5.2	Define, enumerate and Describe the etiology, associated systemic conditions , ocular features, indications for referral , complication and management of scleritis	2 hr		<u>SGT</u>
	Iris and anterior chamber			
OP6.3	Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations	3 hr		<u>SGT</u>
OP6.4	Describe and distinguish hyphema and hypopyon	3 hr		<u>SGT</u>
OP6.5	Describe and discuss the angle of the anterior chamber and its clinical correlates	3 hr		<u>SGT</u>
OP6.8	Enumerate and choose the appropriate investigations for patients with conditions affecting the uvea	3 hr		<u>SGT</u>
OP6.9	Choose the correct local and systemic therapy for conditions of anterior chamber and enumerate their indications , adverse events and interactions	2 hr		<u>SGT</u>
	Lens			
OP7.1	Describe the surgical anatomy and the metabolism of lens	2 hr	<u>Anatomy & biochemistry</u>	<u>SGT</u>
	Retina and Optic Nerve			<u>SGT</u>

OP8.2	Enumerate the indications for laser therapy in the treatment of retinal disease (including retinal detachment, retinal degeneration , diabetic retinopathy and hypertensive retinopathy)	4 hr		<u>SGT</u>
OP8.8	Enumerate and discuss treatment modalities in management of diseases of retina	5hr		<u>SGT</u>
	Miscellaneous			
OP9.3	Describe the role of refractive error correction in a patient with headache and enumerate the indications of refral	2 hr		<u>SGT</u>
OP9.4	Enumerate, describe and discuss the causes of avoidable blindness and the national programs for control of blindness (including vision 2020)	3 hr		<u>SGT</u>

UG CURRICULUM FOR CLINICAL DEMONSTRATION/BED SIDE TEACHING / DOAP:

Topic code	Topic	No. of hours (10)	Integration	Method of Teaching
	Visual Acuity Assessment			
OP1.3	Demonstrate the steps in performing the visual acuity assessment for distance vision, near vision, color vision , the pin hole test and the menace and blink reflexes	1 hr	physiology	<u>DOAP</u>
	Lids and Adnexa , Orbit			
OP2.2	Demonstrate the symptoms and clinical signs of conditions enumerated in OP2.1	1 hr	Human Anatomy	<u>DOAP</u>
OP2.3	Demonstrate under supervision clinical procedure performed in the lid including : bells phenomenon, assessment of entropion / ectropion, perform the	1 hr		<u>DOAP</u>

	regurgitation test of lacrimal sac, massage technique in congdacryocystitis and trichiatic cilia removed by epilation			
	Conjunctiva			
OP3.1	Elicit document and present an appropriate history in a patient presenting with a “ red eye” including congestion , discharge , pain	1 hr		<u>DOAP</u>
OP3.2	Demonstrate document and present the correct method of examination of a red eye including vision assessment , corneal lustre, pupil abnormality, ciliary tenderness			
OP3.8	Demonstrate the correct technique of removal of foreign body from the eye in a simulated environment	1 hr		<u>DOAP</u>
OP3.9	Demonstrate the correct technique of instillation of eye drops in a simulated environment			
	Cornea			
OP4.8	Demonstrate the correct technique of removal of foreign body in cornea in a simulated environment			
OP4.10	Counsel patient and family about eye donation in a simulated environment	1 hr		<u>DOAP</u>
	Iris and Anterior Chamber			
OP6.6	Identify and demonstrate the clinical features and distinguish and diagnose common clinical conditions affecting the anterior chamber	1 hr		<u>DOAP</u>
OP6.10	Counsel patients with condition of iris and anterior chamber about their diagnosis , therapy and prognosis in an empathetic manner in a simulated environment			
	Lens			
OP7.3	Demonstrate the correct technique of ocular examination in a patient with cataract	1 hr		<u>DOAP</u>
OP7.5	To participate in team for cataract surgery	1 hr		<u>DOAP</u>
OP7.6	Administer informed consent and counsel			<u>DOAP</u>

	patient for cataract surgery in a simulated environment			
	Miscellaneous			
OP9.1	Demonstrate the correct technique the examine extraocular movements (unocular& binocular)	1 hr		<u>DOAP</u>

UG CURRICULUM FOR SDL

TOPIC CODE	TOPIC	TOTAL NO. OF HOURS	INTEGRATION	METHOD OF TEACHING
Competency OP 4.5	Enumerate the causes of corneal blindness Enumerate the indications and types of keratoplasty	1 st Hour – Introduction 2 nd Hour – symposium 3 rd Hour - feedback Total : 3 hours		SDL
Competency OP 9.4	Enumerate , describe and discuss the causes of avoidable blindness and the NPCB (Including VISION 2020)	1 st hour – Horizontal integration with community medicine 2 nd hour – orientation 3 rd hour- quiz Total : 3 hours	Horizontal integration with community medicine	SDL
Competency OP 6.7	Enumerate and discuss the aetiology, clinical features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above mentioned conditions	1 st hour – Introduction/ Orientation 2 nd hour – tutorials Total : 2 hours		SDL
Competency OP	Define , enumerate	1 st hour –		SDL

1.5	the types and the mechanism by which strabismus leads to amblyopia	introduction 2 nd hour – role play Total : 2 hours		
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Suggested books :

1. Parson's text book of Ophthalmology
2. Kanski's clinical Ophthalmology
3. Khurana's text book of Ophthalmology
4. Textbook of Ophthalmology, S.K Mittal (Thieme), 2021 edition

Internal Assessment

Subject – Ophthalmology

Applicable w.e.f batches admitted from 2019 and onwards

Phase		
	Theory	Practical
Second MBBS	-	EOP Practical Examination may be conducted. However, these marks shall not be added to the Internal Assessment.

3rd Year (III MBBS, PART I)						
Phase	I-Exam (March)			II-Exam Prelim (August)		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/I MBBS	50	50	100	100	100	200

Assessment in CBME is ONGOING PROCESS,

No Preparatory leave is permitted.

1. There shall be 2 internal assessment examinations in Ophthalmology including Prelim.
2. The suggested pattern of question paper for internal assessment internal examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 25 (theory) + 25 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	-	-
Phase III/I	150	150
Total	150	150
Conversion out of	25	25
Conversion formula	Total marks in 2 IA theory examinations /6	Total marks in 2 IA Practical examinations /6
Eligibility criteria after conversion	10	10
	Combined theory + Practical = 25	

1. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

2. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
3. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.
4. Remedial measures

A. Remedial measures for non-eligible students

- i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be arranged.
- ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
- iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. The marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination	100	100
Conversion out of	25	25
Conversion formula	Marks in remedial theory examinations /4	Marks in remedial Practical examinations /4
Eligibility criteria after conversion	10	10
	Combined theory + Practical = 25	

B. Remedial measures for absent students:

If any of the students is absent for any of the 2 IA examinations due to any reasons, following measures shall be taken.

- i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

- ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
- iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Format for Practical Examinations

Ophthalmology

Internal Assessment Practical

Seat No.	Long case including communication skills	OSCE (2 stations of 5 marks each)	Viva including Dark room instruments, Operative instruments	Log book and Journal viva	Practical Total
Max Marks	20	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills., history taking of a particular symptom.

Prelims and MUHS Final Practical

Seat No.	Long case including communication skills	OSCE (4 stations)	Log book and Journal viva	Dark room instruments	Operative instruments	Practical & Oral
Max. Marks	50	20	10	10	10	100

*Communication skills to be assessed by Kalamazoo Consensus, clinical signs to be assessed by either GLOBAL Rating Scale or OSCE, Psychomotor Skills to be assessed by OSCE with checklist. If the skills are small, 2 or 3 skills may be combined.

Internal Assessment Theory Examination (I)

Ophthalmology

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10 Marks)

1. Multiple Choice Questions (Total 10 MCQ of One mark each) (1x10=10)
- a) b) c) d) e) f) g) h) i) j)

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.
- 6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions structured clinical questions (15 x1=15)
- a)
- 3.Short Answer Questions (Any 5 out of 6),(including 1 on AETCOM) (5 x 5=25)
- a) b) c) d) e) f)

MUHS Final Theory Examination

Ophthalmology

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK FORMAT / SKELETON OF QUESTION PAPER

Instructions:

SECTION "A" MCQ

- 5) Put in the appropriate box below the question number once only.
- 6) Use blue ball point pen only.
- 7) Each question carries **One mark**.
- 8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (1x20=20)
- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **whenever** necessary.
 - 6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions (Any 2 out of 3) structured clinical questions (15 x 2=30)
- a) b) c)
3. Short Answer Questions (All 3),(including 1 on AETCOM) (5 x 3=15)
- a) b) c)

SECTION C (40 Marks)

- 4 Long answer questions (15x1=15)
- a)
- 5 Short answer questions(any 4 out of 5) (Clinical Reasoning) (5x4=20)
- a) b) c) d) e)

College Logo

Name of the Institute

MUHS Logo

LOG BOOK

DEPARTMENT OF OPHTHALMOLOGY

CONTENTS

Sr.No.	Subject	Remarks
1	CERTIFICATE	
2	BIODATA OF THE CANDIDATE	
3	INTRODUCTION & OBJECTIVES OF CBME CURRICULUM	
4	SELF DIRECTED LEARNING / TUTORIALS / SEMINARS / EXTRA CURRICULAR ACTIVITIES	
5	CLINICAL SKILLS – LIST OF COMPETENCIES	
6	PSYCHOMOTOR SKILLS – LIST OF COMPETENCIES	
7	COMMUNICATION SKILLS – AETCOM	
8	PHASE III/I	
9		
10		
11	REFLECTION ON AETCOM MODULE	

LOGBOOK CERTIFICATE

This is to certify that this log book is the bonafide record of Mr. / Ms
..... Roll No.....Admission Year, of the
Department of Ophthalmology atMedical College.

The log book is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

Head of Department of Ophthalmology

Signature with Date

BIODATA OF THE CANDIDATE

Name of the student:

Name of the course: MBBS

Date of birth:

Father's / Guardian's name:

Mother's name:

Blood group:

Permanent Address:

Temporary Address:

.....

.....

.....

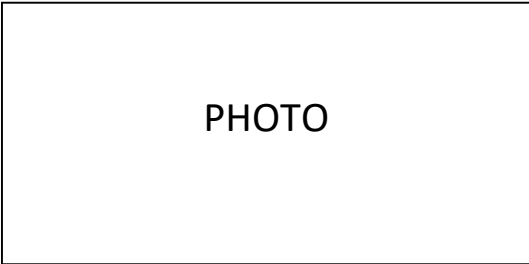
.....

Student's contact no:

Father's/guardian's contact no:

Student's mail id:

Father's/guardian's mail id:



Candidates Signature:

Date:

GENERAL INSTRUCTIONS

- 1) The log book is a record of the academic / nonacademic activities of the student. Each Medical student is responsible for maintaining their logbook.
- 2) This logbook is prepared as per the guidelines of NMC for implementation of Competency based curriculum for 3RD Professional MBBS students in the subject of Ophthalmology.
- 3) Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly signed by the supervising faculty.
- 4) Entries in the logbook will be in accordance with activities done in the department & have to be scrutinized by the Head of the department.
- 5) The logbook assessment will be based on multiple factors like
 - ▣ Overall presentation
 - ▣ Active participation in the sessions
 - ▣ Quality of write up of reflections
 - ▣ Timely completions
 - ▣ Attendance
- 6) The logbook shall be kept as record work of the candidate for the department & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A **clear record** of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least **2 years** after passing of the examination. Institutions may be asked to provide these details by the University as and when required.

The contents in the log book are suggested guidelines. The institutions can make **necessary changes as per the needs**

ATTENDANCE

Every candidate should have attendance not less than 75% of the total classes conducted in theory, practical and clinical jointly in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examinations.

For appearing at the University Examination, student should have minimum 75% attendance in each subject.

A candidate lacking in the prescribed attendance in any subject(s) should not be permitted to appear for the examination in that subject(s)

Students cannot appear in part or separately in individual subjects during the first appearance at the Professional examination.

The Principal should notify the attendance details at the end of each professional phase without fail under intimation to this University.

Records of Internal Assessment Examinations

Sr. No.	Eaxm No.	Date	Theory	Date	Practical including Viva	Feedback provided	Signature of student	Signat ure of teach er
1	I Internal Assessment		----/100		----/100			
2	II Internal Assessment		----/100		----/100			
3	III Internal Assessment		----/300		----/300			
4	Calculation of Internal Assessment Marks		500/5		500/5			
5								
6								
8	Final Internal Assessment Marks (to be submitted to University)		100		100			

	Theory	Practical
Phase II	50	50
Phase III/I	50	50
Phase III/II	100	100
Total	200	200
Conversion	100	100

.....
Signature of Head of the Department

Reflection (minimum 200 words) - 1

TOPIC :

DATE :

Reflection (minimum 200 words) - 2

TOPIC :

DATE :

LOGBOOK CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, Simulated patients as per the institutional preference.

RECORDING FORM FOR MINI – CEX

EVALUATOR :

DATE :

STUDENT :

YEAR :

PATIENT DIAGNOSIS :

SETTINGS :

AMBULATORY

NEW

COMPLEXITY : LOW

IN PATIENT

FOLLOW UP

MODERATE

ED

HIGH

OTHER :

PATIENT AGE

PATIENT SEX

FOCUS : DATA GATHERING / DIAGNOSIS / THERAPY / COUNSELLING

1. MEDICAL INTERVIEWING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

2. PHYSICAL INTERVIEWING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

3. HUMANISTIC QUALITIES / PROFESSIONALISM (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

4. CLINICAL JUDGEMENT (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

5. COUNSELLING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

6. ORGANIZATION / EFFICIENCY (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

7. OVERALL CLINICAL COMPETENCE (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

MINI CEX TIME : OBSERVING : _____ MINS

PROVIDING FEEDBACK _____ MINS

UNSATISFACTORY 1,2,3

SATISFACTORY 4, 5, 6

SUPERIOR 7, 8, 9

EVALUATOR SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

RESIDENT SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

COMMENTS :

STUDENT SIGNATURE

EVALUATOR SIGNATURE

Competency # addressed	Name of Activity
SU3.2	Observe blood transfusions.
SU5.2	Elicit, document and present a history in a patient presenting with wounds.
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
SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management
SU *24.3	Describe the principles of investigation and management of pancreatic disorders including pancreatitis and endocrine tumors
SU 25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent
SU 27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease
SU 27.6 *	Describe pathophysiology, clinical features, investigations and management of DVT and varicose veins.
SU27.8	Demonstrate the correct examination of the lymphatic system

SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.
SU 28.8 & SU28.9	Demonstrate the correct technique of examination of a patient disorders of the stomach
SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan
SU 29.9*	Describe the clinical features, investigations and management of disorders of prostate
SU 30.1*	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis and carcinoma penis.
SU 30.2*	Describe the applied anatomy, clinical features, investigations and principles of management of undescended testis
SU 30.3*	Describe the applied anatomy, clinical features, investigations and principles of management of epididymo- orchitis
SU 30.4*	Describe the applied anatomy, clinical features, investigations and principles of management of varicocele
SU 30.5*	Describe the applied anatomy, clinical features, investigations and principles of management of hydrocele
SU 30.6*	Describe the applied anatomy, clinical features, investigations and principles of management of tumours of testis

LOGBOOK PSYCHOMOTOR / PERFORMANCE SKILLS :

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

I – independent certification

D- demonstration

LIST OF COMPETENCIES

Competency # addressed	Name of Activity
SU10.4(I)	Perform basic surgical skill such as First Aid including suturing and minor surgical procedures in simulated environment
(I)	Bandaging (Head bandaging, Ear bandaging, Eye Bandaging, Figure of 8 Bandaging around joints of upper limb and lower limb, Scrotal support, Crepe bandage application over upper limb and lower limb

(I)	Incision and Drainage
(I)	Wound Care (Clean surgical wound care, Wounds after trauma, Diabetic wound care)
SU11.3 (I)	Demonstrate maintenance of an airway in a mannequin or equivalent
SU14.4 (I)	Demonstrate the techniques of asepsis and suturing in simulated environment
SU17.2 (D)	Demonstrate the steps in Basic Life support, Transport of injured patient in a simulated environment
SU17.10 (D)	Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment
S29.11	Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent

LOGBOOK FOR AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Communication skills rating scale adapted from Kalamazoo

consensus statement Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

LIST OF COMPETENCIES-For AETCOM

Competency # addressed	Name of Activity
SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care
SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.
SU4.4	Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.
SU9.2	Biological basis for early detection of cancer and multidisciplinary approach in management of cancer
SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately
SU13.4	Counsel patients and relatives on organ donation in a simulated environment

SU25.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast
Module 4.3 - Case studies in medico-legal and ethical situations	Identify and discuss medico-legal, socio-economic and ethical issues as it pertains to organ donation
Module 4.6 - Case studies in ethics and the doctor-industry relationship	Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts

PHASE II-clinical (minimum four assessments)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE II-Psychomotor

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										

PHASE II- AetCom (Minimum Four assessments)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I -clinical (minimum four assessments)

SR. No.	Competen cy # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectation s OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I-Psychomotor skill

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I - AetCom (Minimum Four assessments)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd, casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part II -clinical (Minimum four assessments)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part II -Psychomotor

SR. No.	Competen cy # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectation s OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of facult y	Feedbac k received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										

PHASE III Part II - AetCom (Minimum Five assessments)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										
7.										

REFLECTION ON AETCOM MODULE For PHASE III/II

Reflection(minimum 200 words) -1

Date:

Module 4.3 - Case studies in medico-legal and ethical situations

Competency addressed	Level	Assessment
Identify and discuss medico-legal, socio-economic and ethical issues as it pertains to organ donation	KH	Participation in SDL and discussion

Signature of Teacher-in-charge

REFLECTION ON AETCOM MODULE

Reflection (minimum 200 words)-2

Date:

Module 4.6 - Case studies in ethics and the doctor-industry relationship

Competency addressed	Level	Assessment
Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts	SH	Participation in SDL and discussion

Signature of Teacher-in-charge

Maharashtra University of Health Sciences

General Medicine

Second MBBS (Clinical posting)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : **25+ 60**

2. A. Lectures(hours): **25**

B. Self-directed learning (hours) : **NIL**

C. Clinical Postings (hours): **60**

D. Small group teachings/tutorials/Integrated teaching/Practicals (hours): **NIL**

Week / Day	Day of the Week *	Competency Nos.	Topics & Subtopics (Suggested)	Duration	TL Method
1/ 1	Monday	1.10	Orientation to History Taking	3 hours	Bed side clinic
1/2	Tuesday	9.3	History taking and causes of anemia	1 hour	Bed side clinic
		8.9	Evaluation of all risk factors and co-morbidities for patient with hypertension	1 hour	Bed side clinic
		11.7	Elicit document and present a medical history that will differentiate the etiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease	1 hour	Bed side clinic
1/3	Wednesday	16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses	1 hour	Bed side clinic
		25.4	Elicit document and present a medical history that helps delineate the aetiology of zoonotic diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel	2 hours	Bed side clinic
1/4	Thursday	26.20	Demonstrate ability to communicate to patients in a patient, respectful, non-threatening, non-judgmental and empathetic manner	2 hours	Bed side clinic
		26.21 & 26.22	- Demonstrate respect to patient privacy		Bed side

Week / Day	Day of the week	Competency Nos.	Topics & Subtopics	Duration	TL Method
			-Demonstrate ability to maintain confidentiality in patient care	1 hour	clinic
1/5	Friday	26.35	Demonstrate empathy in patient encounters	1 hour	Bed side clinic
		6.7	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	1 hour	Bed side clinic
		26.19 , 26.24 & 26.25	- Demonstrate ability to work in a team of peers and superiors - Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers - Demonstrate responsibility and work ethics while working in the health care team	1 hour	Bed side clinic
2/1	Monday	1.11, part 1.29	Orientation to General Exam	3 hours	Bed side clinic
2/2	Tuesday	1.12	Pulse examination with demonstration	3 hours	Bed side clinic /DOAP
2/3	Wednesday	1.13	Measure BP accurately	2 hours	Bed side clinic /DOAP
		1.14	JVP	1 Hour	Bed side clinic /DOAP
2/4	Thursday	4.9	Evaluation of fever	1.5 hours	Bed side clinic/DOAP
		4.10	Examination of skin ,lymph node, chest and abdominal examination	1.5 hours	Bed side clinic/DOAP
2/5	Friday	9.4	Perform a systematic examination that includes : general examination for pallor, oral examination	1 hour	Bed side clinic
		4.21	Orientation to Clinical decision making	2 hours	Bed side clinic
3/1	Monday	7.11 and 7.12	Orientation to medical history and examination of joints ,muscle and skin rheumatological diseases	1hour	Bed side clinic
		11.8	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) in a patient	1 hour	Bed side clinic

Week / Day	Day of the week	Competency Nos.	Topics & Subtopics	Duration	TL Method
			with diabetes		
			Practice session for clinical skills including BP Measurement/ ward rounds	1 hour	Bed side clinic
3/2	Tuesday	1.30	Skill Acquisition - IM injection	3 hour	Skills lab
3/3	Wednesday	5.9	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 and family history in patient with liver disease.	1 hour	Bed side clinic
		16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination	1 hour	Bed side clinic
		5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	1 hours	Bed side clinic
3/4	Thursday	2.7	CVS Examination with demonstration	3 hour	Bed side clinic/DOAP
3/5	Friday	3.4 & 3.5	Orientation to history taking, general examination & systemic examination of Respiratory system	3 hours	Bed side clinic/DOAP
4/1	Monday	18.3	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	2 hours	Bed side clinic
			Practice session for clinical and other skills/ ward rounds	1 hour	Bed side clinic / skills lab
4/2	Tuesday	18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate based on the history	2 hours	Bed Side clinic
			Practice session for clinical and other skills/ ward rounds	1 hour	Bed side clinic / skills lab
4/3	Wednesday	20.4 & 20.5	Medical emergency - - Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite	2 hours	Bed side clinic

Week / Day	Day of the week	Competency Nos.	Topics & Subtopics	Duration	TL Method
			- Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination in a case of snake bite		
		Practice session for clinical and other skills/ward rounds		1 hour	Bed side clinic / skills lab
4/4	Thursday	Practical Assessment + Theory Assessment		3 hours	Case presentation
4/5	Friday	Skills Assessment – Certifiable skills and soft skills Logbook Certification		3 hours	OSCE stations/ skills stations
<p>Student Doctor method of clinical teaching – on the emergency day/ admission day of the clinical unit, students will be posted in admission area (Casualty / EMS) and allotted a case/ cases, which they will be following over the period of indoor stay and the same will be entered in the Logbook.</p> <p>Focus of Learner-Doctor programme - History taking, physical examination, assessment of change in clinical status, communication and patient education</p>					

* Day of week is only suggestive, considering the posting is started on Monday. If posting is commenced on any other day, day of week can be modified accordingly.

Maharashtra University of Health Sciences

General Medicine

Second MBBS (from Feb/March 2021)

Subject: GENERAL MEDICINE Theory

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2; page nos. 60-142)

1. Total Teaching hours : **25h + 60h**

2. A. Lectures(hours): **25h**

B. Self directed learning (hours) : **NIL**

C. Clinical Postings (hours): 4 Wks (60h)

D. Small group teachings/tutorials/Integrated teaching/Practicals(hours): **NIL**

Lecture	Competency Nos.	Topic	Subtopics
1	IM 4.1 to 4.5	Fever & Febrile Syndromes	Introduction to Fever, Pathophysiology, Causes- Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile Response, Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel, 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), inflammatory causes of fever, malignant causes of fever including hematologic and lymph node malignancies
2	IM 4.6; 4.15; 4.22 to 4.26	Fever & Febrile Syndromes	Malaria - Discuss and describe the pathophysiology and manifestations of malaria, interpret a malarial smear, Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance, malarial prevention
3	IM 4.7	Fever & Febrile Syndromes	Sepsis Syndrome - Discuss and describe the pathophysiology and manifestations of the sepsis syndrome
4	IM 4.8; 4.16; 4.18	Fever & Febrile Syndromes	FUO- 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 , 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, Enumerate the indications for use of imaging in the diagnosis of febrile syndromes.

5	IM 25.1; 25.2; 25.3, 25.7,25.8, 25.10,25.11	Infections	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases, pathophysiology and manifestations, appropriate diagnostic plan, newer techniques in the diagnosis, empiric treatment plan OF - Leptospirosis & Dengue
6		Infections	Rabies & Tetanus
7		Infections	Scrub Typhus, Typhoid
8		Infections	Acute encephalitis syndromes including JE
9	IM 6.1 to 6.3	HIV	Describe and discuss the symptoms and signs of acute HIV Seroconversion, Define and classify HIV AIDS based on the CDC criteria, Describe and discuss the relationship between CDC count and the risk of opportunistic infections
10	IM 6.4 to 6.6; 6.9	HIV	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections, malignancies, skin and oral lesions , Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC
11	IM 6.16 to 6.18	HIV	Discuss and describe the principles of HAART , the classes of antiretrovirals used, adverse reactions and interactions, Discuss and describe the principles and regimens used in post exposure prophylaxis, Enumerate the indications and discuss prophylactic drugs used to prevent HIV related opportunistic infections
12	IM 16.1; 16.13; 16.14; 16.6	Diarrheal Diseases	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and noninfectious causes, Distinguish between diarrhea and dysentery based on clinical features, Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic, bacterial and viral causes of diarrhea
13	IM 16.11; 16.12	Diarrheal Diseases	Diagnosis of acute diarrhea (Stool culture & Blood culture); Diagnosis of chronic diarrhea (Antibodies, colonoscopy, imaging & biopsy)
14	IM 16.2; 16.3	Diarrheal Diseases	Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance, Describe and discuss the chronic effects of diarrhea including malabsorption
15	IM 16.15- 16.17	Diarrheal Diseases	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis , Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy, the indications for surgery in inflammatory bowel disease
16	IM 3.2,3.3	Pneumonia	Discuss and describe the etiologies of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host, Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia
17	IM 3.1	Pneumonia	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia

18	IM 3.15; 3.16	Pneumonia	Describe and enumerate the indications for hospitalization in patients with pneumonia, Describe and enumerate the indications for isolation and barrier nursing in patients with pneumonia
19	IM 3.17; 3.19	Pneumonia	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and indications for ventilation, Discuss, describe, enumerate the indications and communicate to patients on pneumococcal and influenza vaccines
20	IM 20.1; 20.3; 20.7	Envenomation	Enumerate the local poisonous snakes and describe the distinguishing marks of each, Describe the initial approach to the stabilization of the patient who presents with snake bite , Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti snake venom .
21	IM 20.8; 20.9	Envenomation	Describe the diagnosis, initial approach stabilization and therapy of scorpion envenomation and bee sting allergy
22	IM 21.1 to 21.3	Poisoning	Describe the initial approach to the stabilization of the patient who presents with poisoning, Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification, common corrosives poisoning .
23	IM 21.4	Poisoning	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy
24	IM 23.1, 23.4	Nutrition & Vitamin Deficiencies	Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses, Enumerate the indications for enteral and parenteral nutrition in critically ill patients
25	IM 23.2; 23.3	Nutrition & Vitamin Deficiencies	Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital, Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies

Maharashtra University of Health Sciences

General Medicine

Third professional Part I MBBS

Subject: General Medicine

Theory - Lectures + SDL + Tutorials, Seminars, Integrated

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : **25+ 35+ 5+72**
2. A. Lectures(hours): **25** B. Self-directed learning (hours) : **05**
C. Clinical Postings (hours): 72
D. Small group teachings/tutorials/Integrated teaching/Practicals (hours): **35**

Lecture / SDL	Competency Nos.	Topic	Subtopics
1	IM 9.1; 9.2	Anaemia	Classification of anemia; Etiology & Prevalence
2	IM 9.7; 9.8,9.21	Anaemia	Components of hemogram; Tests for Iron deficiency & Vit. B12 Deficiency. Determine the need for specialist consultation.
3	IM 9.11; 9.12	Anaemia	Diagnostic plan for evaluation of anemia including BMA & Biopsy
4	IM 9.17; 15.12,9.18,	Anaemia	Indication for Blood transfusion & components; Precautions during transfusion including mismatch transfusion.
SDL-1	IM 9.14	Anaemia	National programs for prevention of anemia
5	IM 14.1 to 14.4	Obesity	Definition, prevalence, etiology, risk factors including monogenic forms, environmental factors of obesity
6	IM 14.5; 14.9, 14.10,14.13; 14.14;14.15	Obesity	Natural history, complications, laboratory tests , pharmacotherapy and bariatric surgery of obesity and prevention of obesity
7	IM 15.1; 15.6	GI Bleed	Etiology and distinguishing features of UGI and LGI Bleed
8	IM 15.2 ; 15.3; 15.11	GI Bleed	Physiological effects, Evaluation and steps in stabilizing a patient with acute volume loss due to GI bleed; including blood and component transfusion

9	15.14; 15.10; 15.15,15.16, 15.17	GI Bleed	Investigation (endoscopy, colonoscopy, imaging) and treatment of GI bleed including pharmacotherapy of acid peptic disease (including H.pylori), pressors, endoscopic interventions and surgery and appropriate level of specialist consultation
10	IM 5.1; 5.2; 5.3, 5.5; 5.7	Liver Diseases	Etiology, Pathophysiology of hyperbilirubinemia and various forms of liver disease including alcoholic liver disease and drug induced liver injury
11	IM 5.4,5.16, 5.17	Liver Diseases	Epidemiology, microbiology, immunology, clinical evolution of infective (viral) hepatitis and it' management including vaccination.
12	IM 5.12, 13, 14	Liver Diseases	Outline a diagnostic approach to liver disease based on CBS, hyperbilirubinemia, Ascitic fluid examination, liver function changes and hepatitis serology. Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease.
13	IM 5.6,5.18	Liver Diseases	Pathophysiology, evolution, management and Complication of cirrhosis and portal hypertension, indications for hepatic transplantation.
SDL-2	IM 5.8	Liver Diseases	Cholelithiasis and cholecystitis
14	IM 11.1 to 11.4	Diabetes	Definition, classification of Diabetes; Epidemiology, Pathogenesis, Genetics, Risk factors and Clinical evolution of Type-1 & -2 DM
15	IM 11.6; 11.9; 11.11, 11.14; 11.15; 11.22 to 11.24	Diabetes	Pathogenesis, C/F, Precipitating factors, Stabilization, Principle of therapy & Management (Investigations & treatment) of diabetic emergencies (Hypoglycemia, DKA, HONKS).
16	IM 11.16; 11.17	Diabetes	Pharmacological therapies for DM, indications, CI, ADR and Interaction- Based on presentation, severity, complication in a cost effective therapy
17	IM 11.5	Diabetes	Pathogenesis, temporal evolution of microvascular and macrovascular complications of diabetes (Neuropathy, Nephropathy, Retinopathy, HTN,
SDL 3	IM 11.18	Diabetes	Pharmacology, indications, ADR and interactions of drugs used in treatment and prevention of target organ damage and chronic complications of diabetes

18	IM 7.1; 7.2, 7.27	Rheumatologic Problems	Pathophysiology and genetic basis of autoimmune disease and determine the need for specialist consultaion
19	IM 7.3 to 7.6; 7.8	Rheumatologic Problems	Pathophysiology, classification, presenting features, approach, and etiology of joint pain; differentiate arthritis from arthralgia
20	IM 7.10, 7.14,7.15,7.17 ,7.19	Rheumatologic Problems	Describe appropriate diagnostic workup and treatment plan for rheumatological diseases. Enumerate Systemic manifestations of rheumatological diseases,
SDL 4	IM 7.7; 7.9; 7.16	Rheumatologic Problems	Articular from periarticular symptoms; Signs and symptoms of articular and periarticular diseases, Indications for Arthrocentesis.
21	IM 12.3; 12.4	Thyroid Dysfunction	Principles of Thyroid function tests, Principles of RAI uptake, alteration of physiological function along with physiology of HPT axis
22	IM 12.1; 12.2; 12.11,12.12; 12.13, 12.14	Thyroid Dysfunction	Epidemiology, pathogenesis, genetic basis of Hypothyroidism, interpretation of TFT, Pharmacotherapy, indication, ADR of Thyroxine. Iodization programmes of Govt of India
23	IM 12.1; 12.2; 12.11,12.13, 12.4; 12.14	Thyroid Dysfunction	Epidemiology, pathogenesis, genetic basis of Hyperthyroidism; interpretation of TFT, Pharmacotherapy, indication, ADR of Anti-thyroid drugs
24	IM 13.1 to 13.3	Common Malignancies	Epidemiology, Genetic Basis, Risk factors for common malignancies in India; Infections causing cancer
25	IM 13.4	Common Malignancies	Natural history, presentation, course, complication and cause of death for common cancers
SDL 5	IM 13.5,13.6, 13.18, 13.19	Common Malignancies	Describe the common issues encountered in patients at the end of life and principles of management, Describe and distinguish the difference between curative and palliative care in patients with cancer, Describe and discuss the ethical and the medico legal issues involved in end of life care, Describe the therapies used in alleviating suffering in patients at the end of life

Tutorials/Seminars/Integrated teachings- 35 hours			
Tutorials- Total 10 hours			
S. No.	Topics	Hours	
1.	Medical emergencies – Common poisonings	1 hr	
2.	Medical emergencies - related to Pharmacological agents	1 hr	
3.	Drugs – IV fluids and pain killers including Narcotics	1 hr	
4.	Drugs – used in CPR	1 hr	
5.	Instruments – for various injections and IV access	1 hr	
6.	Instruments - for routine invasive procedures	1 hr	
7.	X rays – Format of reading X-ray chest, skeletal and pleural involvement in X-ray Chest	1 hr	
8.	X rays – Parenchymal involvement in X-ray chest	1 hr	
9.	ECG – Basics of reporting ECG ,with abnormal rate	1 hr	
10	ECG – Rhythm disturbances	1 hr	
Seminars- Total 16 hours			
S. No.	Topics	Hours	
1.	Clinical approach to Ascites	1 hr	
2.	Clinical approach to Anaemia	1 hr	
3.	Clinical approach to lymphadenopathy	1 hr	
4.	Clinical approach to Jaundice	1 hr	
5.	Clinical approach to chest pain	1 hr	
6.	Clinical approach to headache	1 hr	
7.	Clinical approach to bleeding diathesis	1 hr	
8.	Clinical approach to Comatose patient	1 hr	
9.	Portal hypertension and its complications	1 hr	
10	Pulmonary arterial hypertension	1 hr	
11	Pulmonary function tests	1 hr	
12	Thyroid function tests	1 hr	
13	Grave’s disease	1 hr	
14	Micro-vascular complications of DM	1 hr	
15	Macro-vascular complications of DM	1 hr	
16	Insulin and analogues	1 hr	
Integration – Total 9 hours			
S.No.	Subject	Topics for integration	Hours
1.	Clinical Pharmacology	Clinical pharmacokinetics	01
		Drug-Drug interaction	01
		Adverse drug reaction	01
2.	Clinical Pathology	Anaemia and haemoglobinopathies	01
		Platelet disorder	01
		Hematological malignancies	01
3.	Clinical Microbiology	Biologicals and disease modifying agents	01
		Antimicrobial resistance	01
		Viral haemorrhagic fever	01

Maharashtra University of Health Sciences

General Medicine

Third professional Part I MBBS

Subject: General Medicine

Clinical Posting (4 weeks, 6 days a week, 3 hours per day)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : **25+ 35+ 5= 65**
2. A. Lectures(hours): **25** B. Self-directed learning (hours) : **05**
C. Clinical Postings (hours): **72**
D. Small group teachings/tutorials/Integrated teaching/Practicals (hours): **35**

Clinical skills hours	Procedural Skills hours	Assessment hours	Total
54	12	06	72

Maharashtra University of Health Sciences

General Medicine

Fourth professional Year III/II MBBS

Subject: General Medicine

Theory - Lectures + SDL + Tutorials, Seminars, Integrated

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours :70+ 125+15 + 144+ 72 = 426
2. A. Lectures(hours): **70** B. Self-directed learning (hours) :15
C. Clinical Postings (hours): 144 + 72= 216
D. Small group teachings/tutorials/Integrated teaching/Practicals (hours): 125

Lecture / SDL	Competency Nos.	Topic	Subtopics
1	IM 8.1 to 8.5	Hypertension	Define and classify hypertension, Describe and discuss the epidemiology, etiology, prevalence, pathophysiology and genetic basis of essential hypertension, Describe and discuss the differences between primary and secondary hypertension
2	IM8.7,8.1	Hypertension	Describe and discuss epidemiology, aetiology and the prevalence of secondary HT and the clinical manifestations of the various aetiologies of secondary causes of hypertension
3	IM8.6	Hypertension	Define, describe and discuss and recognize hypertensive urgency and emergency
4	IM 8.8, 8.20	Hypertension	Describe, discuss and identify target organ damage due to hypertension, Determine the need for specialist consultation
SDL 1	IM 8.12,8.13	Hypertension	Describe the appropriate diagnostic work up based on the presumed aetiology, Enumerate the indications for and interpret the results of : CBC, Urine routine, BUN, Cr, Electrolytes, Uric acid, ECG
SDL 2	IM 8.14	Hypertension	Develop an appropriate treatment plan for patient with hypertension
5	IM 1.1, 1.2	Heart Failure	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart

			disease including: rheumatic/valvular, ischemic, hypertrophic, inflammatory. Describe and discuss the genetic basis of some forms of heart failure.
6	IM 1.3 (part)	Heart Failure	Describe and discuss the aetiology, microbiology pathogenesis and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and Rheumatic valvular heart disease.
7	IM1.9	Heart Failure	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever
8	IM 1.3 (part) IM 1.27	Heart Failure	Describe Complications of Rheumatic valvular heart disease. (Other than Infective Endocarditis), Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease
SDL 3	IM 1.25	Heart Failure	Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation
9	IM1.3 (part), 1.21	Heart Failure	Describe and discuss and identify the clinical features of acute and sub-acute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy
10	IM1.4,1.5,1.6	Heart Failure	Staging of heart failure, Describe, discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure, Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodeling and neuro-hormonal adaptations
11	IM1.7	Heart Failure	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias, anemia, thyrotoxicosis, dietary factors drugs etc.
12	IM 1.8	Heart Failure	Describe and discuss the pathogenesis and development of common arrhythmias involved in failure particularly atrial fibrillation
13	IM 1.19	Heart Failure	Enumerate the indications for and describe the findings of heart failure with the following : 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram
14	IM 1.24	Heart Failure	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
15	IM 1.28	Heart Failure	Enumerate the causes of adult presentations of congenital heart disease and describe the distinguishing features between cyanotic and acyanotic heart disease
16	IM 2.1 ,2.2, 2.4	AMI/IHD	Discuss and describe the epidemiology, antecedents and risk factors both modifiable and non-modifiable, the pathogenesis, natural history, evolution and complications of atherosclerosis and IHD.
SDL 4	IM 2.3	AMI/IHD	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis
17	IM 2.5	AMI/IHD	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes
18	IM 2.13	AMI/IHD	Discuss and enumerate the indications for and findings on echocardiogram, stress testing and coronary angiogram
19	IM 2.14,2.15, 2.16	AMI/IHD	Discuss and describe the indications for admission to a coronary care unit and supportive therapy for a patient with acute coronary syndrome. Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation. Discuss and describe the indications for acute thrombolysis, PTCA and CABG.
SDL 5	IM 2.17	AMI/IHD	Discuss and describe the indications and methods of cardiac rehabilitation.
20	IM 2.18	AMI/IHD	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia
21	IM 2.19	AMI/IHD	Discuss and describe the pathogenesis, recognition and management of complications of acute coronary syndromes including arrhythmias, shock, LV dysfunction, papillary muscle and pericarditis
22	IM ,2.20	AMI/IHD	Discuss and describe the assessment and relief of pain in acute coronary syndromes
23	IM 2.23	AMI/IHD	Describe and discuss the indications for nitrates, anti platelet agents, gpIIb IIIa inhibitors, beta blockers, ACE

			inhibitors etc in the management of coronary syndromes
24	IM 17.1,17.6, 17.10	Headache	Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache. Choose and interpret diagnostic testing based on the clinical diagnosis including imaging. Enumerate the indications for emergency care admission and immediate supportive care in patients with headache.
25	IM 17.3,17.11, 17.12	Headache	Classify migraine and describe the distinguishing features between classical and non-classical forms of migraine. Describe the indications, pharmacology, dose, side effects of abortive therapy and prophylactic therapy in migraine.
26	IM 17.13	Headache	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis .
SDL 6	IM 18.1	Cerebrovascular accident	Describe the functional and the vascular anatomy of the brain
27	IM 18.2	Cerebrovascular accident	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non-hemorrhagic stroke
28	IM 18.10	Cerebrovascular accident	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)
29	IM 18.11	Cerebrovascular accident	Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)
30	IM 18.12,18.13	Cerebrovascular accident	Enumerate the indications for and describe acute therapy of non-hemorrhagic stroke including the use of thrombolytic agents and anti-platelet agents
31	IM18.14, 18.15	Cerebrovascular accident	Describe the initial management of a hemorrhagic stroke. Enumerate the indications for surgery in a hemorrhagic stroke.
SDL 7	IM 18.16	Cerebrovascular accident	Enumerate the indications describe and observe the multidisciplinary rehabilitation of patients with a CVA
SDL 8	IM 19.1	Movement disorders	Describe the functional anatomy of the locomotor system of the brain
32	IM 19.2,19.3,IM	Movement disorders	Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors, clinical approach to movement

	19.7		disorders.
33	IM 19.8	Movement disorders	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome
34	IM19.7,19.9	Movement disorders	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders, Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders
35	IM 10.1,10.2	AKI and CRF	Define, describe and differentiate between acute and chronic renal failure, Classify, describe and differentiate the pathophysiologic causes of acute renal failure
36	IM 10.3, 10.4	AKI and CRF	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF, Describe the evolution, natural history and treatment of ARF
37	IM 10.5,10.6, 10.7	AKI and CRF	Describe and discuss the aetiology of CRF, Stage Chronic Kidney Disease, Describe and discuss the pathophysiology and clinical findings of uremia
38	IM 10.15,10.16, 10.17,10.19	AKI and CRF	Describe the appropriate diagnostic work up based on the presumed aetiology, Enumerate the indications for and interpret the results of : renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap, Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance), Enumerate the indications and describe the findings in renal ultrasound
39	IM10.8 , 10.9 10.10 ,10.11	AKI and CRF	Classify, describe and discuss the significance of proteinuria in CKD, Describe and discuss the pathophysiology of anemia and hyperparathyroidism, Describe and discuss the association between CKD glycaemia and hypertension, Describe and discuss the relationship between CAD risk factors and CKD.
40	IM 10.25	AKI and CRF	Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis
41	IM 10.26	AKI and CRF	Describe and discuss supportive therapy in CKD including diet, anti hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hypophosphatemia and

			secondary hyperparathyroidism
42	IM 10.27,10.28	AKI and CRF	Describe and discuss the indications for renal dialysis, Describe and discuss the indications for renal replacement therapy
SDL 9	IM 10.29, 10.30,10.31	AKI and CRF	Describe discuss and communicate the ethical and legal issues involved in renal replacement therapy, Recognize the impact of CKD on patient's quality of life, wellbeing , work and family, Incorporate patient preferences in to the care of CKD
43	IM 22.1,22.2, 22.3	Fluid Electrolyte & Acid base Disorder	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia, Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism, Describe the approach to the management of hypercalcemia
44	IM 22.4	Fluid Electrolyte & Acid base Disorder	Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome
45	IM 22.5,22.6	Fluid Electrolyte & Acid base Disorder	Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management of the patient with Hyponatremia and hypernatremia
46	IM 22.7,22.8	Fluid Electrolyte & Acid base Disorder	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hypokalemia and hyperkalemia
47	IM 22.9,22.10, 22.11, 22.12	Fluid Electrolyte & Acid base Disorder	Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis, metabolic alkalosis, respiratory acidosis, respiratory alkalosis
SDL 10	IM 24.18,24.19, 24.21	Geriatrics	Describe the impact of the demographic changes in ageing on the population, Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on health and discuss ethical issues in care of elderly.
48	IM 24.1, 24.3, 24.5 to 25.7	Geriatrics	Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly, Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization,

			management and rehabilitation of acute confusional states, depression, dementia and personality changes in elderly.
49	IM 24.10	Geriatrics	Describe and discuss the etiopathogenesis causes, clinical presentation, difference in clinical presentation identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly.
50	IM 24.4,24.9	Geriatrics	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of, vascular events and CVA in the elderly
51	IM 24.11	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery
52	IM 24.8,24.12, 24.13,24.14	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of osteoporosis, degenerative joint disease, falls, and common fractures in elderly
53	IM 24.15 to 25.17	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss, hearing loss and disabilities in the elderly
54	IM 24.22	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly
SDL 11	IM 24.20	Geriatrics	Enumerate and describe social interventions in the care of elderly including domiciliary discussion services, rehabilitation facilities, old age homes and state interventions
55	IM 26.2, 26.23,26.27, 26.38, 26.39,26.42	The role of the physician in the community	Professional Development – Describe and discuss the commitment to lifelong learning as an important part of physician growth, Demonstrate a commitment to continued learning, Demonstrate personal grooming that is adequate and appropriate for health care responsibilities, Demonstrate ability to form and

			function in appropriate professional networks, Demonstrate ability to pursue and seek career advancement, Demonstrate commitment to learning and scholarship.
56	IM 26.3,26.4, 26.5,26.11	The role of the physician in the community	Bioethics in Clinical Practice - Describe and discuss the role of beneficence, non-maleficence, autonomy and shared responsibility as guiding principles in patient care
57	IM 26.37,26.36	The role of the physician in the community	Time management - Demonstrate ability to manage time appropriately, Demonstrate ability to balance personal and professional priorities
58	IM 26.12, 26.13, 26.25	The role of the physician in the community	Decision making in health care - Identify, discuss and defend medico legal, socio-cultural and ethical issues as it pertains to decision making in health care including advanced directives and surrogate decision making, decision making in emergency care including situations where patients do not have the capability or capacity to give consent, Identify, discuss and defend, medico legal, socio-cultural and ethical issues as they pertain to consent for surgical procedures
59	Module 4.1	Pandemic module	Lessons learnt from Covid 19 pandemic – a Narrative.
60	Module 4.1	Pandemic module	Individual responsibilities in Pandemic Situation.
SDL 12	26.47	The role of the physician in the community	Euthanasia, current position in India - Identify, discuss and defend medico legal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support
SDL 13	26.8	The role of the physician in the community	Organ Donation in India - Identify discuss medico legal, socioeconomic and ethical issues as it pertains to organ donation
SDL 14	Integrated SDL	Community Medicine	National programs relevant to physicians
SDL 15	Integrated SDL	Community Medicine	Adult Immunization and newer vaccines
61	1	Revision Lecture	Febrile illness
62	2	Revision Lecture	Infections
63	3	Revision Lecture	HIV

64	4	Revision Lecture	Diarrheal Diseases
65	5	Revision Lecture	Pneumonia
66	6	Revision Lecture	Anemia
67	7	Revision Lecture	GI Bleed
68	8	Revision Lecture	Liver Diseases
69	9	Revision Lecture	Diabetes
70	10	Revision Lecture	Thyroid disorders

MBBS Third part - 2
Tutorials/Seminars/Integrated teachings- 125 hours

Tutorials- ECG- Total 10 hours

S. No.	Topics	Hours
1.	Approach to basics of ECG	1 hr
2.	Reading Normal ECG	1 hr
3.	ECG: Chamber enlargement	1 hr
4.	Myocardial Infarction	1 hr
5.	Electrolyte abnormalities on ECG	1 hr
6.	Narrow Complex tachyarrhythmias	1 hr
7.	Bradyarrhythmias	1 hr
8.	Valvular Heart diseases	1 hr
9.	Bundle branch blocks	1 hr
10	Miscellaneous	1 hr

X Rays- Total 11 hours

S. No.	Topics	Hours
1.	Basics of Chest X Ray	1 hr
2.	Reading Normal X Ray Chest	1 hr
3.	Abnormalities on Chest X Ray – Cardiovascular system	1 hr
4.	Pulmonary venous hypertension vs pulmonary arterial hypertension	1 hr
5.	Chest X ray – Respiratory system	1 hr
6.	Abdominal system(Chest & Abdomen X Ray)	1 hr
7.	Miscellaneous X ray	1 hr
8.	Basics of CT Scan	1 hr
9.	Basics of MRI	2 hr
10.	Basics of PET scan	1 hr

Drugs- Total 21 hours

S. No.	Topics	Hours
1.	Anti epileptics	1 hr
2.	Cardiovascular Drugs	1 hr
3.	Anti Tubercular Therapy	1 hr
4.	Anti Retroviral Therapy	1 hr
5.	Emergency Drugs	2 hr
6.	Antiviral Drugs	1 hr
7.	Drugs in respiratory system	1 hr
8.	Glucocorticoids	1 hr
9.	Drugs in Rheumatology	1 hr
10.	Anticoagulants	1 hr
11.	Inotropes and inodilators	2 hr
12.	Anti hypertensives	2 hr
13.	Antidiabetic drugs	2 hr

Interpretation of Lab Charts- Total 14 hours		
S. No.	Topics	Hours
1.	Interpretation of Ascitic fluid analysis	1 hr
2.	Interpretation of Pleural fluid analysis	1 hr
3.	Interpretation of Cerebrospinal fluid analysis	1 hr
4.	Interpretation of Abnormal LFT	1 hr
5.	Interpretation of Hb, CBC, RBC indices	1 hr
6.	Interpretation of thyroid function test	1 hr
7.	Interpretation of Peripheral blood smear	1 hr
8.	Interpretation of urine analysis	1 hr
9.	Interpretation of Fundus examination	1 hr
10.	Interpretation of renal function tests	1 hr
11.	Interpretation of Bone marrow studies	1 hr
12.	Interpretation of ABG	2 hr
Seminars- Total 50 hours		
S. No.	Topics	Hours
1.	Clinical approach to Hypertensive emergencies	1 hr
2.	Clinical approach to Acute myocardial infarction	1 hr
3.	Clinical approach to solitary Seizure	1 hr
4.	Clinical approach to ischemic stroke	1 hr
5.	Clinical approach to intracranial bleed	1 hr
6.	Clinical approach to Heart Failure	1 hr
7.	Clinical approach to Acute renal failure	1 hr
8.	Clinical approach to Chronic kidney disease	1 hr
9.	Clinical approach to hyponatremia	1 hr
10.	Clinical approach to potassium imbalance disorders	1 hr
11.	Clinical approach to disorders of calcium metabolism	1 hr
12.	Interpretation of ABG	1 hr
13.	Mixed Acid Base disorders	1 hr
14.	Emerging Viral Infections	1 hr
15.	Clinical approach to Geriatric Syndromes	1 hr
16.	Clinical approach to a case of Pulmonary Tuberculosis	1 hr
17.	Clinical approach to a case of Extra Pulmonary Tuberculosis	1 hr
18.	Clinical Approach to a case of PLHIV	1 hr
19.	Clinical approach to opportunistic infections in a case of PLHIV	1 hr
20.	Clinical approach to prescription of ART	1 hr
21.	Clinical approach to a case of Dengue	1 hr
22.	Clinical approach to a case of Complicated malaria	1 hr
23.	Recent advances in the diagnosis of tuberculosis	1 hr
24.	Vaccines for tuberculosis	1 hr
25.	Recent advances in anti retroviral drugs	1 hr
26.	Clinical approach to a case of Interstitial lung disease	1 hr
27.	Clinical approach to a case of snake bite	1 hr
28.	Clinical approach to a case of electric injury	1 hr
29.	Clinical approach to a case of acute meningitis	1 hr

30	Clinical approach to a case of Chronic meningitis	1 hr
31	Ageing	1 hr
32	Human Microbiome	1 hr
33	Clinical approach to oncological emergencies	1 hr
34	Clinical approach to a case of Acute Leukemia	1 hr
35	Clinical approach to a case of Chronic leukemia	1 hr
36	Medicolegal, socioeconomic and ethical issues as it pertains to organ donation	1 hr
37	Role of physician in community	1 hr
38	Medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care	1 hr
39	Medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care	1 hr
40	Medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects	1 hr
41	Medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)	1 hr
42	Documentation in health care (including correct use of medical records)	1 hr
43	Use of information technology that permits appropriate patient care and continued learning	1 hr
44	Understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors	1 hr
45	Conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts	1 hr
46	Clinical approach to a case of DIC	1 hr
47	Clinical approach to a case of arthritis	1 hr
48	Clinical approach to a case of multisystem involvement	1 hr
49	Clinical approach to a case of peripheral neuropathy	1 hr
50	Clinical approach to a case of flaccid quadriplegia	1 hr

Integrated teachings -MBBS Third part 2 (Total 19 hours)

S.No.	Subject	Hours	Topics for integration
1.	Care of patients during Pandemics	6 hours	Interactive Discussion- 2 hours Triage practices to be followed Primary care to be given to a patient on reaching hospital Steps to be taken to reduce transmission of infections in emergency area Role Play- 1 hour Visit to hospital with discussion with staff- 2 hour Debriefing and feedback- 1 hour
2.	Emergency Procedures during Pandemics	8 hours	Interactive Discussion – 2 hours 1. Indications for invasive procedures in Pandemics 2. Points to be verified before emergency procedures 3. Steps to be taken to reduce transmission of infections 4. Attitude and Communication Issues related to complicated procedures II. Skill development program – with mannequins e.g. intubation, CPR, ALS, PALS etc - 4 hours (This may be linked with the routine Skill training component as well)

			<p>III. Role Plays for communication skills and documentation - 1 hour</p> <p>IV. Debriefing and Feedback -1hour</p>
3.	Managing Death during Pandemics	2 hours	<p>Interactive discussion – 1 hour</p> <p>a. Confirmation and documentation of death</p> <p>b. Steps to be taken to reduce transmission of infections</p> <p>c. Attitude and Communication Issues related to handling of dead bodies</p> <p>d. Responding to media</p> <p>ii. Role Play for communication skills and documentation with debriefing and feedback - 1 hour</p>
4.	Geriatrics	3 hr	<p>Polypharmacy</p> <p>Falls</p> <p>Incontinence</p>

Maharashtra University of Health Sciences
General Medicine

Fourth professional Part II MBBS

Subject: General Medicine

Clinical Posting (8+4 weeks, 6 days a week, 3 hours per day)

(Based on Medical Council of India, Competency based Undergraduate curriculum
for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : $70+ 125+15 + 144+ 72 = 426$
2. A. Lectures(hours): **70** B. Self-directed learning (hours) : **15**
C. Clinical Postings (hours): $144+72 = 216$
D. Small group teachings/tutorials/Integrated teaching/Practicals (hours): **125**

Term I/II

Posting	Clinical skills hours	Procedural Skills hours	Assessment hours	Total hours
Third clinical posting of 8 weeks	118	20	06	144
Revision posting of 4 weeks	72			

Note - The details of day to day schedule of 144+ 72 hours as per clinical, procedural and attitudinal internal medicine competencies to be taught will be submitted later (please see second professional year clinical posting)

Maharashtra University of Health Sciences

Internal Assessment General Medicine

Phase	IA – 1 -Exam			IA – 2 -Exam		
	Theory (Gen Med only) (January)	Practical EOP	Total Marks	Theory (Gen Med only) (May)	Practical of Allied	Total Marks
Second MBBS	50	50	100	50	50 (divided into three allied subjects as follows)	100
					DVL = 15 marks	
					Psychiatry = 15 marks	
					Respiratory Medicine = 20 marks	

* The marks for internal assessment – 2 shall be communicated by DVL, Psychiatry and Respiratory Medicine departments to General Medicine department immediately after completion of examination and assessment.

Phase	IA – 3 -Exam			IA – 4 -Exam		
	Theory (Gen Med and Allied) (January)	Practical EOP (Including 10 marks for Journal / Log Book)	Total Marks	Theory (Gen Med and Allied) (April)	Practical of Allied	Total Marks
Third MBBS Part I	50	40+10=50	100	50	50 (divided into two allied subjects as follows)	100
					DVL = 25 marks	
					Psychiatry = 25 marks	

* The marks for internal assessment – 4 shall be communicated by DVL and Psychiatry departments to General Medicine department immediately after completion of examination and assessment.

Phase	IA – 5 -Exam			Prelim Exam		
	Theory (General Medicine and Allied) (May)	Practical EOP (Including 10 marks for Journal / Log Book)	Total Marks	Theory General Medicine and Allied) (November)	Practical	Total Marks
Third MBBS Part II	100	90+10=100	200	100 x 2 papers = 200	200	400

There will be End of Postings Exam at each end of posting. (There will be **FORMATIVE ASSESSMENT** at the End of four weeks Clinical Posting of General Medicine NOT to be added to INTERNAL ASSESSMENT).

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 6 internal assessment examinations in General Medicine including allied.
2. The suggested pattern of question paper for internal assessment, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 50 (theory) +50 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	100	100
Phase III/I	100	100
Phase III/II	300	300
Total	500	500
Conversion out of	50	50
Conversion formula	Total marks in 6 IA theory examinations /10	Total marks in 6 IA Practical examinations /10
Eligibility criteria after conversion	20	20
	Combined theory + Practical = 50	

4. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

5. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
6. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

7. Remedial measures

A. Remedial measures for non-eligible students

- i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically.
- ii) Extra classes for such students may be arranged. If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
- iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination (as per final examination pattern)	200	200
Conversion out of	50	50
Conversion formula	Marks in remedial theory examinations /4	Marks in remedial Practical examinations /4
Eligibility criteria after conversion	20	20
	Combined theory + Practical = 50	

B. Remedial measures for absent students:

- i. If any of the students is absent for any of the 6 IA examinations due to any reasons, following measures shall be taken.
- ii. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
- iii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
- iv. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Internal Assessment Practical Examinations

II MBBS

Internal Assessment - 1

General Medicine

Subject: General Medicine Practical (IA – 1)					
Case	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
10	10	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

OSCE DETAILS: 1. History taking of a particular symptom;
2. Demonstration of signs- Pulse/BP/JVP;
3. Identification of General examination findings etc.
4. Communication Skills with patient or relative etc.

Viva on Drugs: Drugs Indication/Contraindication/ Adverse Effects etc.

Viva on emergency : eg. Snake bite, OP poisoning, Status asthmatics etc.

Internal Assessment - 2

DVL, Psychiatry and Respiratory Medicine (to be conducted at the end of respective clinical postings)

Subject: General Medicine Allied Practical (IA – 2) Examination in DVL		
Case	Viva	Practical Total
10	5	15
Subject: General Medicine Allied Practical (IA – 2) Examination in Psychiatry		
Case	Viva	Practical Total
10	5	15
Subject: General Medicine Allied Practical (IA – 2) Examination in Respiratory Medicine		
Case	Viva	Practical Total
15	5	20

* The marks for internal assessment – 2 shall be communicated by DVL, Psychiatry and Respiratory Medicine department to General Medicine department immediately after completion of examination and assessment.

III MBBS Part I

Internal Assessment - 3

General Medicine

Subject: General Medicine Practical (IA – 3)					
Case	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
20	5	5	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

- OSCE DETAILS:**
1. History taking of a particular symptom;
 2. Demonstration of General examination findings;
 3. Demonstration of systemic findings
 4. AETCOM or Communication Skills with patient or relative.

Internal Assessment - 4

DVL and Psychiatry

Subject: General Medicine Allied Practical (IA – 4)			
Examination in DVL			
Case	OSCE 1	Viva	Practical Total
10	5	10	25
Subject: General Medicine Allied Practical (IA – 4)			
Examination in Psychiatry			
Case	OSCE 1	Viva	Practical Total
10	5	10	25

* The marks for internal assessment – 4 shall be communicated by DVL / Psychiatry department to General Medicine department immediately after completion of examination and assessment.

III MBBS Part II

Internal Assessment - 5

General Medicine

Subject: General Medicine Practical (IA – 5)							
Long Case	OSCE1	OSCE2	OSCE 3	OSCE 4	Viva	Journal & log book	Practical Total
50	5	5	5	5	20	10	100

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

OSCE DETAILS-

1. Demonstration of signs – (Deep Tendon Reflex, Tone, Power of Muscle, Palpation of spleen and liver);
2. Demonstration of systemic findings
3. Certifiable procedural skills
4. AETCOM or Communication Skills with patient or relative etc.

Viva – X-ray, ECG, Instruments, Drugs

MUHS final practical examination

General Medicine

Subject: General Medicine Practical					
Long Case	Short Case – 1	Short Case -2	OSCE * 4 Stations (15 x 4)	<u>Viva</u> (Table 1 – Instruments, Drugs, Emergencies Table 2- X-rays, ECGs, Laboratory reports) (2 tables of 20 marks each)	Practical Total
50	25	25	60	40	200

OSCE Stations may include General examinations, Local examinations, psychomotor skills, Communication skills, AETCOM etc.

OSCE 1 – Clinical Skills

OSCE 2 – Certifiable procedural skills

OSCE 3 – Certifiable procedural skills

OSCE 4 – AETCOM related skills

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
Format / Skeleton of question paper for 1st & 2nd internal

Assessment Theory Examinations.

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General Medicine) (1x1=10)
- a) b) c) d) e) f) g) h) i) j)

Instructions:

- 1) Use blue/black ball point pen only.
- 2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) All questions are compulsory.
- 4) The number to the right indicates full marks.
- 5) Draw diagrams wherever necessary.

2. Long Answer Question (Any 2 out of 3) (General Medicine) (2 x 10 = 20)

a) b) c)

3. Short answer questions (Any 4 out of 5) (At least 2 Clinical reasoning question) (General Medicine) (4 x 5 = 20)

a) b) c) d) e)

Topics for 1st & 2nd internal assessment are according to the syllabus covered till date of respective Internal Assessment examination.

**Format / Skeleton of question paper for 3rd and 4th internal
Assessment Theory Examinations (III MBBS Part I)**

Instructions:

SECTION "A" MCQ

- 5) Put in the appropriate box below the question number once only.
- 6) Use blue ball point pen only.
- 7) Each question carries **One mark**.
- 8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General Medicine) (1x10=10)
- a) b) c) d) e) f) g) h) i) j)

Instructions:

- 1) Use blue/black ball point pen only.
- 2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) All questions are compulsory.
- 4) The number to the right indicates full marks.
- 5) Draw diagrams wherever necessary.

2. Long Answer Question (Any 2 out of 3) (General Medicine) (2 x 10 = 20)
- a) b) c)
3. Short answer questions (1 from AETCOM) (General Medicine) (2 x 5 = 10)
- a) b)
4. Short answer questions (Any 2 out of 3) (At least 2 Clinical reasoning question) (DVL, Psychiatry & Respiratory Medicine) (2 x 5 = 10)
- a) b) c)

Separate answer sheets for question 4 (SAQ from DVL, Psychiatry & Respiratory Medicine) may be used for the ease of evaluation.

Format / Skeleton of question paper 5th internal assessment
Theory Examinations (III MBBS Part II)

Instructions:

SECTION "A" MCQ

- 9) Put in the appropriate box below the question number once only.
- 10) Use blue ball point pen only.
- 11) Each question carries **one mark**.
- 12) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20 MCQ) (1 x20=20)
- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use blue/black ball point pen only.
 - 2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) All questions are compulsory.
 - 4) The number to the right indicates full marks.
 - 5) Draw diagrams wherever necessary.

SECTION "B" (60Marks)

- 2 . Long Answer Questions (Any 2 out of 3) (Structured Case Based) (General Medicine) (2x15=30)
- a) b) c)
- 3.Short Answer Questions (Any 2 out of 3) (Any one should be Clinical reasoning), 1 from AETCOM (General Medicine) (2x5=10)
- a) b) c)
- 4.Short Answer Questions (Any 4 out of 5) (General Medicine) (4 x 5 =20)
- a) b) c) d) e)

SECTION "C" –Allied (20Marks)

5. Short Answer Questions (allied DVL, Psychiatry & Respiratory Medicine) (4 x 5=20)
- a) b) c) d)

Separate answer sheets for question 4 (SAQ from DVL, Psychiatry & Respiratory Medicine) may be used for the ease of evaluation.

**Format / Skeleton of question paper for University
Theory Examinations (III MBBS Part II) Paper – I**
(Subject names to be removed)

Instructions:

SECTION "A" MCQ

- 13) Put in the appropriate box below the question number once only.
- 14) Use blue ball point pen only.
- 15) Each question carries **One mark**.
- 16) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each) – (General Medicine) (1 x20=20)
- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use blue/black ball point pen only.
 - 2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) All questions are compulsory.
 - 4) The number to the right indicates full marks.
 - 5) Draw diagrams wherever necessary.

SECTION "B"

- 2 . Long Answer Questions (Structured Case Based) (General Medicine) (2x15=30)
- a) b)
- 3.Short Answer Questions (Any one should be Clinical reasoning, 1 from AETCOM) (General Medicine) (3x5=15)
- a) b) c)

SECTION "C"

4. Long Answer Question (Structured Case Based) (General Medicine) (1 x15=15)
- a)
- 3.Short Answer Questions (General Medicine) (Any 4 out of 5) (4 x5=20)
- a) b) c) d) e)

**Format / Skeleton of question paper for University
Theory Examinations (III MBBS Part II) Paper II**
(Subject names to be removed)

Instructions:

SECTION "A" MCQ

- 17) Put in the appropriate box below the question number once only.
- 18) Use blue ball point pen only.
- 19) Each question carries **One mark**.
- 20) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General Medicine , 2 DVL, 2 Respiratory Medicine, 1 Psychiatry) (1 x20=20)
- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use blue/black ball point pen only.
 - 2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) All questions are compulsory.
 - 4) The number to the right indicates full marks.
 - 5) Draw diagrams wherever necessary.

SECTION "B"

- 2 . Long Answer Questions (Structured Case Based) (General Medicine) (2x15=30)
- a) b)

SECTION "C"

- 3.Short Answer Questions (any 4 out of 5) (DVL) (4x5=20)
- a) b) c) d) e)
- 4.Short Answer Questions (Any 3 out of 4) (Psychiatry) (3 x5=15)
- a) b) c) d)
- 5.Short Answer Questions (Any 3 out of 4) (Respiratory Medicine) (3 x5=15)
- a) b) c) d)

Indian Medical Graduate Training Programme The undergraduate medical education programme 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.

COMPETENCY BASED CURRICULUM OF THE INDIAN MEDICAL GRADUATE PROGRAMME Specific

Competencies- 1. Preamble 2. Integration 3. Pre-clinical Subjects 4. Second Professional (Para-Clinical) 5. Third Professional (Part I). 6. Third Professional (Part II).

Institutional Goals of Indian Medical Graduate Training Programme:-(Ref. THE GAZETTE OF INDIA : EXTRAORDINARY [PART III—SEC. 4]).

(1) 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, palliative and rehabilitative medicine in respect to the commonly encountered health problems. **(c)** appreciate rationale for different therapeutic modalities; be familiar with the administration of “essential medicines” and their common adverse 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 Programmes 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 levels of service delivery **(vii)** Bio-medical waste disposal **(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, hospital management, 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 such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

(2) 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.

Table 9: Learner - Doctor programme (Clinical Clerkship)

Year of Curriculum	Focus of Learner - Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness
Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

Table 5: Second Professional teaching hours

Subjects	Lectures (hours)	Small group learning (Tutorials / Seminars) /Integrated learning (hours)	Clinical Postings (hours) *	Self - Directed Learning (hours)	Total (hours)
Pathology	80	138	-	12	230
Pharmacology	80	138	-	12	230
Microbiology	70	110	-	10	190
Community Medicine	20	30	-	10	60
Forensic Medicine and Toxicology	15	30	-	5	50
Clinical Subjects	75**	-	540***	-	615
Attitude, Ethics & Communication Module (AETCOM)	-	29	-	8	37
Sports and extracurricular activities	-	-	-	28	28
Total	-	-	-	-	1440

* At least 3 hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories. Hours may be distributed weekly or as a block in each posting based on institutional logistics.

** 25 hours each for Medicine, Surgery and Gynecology & Obstetrics.

***The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday).

Table 1: Time distribution of MBBS Programme & Examination Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
							Foundation Course	I MBBS			
I MBBS								Exam I MBBS	II MBBS		
II MBBS								Exam II MBBS	III MBBS		
III MBBS Part I								Exam III MBBS Part I	Electives & Skills		
III MBBS Part II											
Exam III MBBS Part II	Internship										
Internship											

- One month is provided at the end of every professional year for completion of examination and declaration of results.

Table 8: Clinical postings

Subjects	Period of training in weeks			Total weeks
	II MBBS	III MBBS Part I	III MBBS Part II	
Electives	-	-	8* (4 regular clinical posting)	4
General Medicine ¹	4	4	8+4	20
General Surgery	4	4	8+4	20
Obstetrics & Gynaecology ²	4	4	8+4	20
Pediatrics	2	4	4	10
Community Medicine	4	6	-	10
Orthopedics - including Trauma ³	2	4	2	8
Otorhinolaryngology	4	4	-	8
Ophthalmology	4	4	-	8
Respiratory Medicine	2	-	-	2
Psychiatry	2	2	-	4
Radiodiagnosis ⁴	2	-	-	2
Dermatology, Venereology & Leprosy	2	2	2	6
Dentistry & Anesthesia	-	2	-	2
Casualty	-	2	-	2
	36	42	48	126

* In four of the eight weeks of electives, regular clinical postings shall be accommodated.

Clinical postings may be adjusted within the time framework.

¹ This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I).

² This includes maternity training and family welfare (including Family Planning).

³ This posting includes Physical Medicine and Rehabilitation.

⁴ This posting includes Radiotherapy, wherever available.

Table 2: Distribution of subjects by Professional Phase

Phase & year of MBBS training	Subjects & New Teaching Elements	Duration#	University examination
First Professional MBBS	<ul style="list-style-type: none"> • Foundation Course (1 month) • Human Anatomy, Physiology & Biochemistry, introduction to Community Medicine, Humanities • Early Clinical Exposure 	1 + 13 months	I Professional

	<ul style="list-style-type: none"> • Attitude, Ethics, and Communication Module (AETCOM) 		
Second Professional MBBS	<ul style="list-style-type: none"> • Pathology, Microbiology, Pharmacology, Forensic Medicine and Toxicology, • Introduction to clinical subjects including Community Medicine • Clinical postings • Attitude, Ethics & Communication Module (AETCOM) 	12 months	II Professional
Third Professional MBBS Part I	<ul style="list-style-type: none"> • General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radiodiagnosis & Radiotherapy, Anesthesiology • Clinical subjects /postings • Attitude, Ethics & Communication Module (AETCOM) 	13 months	III Professional (Part I)
Electives	<ul style="list-style-type: none"> • Electives, Skills and assessment* 	2 months	
Third Professional MBBS Part II	<ul style="list-style-type: none"> • General Medicine, Pediatrics, General Surgery, Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties • Clinical postings/subjects • Attitude, Ethics & Communication Module (AETCOM) 	13 months	III Professional (Part II)

*Assessment of electives shall be included in Internal Assessment.

Table 6: Third Professional Part I teaching hours

Subjects	Teaching Hours	Tutorials/ Seminars /Integrated Teaching (hours)	Self- Directed Learning (hours)	Total (hours)
General Medicine	25	35	5	65
General Surgery	25	35	5	65
Obstetrics and Gynecology	25	35	5	65
Pediatrics	20	30	5	55
Orthopaedics	15	20	5	40
Forensic Medicine and Toxicology	25	45	5	75
Community Medicine	40	60	5	105
Dermatology	20	5	5	30
Psychiatry	25	10	5	40
Respiratory Medicine	10	8	2	20
Otorhinolaryngology	25	40	5	70
Ophthalmology	30	60	10	100
Radiodiagnosis and Radiotherapy	10	8	2	20
Anesthesiology	8	10	2	20
Clinical Postings*	-	-	-	756
Attitude, Ethics & Communication Module (AETCOM)		19	06	25
Total	303	401	66	1551

* The clinical postings in the third professional part I shall be 18 hours per week (3 hrs per day from Monday to Saturday).

Table 7: Third Professional Part II teaching hours

Subjects	Teaching Hours	Tutorials/Seminars / Integrated Teaching (hours)	Self - Directed Learning (hours)	Total* (hours)
General Medicine	70	125	15	210
General Surgery	70	125	15	210
Obstetrics and Gynecology	70	125	15	210
Pediatrics	20	35	10	65
Orthopaedics	20	25	5	50
Clinical Postings**				792
Attitude, Ethics & Communication Module (AETCOM)***	28		16	43
Electives				200
Total	250	435	60	1780

* 25% of allotted time of third professional shall be utilized for integrated learning with pre- and para- clinical subjects and shall be assessed during the clinical subjects examination. This allotted time will be utilized as integrated teaching by para-clinical subjects with clinical subjects (as Clinical Pathology, Clinical Pharmacology and Clinical Microbiology).

Distribution of Marks – Total 10 Marks

Sr. No.	Parameter		Marks	Phase
1	Drugs	5 Drugs	1	II (Second year)
		5 Drugs	1	III Part I (Third year)
		5 Drugs	1	III Part II (Fourth year)
2	Cases	CVS case-4	1	III Part I (Third year)
		RS Case-4	1	III Part I (Third year)
		Abdomen case-4	1	III Part I (Third year)
		Neurology case-4	1	III Part II (Fourth year)
3	Emergencies	2 Emergencies	1	II (Second year)
		5 Emergencies	1	III Part I (Third year)
		5 Emergencies	1	III Part II (Fourth year)
	Total-		10	

Drugs

Name of Drug-

Class/ Group of Drug-

Mechanism of action-

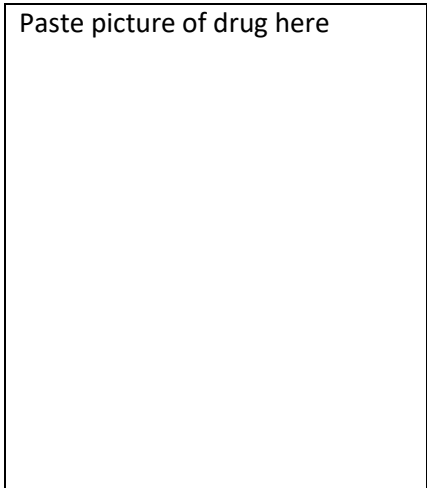
Dose of drug-

Indications-

Contraindications-

Adverse effects-

Paste picture of drug here



List the emergencies in which this drug is used

Pages 1 to 10 for 10 Drugs

Cases

Respiratory system case Proforma

History

- I. *Cardinal symptoms:* Breathlessness, Cough, Expectoration, Hemoptysis,, Wheeze, Chest pain.
- II. *History of tuberculosis:* Evening rise of temperature, night sweats, Anorexia and weight loss, Hemoptysis, Pleurisy, meningitis, lymphadenitis in pastor in family, TB contact.
- III. *History of Mediastinal compression:* Dysphagia, Hoarse voice, Dyspnea and dry cough, Swelling over face
- IV. *Habits:* Alcohol, smoking, tobacco or gutkachewing
- V. *Aspiration:* Foreign bodies, vomitus.
- VI. *For Industrial diseases:* Occupation, residence near factories or mills
- VII. *Allergy:* Family history of asthma, hay fever, eczema, Rhinitis and Sinusitis: Nasal discharge, pain and tenderness over sinuses, headache, recurrent cold
- VIII. *Past history:* Measles, influenza or whooping cough in childhood (If bronchiectasis), Diabetes
- IX. Past history of admissions in the hospital/ consultation with a doctor
- X. Drug history-H/O medication patient is taking or has received in the past

General Examination

- I. *Built and nutrition*
- II. *Nails and conjunctiva:* Pallor, clubbing, cyanosis, icterus
- III. *Lymphadenopathy* (especially scalene node and cervical nodes), edema of feet, JVP
- IV. *TPR, BP*
- V. *Spine*

- VI. *Stigma of tuberculosis*: Phlyctenular conjunctivitis, Scars and sinuses in neck or bones, Thickened spermatic cord, Erythema nodosum, Skin: Cutis vulgaris, scrofuloderma etc.
- VII. *Neck*: Thyroid swelling. Tracheal tug
- VIII. *Homer's syndrome*: Ptosis, miosis, anhidrosis, enophthalmos and absent ciliospinal reflex
- IX. *Upper respiratory tract*: Sinus tenderness, Throat and tonsils, Posterior pharyngeal wall for posterior nasal drip, Alae nasi.
- X. Gums and teeth. Exposure to TB, STD, HIV

Respiratory System Examination

I. Inspection:

A. Shape of chest

1. AP and transverse diameters: Barrelshaped chest, etc.
2. Hollowing, bulging, flattening or retraction
3. Sub-costal angle
4. Shoulders
5. Spine
6. Spinoscapular distance on both sides

B. Respiratory Movements

1. Respiratory rate
2. Rhythm
3. Character - Abdominal, thoracic, thoraco-abdominal or abdominothoracic
4. Equality
5. Accessory muscles of respiration
6. Inter-costal retraction or fullness

C. Mediastinum

1. Trailes sign
2. Apex impulse

D. Miscellaneous

1. I. Scars, sinuses

2. Pulsations
3. Dilated veins
4. Shiny skin over lower chest (Empyema, hepatic amebiasis)

II. Palpation

A. Findings of inspection confirmed including

Chest Movements

B. Mediastinum

1. I. Trachea
2. Apex beat

C. TACTILE VOCAL FREMITUS: TVF

D. Miscellaneous

Tenderness over lower inter costal spaces.

Other vibrations: Palpable rates, rhonchi,

Rub

III. Percussion:

A. Anteriorly

Rig/rt Side Left Side

1. Kronig's isthmus Kronig's isthmus.
2. Clavicular percussion Clavicular percussion
3. Intercostal resonance Intercostal resonance
4. Liver dullness Cardiac dullness
5. Tidal percussion Traube's area
6. Shifting dullness Shifting dullness
7. Percussion myokymia Percussion myokymia
8. Skodaic resonance

B. Posteriorly

1. Supra-scapular
2. Inter-scapular
3. Infra-scapular

C. In Axilla

1. Axillary
2. Infra axillary

IV. Auscultation:

A. Breath Sounds

1. Normal or Diminished
2. Type: Vesicular, bronchial or vesicular

with prolonged expiration

B. Foreign Sounds: Rales, rhonchi or rub

C. Vocal Resonance

D. Miscellaneous

1. Bronchophony
2. Egophony
3. Whisperin g pectoriloquy
4. Succussion splash
5. Coin test
6. Post-tussive suction
7. Post-tussive rales

Differential/ Final Diagnosis

Anatomy (Where is the lesion?) e.g. Right upperlobe

Pathology (What is the lesion?) e.g. pneumonia

Etiology (What is the cause?) e.g. streptococci

Complications e.g. lung abscess

Risk factors e.g. smoking

Cardiovascular system case -Proforma

History

- I. *Cardinal Symptoms:* Dyspnea on exertion or Breathlessness -including paroxysmal nocturnal dyspnea, orthopnea, platypnea and trepopnea, Chest Pain, Cough, Expectoration, Hemoptysis, Palpitation, Syncopal attacks

- II. *Symptoms of Congestive Cardiac Failure (CCF)* Exertional breathlessness, Edema of feet, puffiness of face, anasarca, Distension of abdomen and pain in right hypochondrium, anorexia, nausea, vomiting
- III. *Symptoms of Rheumatic Heart Disease (RHD)* Fever with sore throat, Fleeting joint pains and swelling, Involuntary movements (chorea), Nodules under the skin (rheumatic nodules)
- IV. *Symptoms of Infective Endocarditis (SBE)* Pyrexia, Petechial hemorrhages, Pads of finger are tender (Osler nodes), Palpable spleen, Phalangeal dubbing, Prolonged treatment with high doses of Penicillin, Hemoptysis, Hematuria, Hemiplegia, Phlebothrombosis
- V. *Symptoms Suggesting Congenital Heart Disease*- Cyanotic spells, Squatting episodes
- VI. *Pressure Symptoms* (Due to Enlarged Left Atrium or Aneurysm of Aorta)- Hoarseness of voice (pressure on the recurrent laryngeal nerve), Ortner's syndrome, Dysphagia (pressure on esophagus)
- VII. *Miscellaneous-*

Family History: Hypertension, diabetes, coronary artery disease, hyperlipidemia, congenital heart disease, cardiomyopathies

Past History of hypertension, diabetes, coronary artery disease, hyperlipidemia, obesity, recurrent lower respiratory infection, tuberculosis, syphilis, STD, HIV infection,

History of hospitalization Number of admissions, Duration of each admission, Investigations done e.g. ECG, X-ray, Echocardiography, cardiac catheterization, Diagnosis reached, if known; Drugs given e.g. diuretics, digitalis, Relief obtained or not, Advised surgery/intervention or not, *History of cardiac surgery, angioplasty or*

Valvuloplasty

Physical Examination

General Examination

- A. Build and nutrition
- B. Nails and conjunctiva for pallor, icterus, dubbing, cyanosis.
- C. Lymphadenopathy and thyroid swelling
- D. Edema

- E. Skin for petechial hemorrhages, Osler nodes, rheumatic nodules, xanthelasmas, xanthomas
- F. Skeletal system - Kyphoscoliosis, polydactyly, cubitus valgus, etc.
- G. TPR, BP
- H. Features of Marfan's syndrome - tall, thin person with long slender fingers, hyperextensibility of joints, high arched palate, dislocation of lens

Peripheral

- A. JVP - pressure and waves
- B. Pulse - rate, rhythm, volume, character, equality, upstroke, downstroke, condition of vessel wall, apex pulse deficit and radiofemoral delay, carotid bruit.
- C. Blood Pressure - both arms, supine and upright
- D. Peripheral signs of wide pulse pressure as in AI, PDA, etc. e.g., pistol shot sounds over the femorals, Duroziez murmur, Corrigan's sign, de Musset's sign, Quincke's sign, locomotor brachia!

II. Central

A. Inspection:

1. I. Precordium
2. Apex impulse
3. Other pulsations - Parasternal, epi-gastric, suprasternal, in the neck, in the second left space and on right side
4. Dilated veins
5. Scars, sinuses, etc.

B. Palpation:

1. Apex beat
2. Left parasternal heave
3. Diastolic shock (Palpable S2)
4. Thrills
5. Other pulsations

C. Percussion:

1. Left second and intercostal space dullness

2. Upper border
3. Right border
4. Left border
5. .Lower sternal resonance
6. Liver dullness and Stomach tympany for situs solitus or inversus

D. Auscultation:

1. Heart sounds
2. Murmurs - Systolic, diastolic or continuous. Other sounds e.g. pericardia! rub, opening snap, ejection clicks, etc.

Differential/ Final Diagnosis-

Central Nervous System Proforma

History

I. Name, Age, Sex, Occupation, Right or Lefthanded, Consanguinity

II. Motor symptoms

A. *Power:*

1. *Upperlimbs:*

a) Proximal: Lifting the arm above the head, eating.

b) Distal: Sewing, writing, buttoning, turning a key in a lock, etc.

2. *Lower limbs:*

a) Proximal: Climbing stairs up and down, squatting and getting up from squatting position.

b) Distal: Slippers falling from foot

c) Running, walking with or without support, standing with or without support, moving limbs in bed or complete paralysis.

Truncal : turning in bed.

B. *Nutrition:* Wasting of muscles (proximal or distal), atrophy, hypertrophy.

C. *Coordination:*

1. Unsteadiness (For cerebellar ataxia).

2. Difficulty in feeling the ground and unsteadiness increasing in the dark. (For sensory ataxia).

3. Difficulty in reaching the target.

D. *Involuntary movements:* Chorea, athetosis, tremors, dystonia, hemiballismus, flexor spasms, fasciculations, titubation.

III. Sensory symptoms

A. Tingling, numbness, root pains

B. Feeling hot and cold water during a bath

C. Feeling the ground well or ground feels like cotton wool.

IV. Sphincter disturbances

A. *Bladder:*

1. Feeling the sensation of bladderfullness
2. Initiation of micturition immediatelywhen desired
3. Control of micturition, once the desireto micturate has occurred
4. Complete evacuation of the bladderor a feeling of residual urine
5. Inability to pass urine at all
6. History of catheterization

B. *Bowel*: Constipation / Loose Stools

C. *Impotency*: In males

Cranial nerves

A. *Sensation of smell* - **1st CN**

B. *Vision - acuity and color* - **2nd CN**

C. *Diplopia, squint* - **3rd, 4th, 6th CN**

D. Sensations (Tingling, numbness over the face, and difficulty in chewing) - 5th CN

E. *Facial asymmetry, dribbling of saliva fromthe angle of the mouth, stasis off ood in themouth-* **7th CN**

F. *Vertigo, tinnitus, deafness* - **8th CN**

G. *Hoarse voice, nasal twang, nasalregurgitatio*~~t~~*dysphagia* - **10th + 9th CN**

H. *Dysarthria* - **12th CN**

Abdomen case proforma

History

- I. Anorexia, nausea, vomiting, dysphagia, flatulence, eructation, retrosternal burning, water brash
- II. Diarrhea, constipation, clay stools, worms in stools, mucus and blood in stools
- III. Abdominal pain, lump, and distension
- IV. Hematemesis, melena, bleeding per rectum
- V. Jaundice, gynecomastia, loss of libido, loss of hair (for liver cell failure), reversal of normal sleep cycle.
- VI. Fever, weight loss
- VII. Alcohol, smoking
- VIII. Past history of tuberculosis, malaria, kala-azar, leukemia, hemolytic crisis (sudden pallor and dyspnea) sexual contact, drugs.

General Examination

- I. Vital signs - TPR, BP
- II. Built and nutrition, BMI (body mass index)
- III. Pallor, Clubbing, Nails (chalky-white nails koilonychia) cyanosis, icterus.
- IV. Edema feet, lymphadenopathy, JVP
- V. Signs of liver cell failure: Scanty hair, palmar erythema, spider nevi, parotid swelling, gynecomastia, testicular atrophy, Dupuytren's contractures, flaps (asterix), paper money skin.
- VI. Stigma of tuberculosis: Scars and sinuses in neck, lymphadenopathy, phlyctenular conjunctivitis, thickened spermatic cord, chest signs, etc.
- VII. Skin excoriations, ecchymosis or petechiae, cutaneous markers of GI malignancy.
- VIII. Eye : Kayser - Fleischer ring on slit lamp

Examination of cornea.

IX. Miscellaneous: Bony tenderness, genitals.

Alimentary System Examination

I. Oral cavity, Teeth, Tongue, Tonsils, Oropharynx

II. Abdomen:

A. Inspection: Skin, Shape of abdomen, Umbilicus, Abdominal movements, Pulsations, Dilated veins, Peristalsis, Scars and sinuses, Hernial orifices.

B. Palpation:

1. Tenderness, guarding and rigidity on superficial palpation.

2. Liver, spleen, kidney, gall bladder, colon, or any other lump (Its size, surface, borders, tenderness and bruit}

3. Fluid thrill

C. Percussion:

1. Horseshoe and shifting dullness.

2. Dullness over any lump, if palpable.

3. Renal angle tenderness (i.e. angle between one 12th rib & outer border of erector spinae) seen in perinephric abscess.

D. Auscultation:

1. Peristalsis 2. Rub 3. Arterial Bruit or venous hum 4. Puddles sign

E. Miscellaneous:

1. Abdominal girth 2. PR examination 3. Proctoscopy

Emergencies-

1. Basic Life support and Advanced cardiac Life support (BLS & ACLS)
2. Organophosphorous poisoning/ Paraquate poisoning
3. Snake bite
4. Anaphylactic shock
5. Acute myocardial infarction
6. Acute Complications of Acute myocardial infarctions
7. Upper GI Bleed/ Hematemesis
8. Hypertensive emergencies
9. Shock
10. Pulmonary embolism
11. Acute respiratory failure
12. Acute renal failure
13. Status asthmaticus
14. Severe hypokalemia
15. Severe hyperkalemia
16. Status epilepticus
17. Hepatic encephalopathy
18. Diabetic ketoacidosis
19. Hyperosmolar Coma
20. Severe hypoglycaemia



**Maharashtra University of
Health Sciences**

PHASE II to Phase IV MBBS

COMPETENCY BASED CURRICULUM-2019 batch

GENERAL MEDICINE LOG BOOK

NAME OF COLLEGE-

NAME OF STUDENT-

ROLL NUMBER-

BATCH – A/B/C/D/E/F

CONTENTS

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PERSONAL DETAILS

Name of student-

Mobile Number-

Residential Address-

Photo stick here

Father/Guardians contact no.

Email-

Email of Father/Guardian-

Date of admission to MBBS course-

Date of beginning of current phase-

LOGBOOK CERTIFICATE (General Medicine)

This is to certify that the candidate Mr/ Ms
....., Reg No, admitted in the
year 2019-20 in the ----- Medical College,----- has
satisfactorily completed / has not completed all assignments /requirements mentioned in this
logbook for Second to fourth year MBBS course in the subject(s) of General Medicine Foundation
Course/ AETCOM during the period from
..... to..... . She / He is / Eligible/ not eligible to appear for the summative
(University) assessment as on the date given below.

Signature of all Unit In charges-

Signature of Head of the Department

Principal/Dean of the College

Place:

Date:

GENERAL INSTRUCTIONS

1. The logbook is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her logbook.
2. The log book is a record of the academic / nonacademic activities of the student. Each Medical student is responsible for maintaining their logbook.
3. This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II to Phase IV Professional MBBS students in the subject of General Medicine.
4. Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly signed by the supervising faculty.
5. Entries in the logbook will be in accordance with activities done in the departments and has to be scrutinized by the Head of all the concerned departments.
6. The logbook shall be kept as record work of the candidate for that department / specialty & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A clear record of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least 5 years after completion of the examination. Institutions may be asked to provide these details by the University as and when required.
2. The contents in the log book are suggested guidelines. The institutions can make necessary changes as per the needs.
3. The student is responsible for getting the entries in the logbook verified by the Faculty in charge regularly.
4. Entries in the logbook will reflect the activities undertaken in the department & have to be scrutinized by the Head of the concerned department.
5. The logbook is a record of various activities by the student like:- Overall participation & performance, Attendance, Participation in sessions, Record of completion of pre-determined activities., Acquisition of selected competencies.

Record of Attendance for Theory and clinical postings

	Duration	Practical		Theory		Signature of Unit in charge/ HOD
		No of days	Days attended	No of days	Days attended	
Phase II						
First clinical posting	4 weeks					
Second clinical posting	4 weeks					
Phase III Part I	8 weeks					
Phase III Part I	4 weeks					

Dates of completion of clinical postings

Phase	From	To	Absent days	Journal completed	Signature of unit in charges with name and dates
II					
III Part I					
III Part II					

SCHEME OF EXAMINATION - Internal Assessment

Sr. No.	Internal assessment	Date/Month /Year	Marks obtained		Out of 4.5	Signature of student
			Theory out of	Practical out of		
1	First	September				
2	Second	September				
3	Third Part I	October				
4	Third Part II	January				
	Total					
	Round up-					

Duration and details of course

Sr. No.	Phases		Semester	No of Months
1	I	First professional Preclinical phase	Semester 1 & Semester 2	1 + 12 months
2	II	Second professional Paraclinical Phase	Semester 3 & Semester 4	11 Months
3	III Part I	Third professional Clinical Phase	Semester 5 & Semester 6	13 Months
4	Electives, skills and assessment			2 Months
5	III Part II	Third professional Clinical Phase	Semester 7, Semester 8 Semester 9	13 Months

Phase	Hours	Total hrs
First I		
Early clinical exposure	90	
Second II		
Lectures	75	615 hrs
Tutorial/Seminars/Integrated learning	--	-
Self directed learning	--	--
Third Part I		
Lectures	25	65 hrs
Tutorial/Seminars/Integrated learning	35	
Self directed learning	5	
Third Part II		
Lectures	70	210 hrs
Tutorial/Seminars/Integrated learning	125	
Self directed learning	15	

Theory teaching

Learner – Doctor Programme (Clinical clerkship) (Reference- The Gazette of India: Part III-sec.4 pg 74-74)

The learner will function as a part of the health care team with the following responsibilities:

- (i) Be part of the unit's outpatient services on admission days,
- (ii) Remain with the admission unit until 6 PM except during designated class hours,
- (iii) Be assigned patients admitted during each admission day for whom he/she will undertake responsibility, under the supervision of a senior resident or faculty member,
- (iv) Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
- (v) Follow the patient's progress throughout the hospital stay until discharge,
- (vi) Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients (according to responsibilities outlined in table 9),
- (vii) Participate in unit rounds on at least one other day of the week excluding the admission day,
- (viii) Discuss ethical and other humanitarian issues during unit rounds,
- (ix) Attend all scheduled classes and educational activities,
- (x) Document his/her observations in a prescribed log book / case record.
- (xi) No learner will be given independent charge of the patient.

Year of curriculum	Focus of Learner- Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness

Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

Details of internal assessment

Internal Assessment Subject: General Medicine

**Applicable w.e.f October 2020 onwards examination for batches admitted from
June 2019 onward**

Phase	I-Exam (At the end of first term)			II-Exam (At the end of second term)		
	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks
Second MBBS	50	50	100	50	50	100

Phase	I-Exam (At the end of first term)			II-Exam (At the end of second term)		
	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks
III/I MBBS	50	50	100	50	50	100

Phase	I-Exam (at the end of first term)			II-Exam Preliminary examination		
	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks
III/II	50	50	100	200	200	400

MBBS				(100 x 2 papers)		
------	--	--	--	------------------	--	--

1. There will be 5 internal assessment examinations (2 each in 2nd MBBS and 3rd Part I and 1 in 3rd Part II MBBS) in the Subject of General Medicine and 1 preliminary examination (3rd Part II MBBS). The structure of the internal assessment theory examinations should be similar to the structure of University examination.
2. It is mandatory for the students to appear for all the internal assessment Examinations in the respective phases. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.
3. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
4. Internal assessment marks for theory and practical will be converted to out of
5. 100. Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University.
6. Conversion Formula for calculation of marks in internal assessment examinations
7. Formula for Theory (out of 450) = Total marks/4.5 Formula for Practical (out of 450) = Total marks/4.5
8. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

9. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical Separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.
10. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

11. Preliminary examination (3rd Part II MBBS). The structure of the internal assessment theory examinations should be similar to the structure of University examination.
12. It is mandatory for the students to appear for all the internal assessment Examinations in the respective phases. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.
13. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
14. Internal assessment marks for theory and practical will be converted to out of
15. 100. Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University.
16. Conversion Formula for calculation of marks in internal assessment examinations
17. Formula for Theory (out of 450) = Total marks/4.5 Formula for Practical (out of 450) = Total marks/4.5
18. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

19. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical Separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.
20. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

Second MBBS Practical Mark's Structure

Internal Assessment Examinations

(Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards)

II MBBS- TERM-I

Seat No.	JOURNAL	LOG BOOK	OSCE-1	OSCE-2	OSCE-3	OSCE-4	CASE	Practical Total
Max. Marks	10	10	5	5	5	5	10	50

- **OSCE DETAILS:** 1. History taking of a particular symptom; 2. Demonstration of signs- Pulse/BP/JVP; 3. Identification of General Examination Finding; 4. Communication Skills with Pt or Relative

II MBBS- TERM-II

Seat No.	JOURNAL	LOG BOOK	OSCE-1	OSCE-2	OSCE-3	OSCE-4	CASE	Practical Total
Max. Marks	10	10	5	5	5	5	10	50

OSCE DETAILS: 1. Demonstration of Syst Exam signs; 2. Spot Diagnosis - Jaundice, Clubbing, LN etc; 3. Drugs Indication/Contraindication/ Adverse Effects Etc; 4. Equipment – Name / Indication/ Contraindications

Paper wise distribution of topics for Internal assessment
Year: Second MBBS
Subject: GENERAL MEDICINE

Internal Assessment	Section	Topics
I (50 marks)	Section A MCQs on all topics (15x1=15 marks)	Fever & Febrile Syndromes
	Section B SAQ on all topics (4x5=20)	HIV
	Section C LAQ on all topics (15x1=15 marks)	Diarrhoeal Diseases
		Envenomation
II (50 marks)	Section A MCQs on all topics (15x1=15 marks)	Pneumonia
	Section B SAQ on all topics (4x5=20)	Miscellaneous Infections
	Section C LAQ on all topics (15x1=15 marks)	Poisoning
		Nutrition & Vitamin Deficiencies

Year: III-I MBBS Subject: GENERAL MEDICINE

Internal Assessment	Section	Topics
I (50 marks)	Section A	Hypertension
	MCQs on all topics (15x1=15 marks)	Heart failure
	Section B	
	SAQ on all topics (4x5=20)	Acute MI/IHD
	Section C	The role of physician in the community
	LAQ on all topics (15x1=15 marks)	
		AET-COM

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Subject: General Medicine

Paper	Section	Topics
I (100 marks)	Section A MCQs on all topics of the paper I (20x1=20)	Fever & Febrile Syndromes
		HIV
		Diarrhoeal Diseases
		Pneumonia
		Envenomation
	Section B SAQ on all topics of the paper I (7x5=35)	Miscellaneous Infections
		Poisoning
		Nutrition & Vitamin Deficiencies
		Anaemia
		Obesity
	Section C LAQ on all topics of the paper I (3x15=45)	Hypertension
		Heart failure
		Acute MI/IHD
		The role of physician in the community
		AET-COM
II (100 marks)	Section A MCQs on all topics of the paper II (20x1=20)	GI Bleed
		Liver Diseases
		Mineral Fluid Electrolyte and acid base disorder
		Acute kidney injury and chronic renal failure
	Section B SAQ on all topics of the paper II (7x5=35)	Headache
		Cerebrovascular accident
		Movement disorder
		Diabetes
		Thyroid Dysfunction
	Section C LAQ on all topics of the paper II (3x15=45)	Rheumatological Problems
		Common Malignancies
		Geriatrics
		Psychiatry, Dermatology & Leprosy (DVL) and Respiratory Medicine including Tuberculosis
		AET – COM

**MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASIK
FORMAT / SKELETON OF QUESTION PAPER**

1. Course and Year : Second/ III-I/ III-II MBBS (applicable w.e.f. August 2021 & onwards examinations)	2. Subject Code _____
3. Subject (PSP) : _____ (TT) : _____	
4. Paper : I/II	5. Total Marks : _____ 6. Total Time : 3 Hrs. _____
7. Web Pattern : []	8. Web Skeleton : [] 9. Web Syllabus : [] 10. Web Old QP : []

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on marked.

SECTION "A" MCQ (_____ Marks)

1. Multiple Choice Questions (Total _____ MCQ of One mark each)

- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full marks**.
- 5) Draw diagrams **wherever** necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has to be maintained.
- 7) Use a common answerbook for all sections.

SECTION "B" (_____ Marks)

2 Short Answer Questions (Any _____ out of _____)

- a) b) c) d) e)

Long Answer Questions (Any _____ out of _____)

3 a) b) c)

SECTION "C" (_____ Marks)

4 Short answer questions (Any _____ out of _____)

- a) b) c) d) e)

5. Long Answer Questions (Any _____ out of _____)

- a) b) c)

Assessment of Skill competencies

Assessment of DOAP Sessions

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.12	Pulse examination with demonstration				
	1.13	Measure BP accurately				
	1.14	JVP				
	4.10	Examination of skin, lymph node, chest and abdominal examination				
	2.7	CVS Examination with demonstration				
	3.4 & 3.5	Orientation to history taking, general examination & systemic examination of Respiratory system				
Phase III part II (fourth year)	IM 3.9/ IM 5.15	Demonstrate in a mannequin and interpret results of a pleural fluid Aspiration				
	IM5.15	Assist in the performance and interpret the findings of an ascitic fluid analysis	Mannequins/bedside clinic/Real patient			
	M6.15/ M 17.8 17.9	Demonstrate in a model the correct technique to perform a lumbar Puncture	Mannequins/bedside clinic/ Real patient			
Feedback by Faculty-						
Phase II						
Phase III Part I						
Phase III Part II						

Assessments of Skill acquisition Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.30	Intramuscular injection	Simulator / Mannequin/Small group discussion			
		Ward round <ul style="list-style-type: none"> • Communication with patient • Patient Education 				
Phase III Part I	IM4.15	Peripheral blood smear interpretation&Perform and interpret a malarial smear	Small group discussion			
		Ryles tube insertion	Simulation/ Real patient			
	IM4.20	Interpret a PPD (Mantoux)	Small group discussion			
	IM11.19	Demonstrate(and counsel) patients on the correct technique to administer insulin	Real patient			
	IM3.17	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and	Small group discussion			

		indications for ventilation (K)				
	IM11.13	Bedside urine analysis & perform and interpret aurinary ketone estimation with a dipstick	Real patient			
	IM15.2 M15.11	Setting up IV infusion and calculating drip rate	Seminar/ Small group discussion /Casualty real patient			
Phase III part II (fourth year)	IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture	Simulators/mannequin			
	IM4.19	Assist in the collection of blood	Bed side clinics			
	IM11.12	Perform and interpret a capillary blood glucose test	Real patient			
	IM25.9	Assist in the collection of blood and other specimen cultures	Bed side clinic/real patients			
	IM9.19	Assist in a blood transfusion	Bed side clinic/real patients			
	IM15.13	Observe cross matching and blood / blood component transfusion	Bed side clinic/real patients			
	IM2.22	Perform and demonstrate in a mannequin BLS	DOAP			
	IM2.21	Observe and participate in a controlled environment an ACLS Program	Session in skills lab			
Feedback by Faculty						
Phase III Part I						

Assessments of case presentation Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity	Decision of faculty	Initial of faculty and date
				First (F) Repeat (R) Remedial (Re)	Completed (C) Repeat (R) Remedial (Re)	
Phase II	20.4 & 20.5	Medical emergency - snake bite – Elicit, present and document an detail history, Perform a systematic examination, document and present a local, appropriate cardiac and neurologic examination	Seminar/ Small Group discussion			
	CT2.20	Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Lecture/ seminar/s mall group discussion /bedside clinic			
	CT2.22	Demonstrate and counsel patient on the correct use of inhaler	Small group discussion			
Phase III part II (fourth year)	IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter	Seminar / lecture			
	IM11.20	Demonstrate to and counsel patients correct technique on the of self-monitoring of blood glucoses	Seminar/lecture			
	IM15.2	Enumerate, describe and discuss the evaluation and steps involved in	Seminar/lecture/smal			

		stabilizing a patient who presents with acute volume loss and GI Bleed	I group discussion			
	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	Seminar/lecture/small group discussion			
	AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates	Seminar/lecture/small group discussion			
	IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	Seminar/lecture/small group discussion			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of OSCE

Phase	Competency Nos.	Topics & Subtopics	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	IM4.15	Perform and interpret a malarial smear			
	IM9.10	Describe, perform and interpret a peripheral smear			
	IM11.13	Perform and interpret a urinary ketone estimation with adipstick			
	BI11.4	Perform urine analysis to estimate and determine			

		normal and abnormal constituents			
		Interprete Chest X Ray			
		Interprete blood culture			
		Interprete Hemogram- CBC etc			
		Interprete Liver function tests			
		Interprete CSF analysis			
		Interprete ascitic, pleural fluid			
		Interprete ABG			
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Skill acquisition Vertical integration

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase III	OG35.17	OBGY Demonstrate the correct technique of urinary catheterization in a simulated/ supervised environment	Small group discussion / real patient/ simulation			
	CT2.20	Chest Medicine – Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Seminar/ Group discussion			
	CT2.22	Chest Medicine- Demonstrate and counsel patient on the correct use of inhalers	Small group discussion / Role play/ Real patient			
	AS2.1	Enumerate the indications,	DOAP			

		describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates	Session in skills lab			
	AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment advanced life support in adults and children	DOAP Session in skills lab			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Integrated teachings-

Phase	Subject	Hours	Competency Nos. Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I		Total 9 hours (3 hours each for clinical Pharmacology, clinical Pathology and Clinical microbiology)					
	Clinical Pharmacology	3hours	Clinical pharmacokinetics-1 hr Adverse drug reaction-1 hr Drug-Drug interaction-1 hr				
	Clinical Pathology	3hours	Anaemia and haemoglobinopathies-1 hr Hematological malignancies-1 hr Platelet disorder-1 hr				
	Clinical Microbiology	3hours	Pyrexia of unknown origin - 1 hr Antimicrobial resistance -1 hr Viral haemorrhagic fever -1 hr				
III Part II		Integrated teachings- Total 19 hours					
	Care of patients during Pandemics	6 hours	Interactive Discussion- 2 hours Triage practices to be followed Primary care to be given to a patient on reaching hospital				

			<p>Steps to be taken to reduce transmission of infections in emergency area</p> <p>Role Play- 1 hour</p> <p>Visit to hospital with discussion with staff- 2 hour</p> <p>Debriefing and feedback- 1 hour</p>				
	Emergency Procedures during Pandemics	8 hours	<p>Interactive Discussion – 2 hours</p> <p>1. Indications for invasive procedures in Pandemics</p> <p>2. Points to be verified before emergency procedures</p> <p>3. Steps to be taken to reduce transmission of infections</p> <p>4. Attitude and Communication Issues related to complicated procedures</p> <p>II. Skill development program – with mannequins e.g. intubation, CPR, ALS, PALS etc - 4 hours (This may be linked with the routine Skill training component as well)</p> <p>III. Role Plays for communication skills and documentation - 1 hour</p> <p>IV. Debriefing and Feedback - 1hour</p>				
	Managing Death during Pandemics	2 hours	<p>Interactive discussion – 1 hour</p> <p>a. Confirmation and documentation of death</p> <p>b. Steps to be taken to reduce transmission of infections</p> <p>c. Attitude and Communication Issues related to handling of dead bodies</p> <p>d. Responding to media</p> <p>ii. Role Play for communication skills and documentation with debriefing and feedback - 1 hour</p>				
	Geriatrics	3 hours	<p>Polypharmacy</p> <p>Falls</p> <p>Incontinence</p>				
Feedback by Faculty							
Phase III Part I							
Phase III Part II							

AETCOM

75% Attendance is required for eligibility to appear for final examination in each professional year.

Maharashtra University of Health Sciences			
General Medicine Task Force for CBME Implementation			
Summary of AETCOM modules for Third and Fourth professional years			
	Third professional Year	Fourth Professional Year	Total
Number of Modules	5	9	14
Number of Hours for training	19	28	47
Number of Hours for SDL	06	16	22
Number of hours to be shown in time table of respective departments for AETCOM			
Hours of training by Medicine	10	15	25
Hours of training by Surgery	10	15	25
Hours of training by OBGY	05	09	14
Hours of training by Pediatrics	00	05	05

Assessment of AETCOM -

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
II	26.20	Demonstrate ability to communicate to patients in a respectful, non threatening, non judgemental and empathetic manner	Small group discussion/Role play			
	26.21 & 26.22	- Demonstrate respect to patient privacy - Demonstrate ability to maintain confidentiality in patient care	Lecture/ Small group discussion			
	26.19 , 26.24 & 26.25	- Demonstrate ability to work in a team of peers and superiors - Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers- Demonstrate responsibility and work ethics while working in the health care team	Lecture/ self directed learning/Small group discussion			
	26.35	Demonstrate empathy in patient encounters	Role play/ Case presentation			
III Part I	26.29 - 26.31	Role of Physician in Community- Communicate diagnostic and therapeutic options to patient and family in a simulated environment Communicate care options to patient and family with a terminal illness in a simulated environment Demonstrate awareness of limitations and seeks	Lecture/ Small group discussion/Role play			

		help and consultations appropriately				
Module 3.3		Administer informed consent and appropriately address patient queries to a patient undergoing a Surgical/ therapeutic procedure in a simulated environment	Small group discussion/ Real patient/ Role play			
Module 4.4		Communication, Attitude and Ethics Empathy, Doctor Patient Relationship , Effective Communication in terminally ill	CBL /video with interactive lecture, role play / small group session with standardized patient in soft skills lab.			
Module 4.5		Ethics and attitude Doctor Industry relationship- Conflicts of interests in patients care and professional	Role play/ CBL with interactive lecture			
Module 4.8		Communication, Attitude and Ethics Empathy, Death declaration, Handling emotions during death, Euthanasia , Breaking Bad News effectively	CBL /video with interactive lecture, role play / small group session with standardized patient as relative in soft skills lab.			
Phase III Part II						
Module 4.1		Foundation of Communication 5 Effectively communicating Diagnosis, Prognosis and therapy (Counseling skills)	Small group teaching with soft skills lab session related to Counseling skills			
Module 4.2		Ethics Abortion, MTP, Reproductive rights and ethical conflicts	CBL with interactive lecture (Can be a large class teaching)			

Module 4.9		Ethics Legal aspects of Care, Medical negligence and malpractices	CBL with interactive lecture/ small group discussions			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of Tutorials

Phase	Topic	Hours	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I	Medical emergencies	1 hr			
	Valvular heart disease in adults	1 hr			
	Acynotic congenital heart disease in adults (ASD,VSD,PDA)	1 hr			
	Cynotic congenital heart disease in adults (TOF)	1 hr			
	Instruments- Video of procedures/Real/casewise	1 hr			
	Instruments	1 hr			
	X rays	1 hr			
	X rays	1 hr			
	ECG- Approach to basics of ECG	1 hr			
	ECG- How to read ECG?	1 hr			
III Part II	ECG-	10 Hours			
	How to interpret ECG?	1 hr			
	ECG-Diagnosing Myocardial infarctions	1 hr			
	ECG: Chamber enlargement	1 hr			
	ECG-Bundle branch blocks	1 hr			
	Electrolyte abnormalities on ECG	1 hr			
	Narrow Complex taccharyrthmias	1 hr			

	Bradyarrthmias	1 hr			
	Valvular Heart diseases	1 hr			
	ECG Quiz	1 hr			
	Misceleneous	1 hr			
	Radiology-	11 Hours			
	Basics of Chest X Ray	1 hr			
	Reading Normal X Ray Chest	1 hr			
	Abnormalities on Chest X Ray – Cardiovascular system	1 hr			
	Pulmonary venous hypertension vs pulmonary arterial hypertension	1 hr			
	Chest X ray – Respiratory system	1 hr			
	Abdominal system(Chest & Abdomen X Ray)	1 hr			
	Miscelleneous X ray	1 hr			
	Basics of CT Scan	1 hr			
	Basics of MRI	2 hr			
	Basics of PET scan	1 hr			
	Drugs- Case based approach	13 Hours			
	Anti epileptics	1 hr			
	Cardiovascular Drugs	1 hr			
	Anti Tubercular Therapy	1 hr			
	Anti Retroviral Therapy	1 hr			
	Emergency Drugs	1 hr			
	Antiviral Drugs	1 hr			
	Drugs in respiratory system	1 hr			
	Glucocorticoids	1 hr			
	Drugs in Rheumatology	1 hr			
	Anticoagulants	1 hr			
	Inotropes and inodilators	1 hr			
	Anti hypertensives	1 hr			
	Antidiabetic drugs	1 hr			
	Interpretation of Lab Charts	12 Hours			
	Interpretation of Ascitic fluid analysis				
	Interpretation of Pleural fluid analysis				
	Interpretation of Cerebrospinal fluid analysis				

	Interpretation of Abnormal LFT				
	Interpretation of Anemia				
	Interpretation of thyroid function test				
	Interpretation of Peripheral blood smear				
	Interpretation of urine analysis				
	Interpretation of Fundus examination				
	Interpretation of renal function tests				
	Interpretation of Bone marrow studies				
	Interpretation of ABG				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Seminars

Phase	Topic	Hours	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I	Seminars	16 Hours			
	Clinical approach to Ascites				
	Clinical approach to Anaemia				
	Clinical approach to lymphadenopathy				
	Clinical approach to Jaundice				
	Clinical approach to chest pain				
	Clinical approach to headache				
	Clinical approach to bleeding diathesis				
	Clinical approach to Comatose patient				
	Portal hypertension and its complications				
	Pulmonary arterial hypertension				
	Pulmonary function tests				
	Thyroid function tests				
	Grave's disease				
	Micro-vascular complications of DM				
	Macro-vascular complications of DM				

	Insulin and analogues				
III Part II	Seminars	45 hours			
	Clinical approach to Hypertensive emergencies				
	Clinical approach to Acute myocardial infarction				
	Clinical approach to solitary Seizure				
	Clinical approach to ischemic stroke				
	Clinical approach to intracranial bleed				
	Clinical approach to Heart Failure				
	Clinical approach to Acute renal failure				
	Clinical approach to Chronic kidney disease				
	Clinical approach to hyponatremia				
	Clinical approach to potassium imbalance disorders				
	Clinical approach to disorders of calcium metabolism				
	Interpretation of ABG				
	Mixed Acid Base disorders				
	Emerging Viral Infections				
	Clinical approach to Geriatric Syndromes				
	Clinical approach to a case of Pulmonary Tuberculosis				
	Clinical approach to a case of Extra Pulmonary Tuberculosis				
	Clinical Approach to a case of PLHIV				
	Clinical approach to opportunistic infections in a case of PLHIV				
	Clinical approach to prescription of ART				
	Clinical approach to a case of Dengue				
	Clinical approach to a case of Complicated malaria				
	Recent advances in the diagnosis of tuberculosis				
	Vaccines for tuberculosis				
	Recent advances in anti retroviral drugs				
	Clinical approach to a case of Interstitial lung disease				
	Clinical approach to a case of snake bite				

	Clinical approach to a case of electric injury				
	Clinical approach to a case of acute meningitis				
	Clinical approach to a case of Chronic meningitis				
	Ageing				
	Human Microbiome				
	Clinical approach to oncological emergencies				
	Clinical approach to a case of Acute Leukemia				
	Clinical approach to a case of Chronic leukemia				
	Medicolegal, socioeconomic and ethical issues as it pertains to organ donation				
	Role of physician in community				
	Medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care				
	Medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care				
	Medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects				
	Medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)				
	Documentation in health care (including correct use of medical records)				
	Use of information technology that permits appropriate patient care and continued learning				
	Understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors				
	Conflicts of interest in patient care and professional				

	relationships and describe the correct response to these conflicts				
	Clinical approach to a case of DIC				
	Clinical approach to a case of arthritis				
	Clinical approach to a case of multisystem involvement				
	Clinical approach to a case of peripheral neuropathy				
	Clinical approach to a case of flaccid quadriplegia				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Theory Competencies

1	2	3	4	5	6	7	8
Competency # addressed	Name of Activity	Date completed: dd-mm-yyyy	Attempt at activity First or Only (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date	Feedback Received Initial of learner
Heart Failure							
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						
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						
IM1.12	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure						
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						
IM1.14	Demonstrate and measure jugular venous distension						
IM1.15	Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations						
IM1.16	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis						
IM1.17	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures						
IM1.18	Perform and interpret a 12 lead ECG						
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						
IM1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy						
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture						

IM1.23	Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations						
IM1.26	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology						
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient						
Acute Myocardial Infarction/ IHD							
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						
IM2.7	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation						
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						
IM2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the						

	clinical presentation						
IM2.10	Order, perform and interpret an ECG						
IM2.11	Order and interpret a Chest X-ray and markers of acute myocardial infarction						
IM2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context						
IM2.22	Perform and demonstrate in a mannequin BLS						
IM2.24	Counsel and communicate to patients with empathy lifestyle changes in atherosclerosis / post coronary syndromes						
Pneumonia							
IM3.4	Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk						
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						
IM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						

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						
IM3.8	Demonstrate in a mannequin and interpret results of an arterial blood gas examination						
IM3.9	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration						
IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture						
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing						
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum						
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum.						
IM3.14	Perform and interpret a sputum gram stain and AFB						
IM3.18	Communicate and counsel patient on family on the diagnosis and therapy of						

	pneumonia						
Fever and febrile syndromes							
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						
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)						
IM4.11	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
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						
IM4.13	Perform and interpret a sputum gram stain						
IM4.14	Perform and interpret a sputum AFB						
IM4.15	Perform and interpret a malarial smear						
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment						
IM4.19	Assist in the collection of blood and wound cultures						
IM4.20	Interpret a PPD (Mantoux)						
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs						
IM4.24	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						
IM4.25	Communicate to the patient and family the diagnosis and treatment						
IM4.26	Counsel the patient on malarial prevention						
Liver diseases							
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						
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						
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology						
IM5.17	Enumerate the indications, precautions and counsel patients on vaccination for hepatitis						
HIV							
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						
IM6.8	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom						
IM6.14	Perform and interpret AFB sputum						

IM6.15	Demonstrate in a model the correct technique to perform a lumbar puncture						
IM6.19	Counsel patients on prevention of HIV transmission						
IM6.20	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM6.21	Communicate with patients on the importance of medication adherence						
IM6.22	Demonstrate understanding of ethical and legal issues regarding patient confidentiality and disclosure in patients with HIV						
IM6.23	Demonstrate a non-judgemental attitude to patients with HIV and to their lifestyles						

Rheumatologic problems

IM7.11	Elicit document and present a medical history that will differentiate the aetiologies of disease						
IM7.12	Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease						
IM7.15	Enumerate the indications for and interpret the results of : CBC, anti- CCP, RA, ANA, DNA and other tests of autoimmunity						
IM7.17	Enumerate the indications and interpret plain radiographs of joints						

IM7.18	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM7.20	Select, prescribe and communicate appropriate medications for relief of joint pain						
IM7.21	Select, prescribe and communicate preventive therapy for crystalline arthropathies						
IM7.22	Select, prescribe and communicate treatment option for systemic rheumatologic conditions						
IM7.24	Communicate and incorporate patient preferences in the choice of therapy						
IM7.25	Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions						
IM7.26	Demonstrate an understanding of the impact of rheumatologic conditions on quality of life, well being, work and family						

Hypertension

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						
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IM8.10	Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart						
IM8.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM8.15	Recognise, prioritise and manage hypertensive emergencies						
IM8.16	Develop and communicate to the patient lifestyle modification including weight reduction, moderation of alcohol intake, physical activity and sodium intake						
IM8.17	Perform and interpret a 12 lead ECG						
IM8.18	Incorporate patient preferences in the management of HTN						
IM8.19	Demonstrate understanding of the impact of Hypertension on quality of life, well being, work and family						
Anemia							
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						

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						
IM9.5	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM9.6	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM9.9	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate						
IM9.10	Describe, perform and interpret a peripheral smear and stool occult blood						
IM9.13	Prescribe replacement therapy with iron, B12, folate						
IM9.15	Communicate the diagnosis and the treatment appropriately to patients						
IM9.16	Incorporate patient preferences in the management of anemia						
IM9.19	Assist in a blood transfusion						
IM9.20	Communicate and counsel patients with methods to prevent nutritional anemia						
Acute kidney injury and chronic renal failure							

IM10.1 2	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						
IM10.1 3	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						
IM10.1 5	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM10.1 7	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)						
IM10.1 8	Identify the ECG findings in hyperkalemia						
IM10.2 0	Describe and discuss the indications to perform arterial blood gas analysis: interpret the data						
IM10.2 1	Describe and discuss the indications for and insert a peripheral intravenous catheter						
IM10.2 2	Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter						

IM10.2 3	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
IM10.2 4	Counsel patients on a renal diet						
Diabetes Mellitus							
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						
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)						
IM11.1 1	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						
IM11.1 2	Perform and interpret a capillary blood glucose test						
IM11.1 3	Perform and interpret a urinary ketone estimation with a dipstick						

IM11.1 9	Demonstrate and counsel patients on the correct technique to administer insulin						
IM11.2 0	Demonstrate to and counsel patients on the correct technique of self monitoring of blood glucoses						
Thyroid Dysfunction							
IM12.5	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity						
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						
IM12.7	Demonstrate the correct technique to palpate the thyroid						
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						
IM12.1 0	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG						
IM12.1 1	Interpret thyroid function tests in hypo and hyperthyroidism						

IM12.1 4	Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status						
Common malignancies							
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						
Obesity							
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						
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						
IM14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM14.9	Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.						

IM14.1 1	Communicate and counsel patient on behavioural, dietary and lifestyle modifications						
IM14.1 2	Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgemental way						
GI Bleeding							
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed						
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						
IM15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination						
IM15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent						
IM15.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely						

	diagnosis						
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.						
IM15.1 3	Observe cross matching and blood / blood component transfusion						
IM15.1 8	Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options						
Diarrheal diseases							
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses						
IM16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination						
IM16.7	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM16.8	Choose and interpret diagnostic tests based on the						

	clinical diagnosis including complete blood count, and stool examination						
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen						
IM16.10	Identify vibrio cholera in a hanging drop specimen						
IM16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis						
Headache							
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						
IM17.4	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis						
IM17.5	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						
IM17.6	Choose and interpret diagnostic testing based on the clinical diagnosis including imaging						
IM17.8	Demonstrate in a mannequin or equivalent the correct technique						

	for performing a lumbar puncture						
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis						
IM17.1 4	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
Cerebrovascular accident							
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						
IM18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history						
IM18.6	Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion						
IM18.7	Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech						
IM18.1 0	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)						

IM18.1 7	Counsel patient and family about the diagnosis and therapy in an empathetic manner						
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Movement disorders

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						
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IM19.4	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales						
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IM19.5	Generate document and present a differential diagnosis and prioritise based on the history and physical examination						
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IM19.6	Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings						
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IM19.7	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders						
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Envenomation

IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient						
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	with a snake bite in the field						
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						
IM20.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination						
IM20.6	Choose and interpret the appropriate diagnostic testing in patients with snake bites						
Poisoning							
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy						
Nutritional and Vitamin deficiencies							
IM23.5	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet						
Geriatrics							
IM24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components						
Miscellaneous infections							
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						
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)						
IM25.6	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
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						
IM25.9	Assist in the collection of blood and other specimen cultures						
IM25.1	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						

IM25.1 2	Communicate to the patient and family the diagnosis and treatment of identified infection						
IM25.1 3	Counsel the patient and family on prevention of various infections due to environmental issues						
The role of physician in the community							
IM26.1 9	Demonstrate ability to work in a team of peers and superiors						
IM26.2 0	Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgemental and empathetic manner						
IM26.2 1	Demonstrate respect to patient privacy						
IM26.2 2	Demonstrate ability to maintain confidentiality in patient care						
IM26.2 3	Demonstrate a commitment to continued learning						
IM26.2 4	Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers						
IM26.2 5	Demonstrate responsibility and work ethics while working in the health care team						
IM26.2 6	Demonstrate ability to maintain required documentation in health care (including correct use of medical records)						
IM26.2 7	Demonstrate personal grooming that is adequate and appropriate for health care						

	responsibilities						
IM26.2 8	Demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning						
IM26.2 9	Communicate diagnostic and therapeutic options to patient and family in a simulated environment						
IM26.3 0	Communicate care options to patient and family with a terminal illness in a simulated environment						
IM26.3 1	Demonstrate awareness of limitations and seeks help and consultations appropriately						
IM26.3 2	Demonstrate appropriate respect to colleagues in the profession						
IM26.3 3	Demonstrate an understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors						
IM26.3 4	Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts						
IM26.3 5	Demonstrate empathy in patient encounters						
IM26.3 6	Demonstrate ability to balance personal and professional priorities						

IM26.3 7	Demonstrate ability to manage time appropriately						
IM26.3 8	Demonstrate ability to form and function in appropriate professional networks						
IM26.3 9	Demonstrate ability to pursue and seek career advancement						
IM26.4 0	Demonstrate ability to follow risk management and medical error reduction practices where appropriate						
IM26.4 1	Demonstrate ability to work in a mentoring relationship with junior colleagues						
IM26.4 2	Demonstrate commitment to learning and scholarship						
IM26.4 8	Demonstrate altruism						
IM26.4 9	Administer informed consent and appropriately address patient queries to a patient being enrolled in a research protocol in a simulated environment						

**Integration
Anatomy**

AN20.8 Vertical integration	Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment						
AN20.9 Vertical integration	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						
AN24.2 Vertical integration	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate						
AN25.7 Vertical integration	Identify structures seen on a plain x-ray chest (PA view)						
AN25.8 Vertical integration	Identify and describe in brief a barium swallow						
AN25.9 Vertical integration	Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart						
AN56.1 Vertical integration	Describe & identify various layers of meninges with its extent & modifications						
AN62.2 Vertical integration	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere						
AN62.6 Vertical	Describe & identify formation, branches &						

al integr ation	major areas of distribution of circle of Willis						
PY4.9 Vertical integrati on	Discuss the physiology aspects of: peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease						
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment						
PY5.16	Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment						
PY11.1 4 Vertical integrati on	Demonstrate Basic Life Support in a simulated environment						
PY6.8 Vertical Integrati on	Demonstrate the correct technique to perform & interpret Spirometry						
BI1.4 Vertical integrati on	Perform urine analysis to estimate and determine normal and abnormal constituents						
BI1.26 Vertical integrati on	Calculate albumin: globulin (AG) ratio and creatinine clearance						
BI1.27 Vertical integrati on	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						
PA13.5	Perform, Identify and describe the peripheral						

	blood picture in anemia						
PA14.3 Vertical integrati on	Identify and describe the peripheral smear in microcytic anemia						
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features						
PA24.3	Describe and identify the microscopic features of peptic ulcer						
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						
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes						
PA35.3 Vertical integrati on	Identify the etiology of meningitis based on given CSF parameters						
MI2.3	Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis						
MI2.6	Identify the causative agent of malaria and filariasis						
MI3.2	Identify the common etiologic agents of diarrhea and dysentery						
MI5.3	Identify the microbial agents causing meningitis						

MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)						
MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain).						
PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction						
PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations						
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient						
PH3.3	Perform a critical evaluation of the drug promotional literature						
PH3.5	To prepare and explain a list of P-drugs for a given case/condition						
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use						
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance						
CM5.2	Describe and demonstrate the correct method of performing a nutritional assessment of						

	individuals, families and the community by using the appropriate method						
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						
CM6.2	Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data						
CM6.3	Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs						
CM6.4	Enumerate, discuss and demonstrate common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion						
CM7.4	Define, calculate and interpret morbidity and mortality indicators based on given set of data						
CM7.6	Enumerate and evaluate the need of screening tests						
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures.						

FM14.2	Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/supervised environment						
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 .						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted diseases						
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)						
DR11.2	Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions						
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions						
DR16.1	Identify and distinguish skin lesions of SLE						

DR16. 2	Identify and distinguish Raynaud's phenomenon						
DR17. 1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1 Vertical integrati on	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment advanced life support in adults and children						
AS3.2 Horizon tal integrati on	Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation						
AS3.3 Horizon tal integrati on	Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery						
AS3.4 Horizon tal integrati on	Choose and interpret appropriate testing for patients undergoing Surgery						
AS3.5 Horizon tal integrati on	Determine the readiness for General Surgery in a patient based on the preoperative evaluation						
PS4.2 Horizon tal integrati on	Elicit, describe and document clinical features of alcohol and substance use disorders						

PS4.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders						
PS10.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS12.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS16.4 Horizontal integration	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PE32.3 Horizontal integration	Interpret normal Karyotype and recognize Trisomy 21						
PE28.20	Counsel the child with asthma on the correct use of inhalers in a simulated environment						
PE34.5	Able to elicit, document and present history of contact with tuberculosis in every patient						

	encounter						
PE34.6	Identify a BCG scar						
PE34.7	Interpret a Mantoux test						
PE34.8	Interpret a Chest Radiograph						
PE34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis						
PE34.11	Perform AFB staining						
PE28.19	Describe the etio-pathogenesis, clinical features, diagnosis, management and prevention of asthma in children						
PM4.5 Horizontal integration	Demonstrate correct assessment of muscle strength and range of movements						
PM6.1 Horizontal integration	Perform and demonstrate a clinical examination of sensory and motor deficits of peripheral nerve						
CT1.5	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations						
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						
CT1.7	Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test						
CT1.10	Perform and interpret an AFB stain						
CT1.11	Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration						
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)						
CT1.17	Define criteria for the cure of Tuberculosis; describe and recognise the features of drug resistant tuberculosis, prevention and therapeutic regimens						
CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program						
CT1.19	Communicate with patients and family in an empathetic manner about the diagnosis, therapy						

CT2.8	Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants						
CT2.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.11	Describe, discuss and interpret pulmonary function tests						
CT2.12	Perform and interpret peak expiratory flow rate						
CT2.13	Describe the appropriate diagnostic work up based on the presumed aetiology						
CT2.14	Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph						
CT2.15	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.18	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids						
CT2.19	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy						
CT2.21	Describe discuss and counsel patients appropriately on smoking cessation						
CT2.22	Demonstrate and counsel patient on the correct use of inhalers						

CT2.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
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						
DR5.2	Identify and differentiate scabies from other lesions						
DR6.2	Identify and differentiate pediculosis from other skin lesions						
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate						

	investigations in a patient with mental retardation						
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment						
PM3.4	Demonstrate spasticity, rigidity and dystonia in children with cerebral palsy						
PS1.1	Establish rapport and empathy with patients						
PS1.3	Demonstrate breaking of bad news in a simulated environment						
PS1.4	Describe and demonstrate the importance of confidentiality in patient encounters						
PS3.3	Elicit, present and document a history in patients presenting with a mental disorder						
PS3.4	Describe the importance of establishing rapport with patients						
PS3.5	Perform, demonstrate and document a minimal examination						
PS3.9	Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders						
PS4.2	Elicit, describe and document clinical features of alcohol and substance use disorders						
PS4.3	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse						

	disorders						
PS4.5	Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment						
PS5.2	Enumerate, elicit, describe and document clinical features, positive s						
PS5.4	Demonstrate family education in a patient with schizophrenia in a simulated environment						
PS6.2	Enumerate, elicit, describe and document clinical features in patients with depression						
PS6.3	Enumerate and describe the indications and interpret laboratory and other tests used in depression						
PS6.5	Demonstrate family education in a patient with depression in a simulated environment						
PS7.2	Enumerate, elicit, describe and document clinical features in patients with bipolar disorders						
PS7.3	Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders						
PS7.5	Demonstrate family education in a patient with bipolar disorders in a simulated environment						

PS8.2	Enumerate, elicit, describe and document clinical features in patients with anxiety disorders						
PS8.3	Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders						
PS8.5	Demonstrate family education in a patient with anxiety disorders in a simulated environment						
PS9.2	Enumerate, elicit, describe and document clinical features in patients with stress related disorders						
PS9.3	Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders						
PS9.5	Demonstrate family education in a patient with stress related disorders in a simulated environment						
PS10.2	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS10.5	Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a						

	simulated environment						
PS11.2	Enumerate, elicit, describe and document clinical features in patients with personality disorders						
PS11.3	Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders						
PS11.5	Demonstrate family education in a patient with personality disorders in a simulated environment						
PS12.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS12.5	Demonstrate family education in a patient with psychosomatic disorders in a simulated environment						
PS13.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders						
PS13.3	Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual and gender identity disorders						

PS13.5	Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate investigations in a patient with mental retardation						
PS16.4	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs.						
IM17.1 4	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
IM24.2	Perform multidimensional geriatric assessment that includes medical,						

	psycho-social and functional components						
DR1.2	Identify and grade the various common types of acne						
DR3.1	Identify and distinguish psoriatic lesions from other causes						
DR3.2	Demonstrate the grattage test						
DR4.1	Identify and distinguish lichen planus lesions from other causes						
DR5.2	Identify and differentiate scabies from other lesions in adults and children						
DR6.2	Identify and differentiate pediculosis from other skin lesions in adults and children						
DR7.2	Identify Candida species in fungal scrapings and KOH mount						
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions						
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions						
DR8.4	Identify and distinguish viral warts from other skin lesions						
DR8.5	Identify and distinguish molluscum contagiosum from other skin lesions						
DR8.6	Enumerate the indications, describe the procedure and perform a Tzanck smear						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an						

	appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.2	Identify spirochete in a dark ground microscopy						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease						

General Medicine

Subject: General Medicine

Third Year MBBS

Sub Item: Theory lectures/ Clinical postings/Tutorials/seminars/self directed learning/ Electives

Final Summary

Sr. No	Description	Dates		Attendance percentage	Status	Signature of Teacher
		From	To		Complete/ Incomplete	
1	Theory lectures					
2	Clinical postings					
3	AETCOM Module					
4.	Electives					
5	Vertical Integraon					

6	Extracurricular activities					
7	Sports /Physical Education					



**Maharashtra University of
Health Sciences**

PHASE II to Phase IV MBBS

COMPETENCY BASED CURRICULUM-2019 batch

GENERAL MEDICINE LOG BOOK

NAME OF COLLEGE-

NAME OF STUDENT-

ROLL NUMBER-

BATCH – A/B/C/D/E/F

CONTENTS

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10	Assesment of Seminar	31-33
11	Assesment of Theory Competencies	34-81

PERSONAL DETAILS

Name of student-

Mobile Number-

Residential Address-

Photo stick here

Father/Guardians contact no.

Email-

Email of Father/Guardian-

Date of admission to MBBS course-

Date of beginning of current phase-

LOGBOOK CERTIFICATE (General Medicine)

This is to certify that the candidate Mr/ Ms
....., Reg No, admitted in the
year 2019-20 in the ----- Medical College,----- has
satisfactorily completed / has not completed all assignments /requirements mentioned in this
logbook for Second to fourth year MBBS course in the subject(s) of General Medicine Foundation
Course/ AETCOM during the period from
..... to..... . She / He is / Eligible/ not eligible to appear for the summative
(University) assessment as on the date given below.

Signature of all Unit In charges-

Signature of Head of the Department

Principal/Dean of the College

Place:

Date:

GENERAL INSTRUCTIONS

1. The logbook is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her logbook.
2. The log book is a record of the academic / nonacademic activities of the student. Each Medical student is responsible for maintaining their logbook.
3. This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II to Phase IV Professional MBBS students in the subject of General Medicine.
4. Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly signed by the supervising faculty.
5. Entries in the logbook will be in accordance with activities done in the departments and has to be scrutinized by the Head of all the concerned departments.
6. The logbook shall be kept as record work of the candidate for that department / specialty & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A clear record of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least 5 years after completion of the examination. Institutions may be asked to provide these details by the University as and when required.
2. The contents in the log book are suggested guidelines. The institutions can make necessary changes as per the needs.
3. The student is responsible for getting the entries in the logbook verified by the Faculty in charge regularly.
4. Entries in the logbook will reflect the activities undertaken in the department & have to be scrutinized by the Head of the concerned department.
5. The logbook is a record of various activities by the student like:- Overall participation & performance, Attendance, Participation in sessions, Record of completion of pre-determined activities., Acquisition of selected competencies.

Record of Attendance for Theory and clinical postings

	Duration	Practical		Theory		Signature of Unit in charge/ HOD
		No of days	Days attended	No of days	Days attended	
Phase II						
First clinical posting	4 weeks					
Second clinical posting	4 weeks					
Phase III Part I	8 weeks					
Phase III Part I	4 weeks					

Dates of completion of clinical postings

Phase	From	To	Absent days	Journal completed	Signature of unit in charges with name and dates
II					
III Part I					
III Part II					

SCHEME OF EXAMINATION - Internal Assessment

Sr. No.	Internal assessment	Date/Month /Year	Marks obtained		Out of 4.5	Signature of student
			Theory out of	Practical out of		
1	First	September				
2	Second	September				
3	Third Part I	October				
4	Third Part II	January				
	Total					
	Round up-					

Duration and details of course

Sr. No.	Phases		Semester	No of Months
1	I	First professional Preclinical phase	Semester 1 & Semester 2	1 + 12 months
2	II	Second professional Paraclinical Phase	Semester 3 & Semester 4	11 Months
3	III Part I	Third professional Clinical Phase	Semester 5 & Semester 6	13 Months
4	Electives, skills and assessment			2 Months
5	III Part II	Third professional Clinical Phase	Semester 7, Semester 8 Semester 9	13 Months

Phase	Hours	Total hrs
First I		
Early clinical exposure	90	
Second II		
Lectures	75	615 hrs
Tutorial/Seminars/Integrated learning	--	-
Self directed learning	--	--
Third Part I		
Lectures	25	65 hrs
Tutorial/Seminars/Integrated learning	35	
Self directed learning	5	
Third Part II		
Lectures	70	210 hrs
Tutorial/Seminars/Integrated learning	125	
Self directed learning	15	

Theory teaching

Learner – Doctor Programme (Clinical clerkship) (Reference- The Gazette of India: Part III-sec.4 pg 74-74)

The learner will function as a part of the health care team with the following responsibilities:

- (i) Be part of the unit's outpatient services on admission days,
- (ii) Remain with the admission unit until 6 PM except during designated class hours,
- (iii) Be assigned patients admitted during each admission day for whom he/she will undertake responsibility, under the supervision of a senior resident or faculty member,
- (iv) Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
- (v) Follow the patient's progress throughout the hospital stay until discharge,
- (vi) Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients (according to responsibilities outlined in table 9),
- (vii) Participate in unit rounds on at least one other day of the week excluding the admission day,
- (viii) Discuss ethical and other humanitarian issues during unit rounds,
- (ix) Attend all scheduled classes and educational activities,
- (x) Document his/her observations in a prescribed log book / case record.
- (xi) No learner will be given independent charge of the patient.

Year of curriculum	Focus of Learner- Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness

Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

Assessment of Skill competencies

Assessment of DOAP Sessions

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.12	Pulse examination with demonstration				
	1.13	Measure BP accurately				
	1.14	JVP				
	4.10	Examination of skin, lymph node, chest and abdominal examination				
	2.7	CVS Examination with demonstration				
	3.4 & 3.5	Orientation to history taking, general examination & systemic examination of Respiratory system				
Phase III part II (fourth year)	IM 3.9/ IM 5.15	Demonstrate in a mannequin and interpret results of a pleural fluid Aspiration				
	IM5.15	Assist in the performance and interpret the findings of an ascitic fluid analysis	Mannequins/bedside clinic/Real patient			
	M6.15/ M 17.8 17.9	Demonstrate in a model the correct technique to perform a lumbar Puncture	Mannequins/bedside clinic/ Real patient			
Feedback by Faculty-						
Phase II						
Phase III Part I						
Phase III Part II						

Assessments of Skill acquisition Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.30	Intramuscular injection	Simulator / Mannequin/Small group discussion			
		Ward round <ul style="list-style-type: none"> • Communication with patient • Patient Education 				
Phase III Part I	IM4.15	Peripheral blood smear interpretation&Perform and interpret a malarial smear	Small group discussion			
		Ryles tube insertion	Simulation/ Real patient			
	IM4.20	Interpret a PPD (Mantoux)	Small group discussion			
	IM11.19	Demonstrate(and counsel) patients on the correct technique to administer insulin	Real patient			
	IM3.17	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and	Small group discussion			

		indications for ventilation (K)				
	IM11.13	Bedside urine analysisv&vPerform and interpret aurinary ketone estimation with a dipstick	Real patient			
	IM15.2 M15.11	Setting up IV infusion and calculating drip rate	Seminar/ Small group discussion /Casualty real patient			
Phase III part II (fourth year)	IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture	Simulator s/mannequin			
	IM4.19	Assist in the collection of blood	Bed side clinics			
	IM11.12	Perform and interpret a capillary blood glucose test	Real patient			
	IM25.9	Assist in the collection of blood and other specimen cultures	Bed side clinic/real patients			
	IM9.19	Assist in a blood transfusion	Bed side clinic/real patients			
	IM15.13	Observe cross matching and blood / blood component transfusion	Bed side clinic/real patients			
	IM2.22	Perform and demonstrate in a mannequin BLS	DOAP			
	IM2.21	Observe and participate in a controlled environment an ACLS Program	Session in skills lab			
Feedback by Faculty						
Phase III Part I						

Assessments of case presentation Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity	Decision of faculty	Initial of faculty and date
				First (F) Repeat (R) Remedial (Re)	Completed (C) Repeat (R) Remedial (Re)	
Phase II	20.4 & 20.5	Medical emergency - snake bite – Elicit, present and document an detail history, Perform a systematic examination, document and present a local, appropriate cardiac and neurologic examination	Seminar/ Small Group discussion			
	CT2.20	Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Lecture/ seminar/s mall group discussion /bedside clinic			
	CT2.22	Demonstrate and counsel patient on the correct use of inhaler	Small group discussion			
Phase III part II (fourth year)	IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter	Seminar / lecture			
	IM11.20	Demonstrate to and counsel patients correct technique on the of self-monitoring of blood glucoses	Seminar/lecture			
	IM15.2	Enumerate, describe and discuss the evaluation and steps involved in	Seminar/lecture/small			

		stabilizing a patient who presents with acute volume loss and GI Bleed	I group discussion			
	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	Seminar/lecture/small group discussion			
	AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates	Seminar/lecture/small group discussion			
	IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	Seminar/lecture/small group discussion			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of OSCE

Phase	Competency Nos.	Topics & Subtopics	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	IM4.15	Perform and interpret a malarial smear			
	IM9.10	Describe, perform and interpret a peripheral smear			
	IM11.13	Perform and interpret a urinary ketone estimation with a dipstick			
	BI11.4	Perform urine analysis to estimate and determine			

		normal and abnormal constituents			
		Interprete Chest X Ray			
		Interprete blood culture			
		Interprete Hemogram- CBC etc			
		Interprete Liver function tests			
		Interprete CSF analysis			
		Interprete ascitic, pleural fluid			
		Interprete ABG			
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Skill acquisition Vertical integration

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase III	OG35.17	OBGY Demonstrate the correct technique of urinary catheterization in a simulated/ supervised environment	Small group discussion / real patient/ simulation			
	CT2.20	Chest Medicine – Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Seminar/ Group discussion			
	CT2.22	Chest Medicine- Demonstrate and counsel patient on the correct use of inhalers	Small group discussion / Role play/ Real patient			
	AS2.1	Enumerate the indications,	DOAP			

		describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates	Session in skills lab			
	AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment advanced life support in adults and children	DOAP Session in skills lab			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Integrated teachings-

Phase	Subject	Hours	Competency Nos. Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I		Total 9 hours (3 hours each for clinical Pharmacology, clinical Pathology and Clinical microbiology)					
	Clinical Pharmacology	3hours	Clinical pharmacokinetics-1 hr Adverse drug reaction-1 hr Drug-Drug interaction-1 hr				
	Clinical Pathology	3hours	Anaemia and haemoglobinopathies-1 hr Hematological malignancies-1 hr Platelet disorder-1 hr				
	Clinical Microbiology	3hours	Pyrexia of unknown origin - 1 hr Antimicrobial resistance -1 hr Viral haemorrhagic fever -1 hr				
III Part II		Integrated teachings- Total 19 hours					
	Care of patients during Pandemics	6 hours	Interactive Discussion- 2 hours Triage practices to be followed Primary care to be given to a patient on reaching hospital				

			<p>Steps to be taken to reduce transmission of infections in emergency area</p> <p>Role Play- 1 hour</p> <p>Visit to hospital with discussion with staff- 2 hour</p> <p>Debriefing and feedback- 1 hour</p>				
	Emergency Procedures during Pandemics	8 hours	<p>Interactive Discussion – 2 hours</p> <p>1. Indications for invasive procedures in Pandemics</p> <p>2. Points to be verified before emergency procedures</p> <p>3. Steps to be taken to reduce transmission of infections</p> <p>4. Attitude and Communication Issues related to complicated procedures</p> <p>II. Skill development program – with mannequins e.g. intubation, CPR, ALS, PALS etc - 4 hours (This may be linked with the routine Skill training component as well)</p> <p>III. Role Plays for communication skills and documentation - 1 hour</p> <p>IV. Debriefing and Feedback - 1 hour</p>				
	Managing Death during Pandemics	2 hours	<p>Interactive discussion – 1 hour</p> <p>a. Confirmation and documentation of death</p> <p>b. Steps to be taken to reduce transmission of infections</p> <p>c. Attitude and Communication Issues related to handling of dead bodies</p> <p>d. Responding to media</p> <p>ii. Role Play for communication skills and documentation with debriefing and feedback - 1 hour</p>				
	Geriatrics	3 hours	<p>Polypharmacy</p> <p>Falls</p> <p>Incontinence</p>				
Feedback by Faculty							
Phase III Part I							
Phase III Part II							

AETCOM

75% Attendance is required for eligibility to appear for final examination in each professional year.

Maharashtra University of Health Sciences			
General Medicine Task Force for CBME Implementation			
Summary of AETCOM modules for Third and Fourth professional years			
	Third professional Year	Fourth Professional Year	Total
Number of Modules	5	9	14
Number of Hours for training	19	28	47
Number of Hours for SDL	06	16	22
Number of hours to be shown in time table of respective departments for AETCOM			
Hours of training by Medicine	10	15	25
Hours of training by Surgery	10	15	25
Hours of training by OBGY	05	09	14
Hours of training by Pediatrics	00	05	05

Assessment of AETCOM -

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
II	26.20	Demonstrate ability to communicate to patients in a respectful, non threatening, non judgemental and empathetic manner	Small group discussion/Role play			
	26.21 & 26.22	- Demonstrate respect to patient privacy - Demonstrate ability to maintain confidentiality in patient care	Lecture/ Small group discussion			
	26.19 , 26.24 & 26.25	- Demonstrate ability to work in a team of peers and superiors - Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers- Demonstrate responsibility and work ethics while working in the health care team	Lecture/ self directed learning/Small group discussion			
	26.35	Demonstrate empathy in patient encounters	Role play/ Case presentation			
III Part I	26.29 - 26.31	Role of Physician in Community- Communicate diagnostic and therapeutic options to patient and family in a simulated environment Communicate care options to patient and family with a terminal illness in a simulated environment Demonstrate awareness of limitations and seeks	Lecture/ Small group discussion/Role play			

		help and consultations appropriately				
Module 3.3		Administer informed consent and appropriately address patient queries to a patient undergoing a Surgical/ therapeutic procedure in a simulated environment	Small group discussion/ Real patient/ Role play			
Module 4.4		Communication, Attitude and Ethics Empathy, Doctor Patient Relationship , Effective Communication in terminally ill	CBL /video with interactive lecture, role play / small group session with standardized patient in soft skills lab.			
Module 4.5		Ethics and attitude Doctor Industry relationship- Conflicts of interests in patients care and professional	Role play/ CBL with interactive lecture			
Module 4.8		Communication, Attitude and Ethics Empathy, Death declaration, Handling emotions during death, Euthanasia , Breaking Bad News effectively	CBL /video with interactive lecture, role play / small group session with standardized patient as relative in soft skills lab.			
Phase III Part II						
Module 4.1		Foundation of Communication 5 Effectively communicating Diagnosis, Prognosis and therapy (Counseling skills)	Small group teaching with soft skills lab session related to Counseling skills			
Module 4.2		Ethics Abortion, MTP, Reproductive rights and ethical conflicts	CBL with interactive lecture (Can be a large class teaching)			

Module 4.9		Ethics Legal aspects of Care, Medical negligence and malpractices	CBL with interactive lecture/ small group discussions			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of Tutorials

Phase	Topic	Hours	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I	Medical emergencies	1 hr			
	Valvular heart disease in adults	1 hr			
	Acynotic congenital heart disease in adults (ASD,VSD,PDA)	1 hr			
	Cynotic congenital heart disease in adults (TOF)	1 hr			
	Instruments- Video of procedures/Real/casewise	1 hr			
	Instruments	1 hr			
	X rays	1 hr			
	X rays	1 hr			
	ECG- Approach to basics of ECG	1 hr			
	ECG- How to read ECG?	1 hr			
III Part II	ECG-	10 Hours			
	How to interprete ECG?	1 hr			
	ECG-Diagnosing Myocardial infarctions	1 hr			
	ECG: Chamber enlargement	1 hr			
	ECG-Bundle branch blocks	1 hr			
	Electrolyte abnormalities on ECG	1 hr			
	Narrow Complex tachyarrythmias	1 hr			

	Bradyarrthmias	1 hr			
	Valvular Heart diseases	1 hr			
	ECG Quiz	1 hr			
	Misceleneous	1 hr			
	Radiology-	11 Hours			
	Basics of Chest X Ray	1 hr			
	Reading Normal X Ray Chest	1 hr			
	Abnormalities on Chest X Ray – Cardiovascular system	1 hr			
	Pulmonary venous hypertension vs pulmonary arterial hypertension	1 hr			
	Chest X ray – Respiratory system	1 hr			
	Abdominal system(Chest & Abdomen X Ray)	1 hr			
	Miscellaneous X ray	1 hr			
	Basics of CT Scan	1 hr			
	Basics of MRI	2 hr			
	Basics of PET scan	1 hr			
	Drugs- Case based approach	13 Hours			
	Anti epileptics	1 hr			
	Cardiovascular Drugs	1 hr			
	Anti Tubercular Therapy	1 hr			
	Anti Retroviral Therapy	1 hr			
	Emergency Drugs	1 hr			
	Antiviral Drugs	1 hr			
	Drugs in respiratory system	1 hr			
	Glucocorticoids	1 hr			
	Drugs in Rheumatology	1 hr			
	Anticoagulants	1 hr			
	Inotropes and inodilators	1 hr			
	Anti hypertensives	1 hr			
	Antidiabetic drugs	1 hr			
	Interpretation of Lab Charts	12 Hours			
	Interpretation of Ascitic fluid analysis				
	Interpretation of Pleural fluid analysis				
	Interpretation of Cerebrospinal fluid analysis				

	Interpretation of Abnormal LFT				
	Interpretation of Anemia				
	Interpretation of thyroid function test				
	Interpretation of Peripheral blood smear				
	Interpretation of urine analysis				
	Interpretation of Fundus examination				
	Interpretation of renal function tests				
	Interpretation of Bone marrow studies				
	Interpretation of ABG				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Seminars

Phase	Topic	Hours	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I	Seminars	16 Hours			
	Clinical approach to Ascites				
	Clinical approach to Anaemia				
	Clinical approach to lymphadenopathy				
	Clinical approach to Jaundice				
	Clinical approach to chest pain				
	Clinical approach to headache				
	Clinical approach to bleeding diathesis				
	Clinical approach to Comatose patient				
	Portal hypertension and its complications				
	Pulmonary arterial hypertension				
	Pulmonary function tests				
	Thyroid function tests				
	Grave's disease				
	Micro-vascular complications of DM				
	Macro-vascular complications of DM				

	Insulin and analogues				
III Part II	Seminars	45 hours			
	Clinical approach to Hypertensive emergencies				
	Clinical approach to Acute myocardial infarction				
	Clinical approach to solitary Seizure				
	Clinical approach to ischemic stroke				
	Clinical approach to intracranial bleed				
	Clinical approach to Heart Failure				
	Clinical approach to Acute renal failure				
	Clinical approach to Chronic kidney disease				
	Clinical approach to hyponatremia				
	Clinical approach to potassium imbalance disorders				
	Clinical approach to disorders of calcium metabolism				
	Interpretation of ABG				
	Mixed Acid Base disorders				
	Emerging Viral Infections				
	Clinical approach to Geriatric Syndromes				
	Clinical approach to a case of Pulmonary Tuberculosis				
	Clinical approach to a case of Extra Pulmonary Tuberculosis				
	Clinical Approach to a case of PLHIV				
	Clinical approach to opportunistic infections in a case of PLHIV				
	Clinical approach to prescription of ART				
	Clinical approach to a case of Dengue				
	Clinical approach to a case of Complicated malaria				
	Recent advances in the diagnosis of tuberculosis				
	Vaccines for tuberculosis				
	Recent advances in anti retroviral drugs				
	Clinical approach to a case of Interstitial lung disease				
	Clinical approach to a case of snake bite				

	Clinical approach to a case of electric injury				
	Clinical approach to a case of acute meningitis				
	Clinical approach to a case of Chronic meningitis				
	Ageing				
	Human Microbiome				
	Clinical approach to oncological emergencies				
	Clinical approach to a case of Acute Leukemia				
	Clinical approach to a case of Chronic leukemia				
	Medicolegal, socioeconomic and ethical issues as it pertains to organ donation				
	Role of physician in community				
	Medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care				
	Medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care				
	Medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects				
	Medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)				
	Documentation in health care (including correct use of medical records)				
	Use of information technology that permits appropriate patient care and continued learning				
	Understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors				
	Conflicts of interest in patient care and professional				

	relationships and describe the correct response to these				
	Clinical approach to a case of				
	Clinical approach to a case of arthritis				
	Clinical approach to a case of multisystem				
	Clinical approach to a case of peripheral neuropathy				
	Clinical approach to a case of flaccid quadriplegia				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Theory Competencies

1	2	3	4	5	6	7	8
Competency # addressed	Name of Activity	Date completed: dd-mm-yyyy	Attempt at activity First or Only (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date	Feedback Received Initial of learner
Heart Failure							
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						
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						
IM1.12	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure						
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						
IM1.14	Demonstrate and measure jugular venous distension						
IM1.15	Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations						
IM1.16	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis						
IM1.17	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures						
IM1.18	Perform and interpret a 12 lead ECG						
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						
IM1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy						
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture						

IM1.23	Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations						
IM1.26	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology						
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient						

Acute Myocardial Infarction/ IHD

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						
IM2.7	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation						
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						
IM2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the						

	clinical presentation						
IM2.10	Order, perform and interpret an ECG						
IM2.11	Order and interpret a Chest X-ray and markers of acute myocardial infarction						
IM2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context						
IM2.22	Perform and demonstrate in a mannequin BLS						
IM2.24	Counsel and communicate to patients with empathy lifestyle changes in atherosclerosis / post coronary syndromes						

Pneumonia

IM3.4	Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk						
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						
IM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						

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						
IM3.8	Demonstrate in a mannequin and interpret results of an arterial blood gas examination						
IM3.9	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration						
IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture						
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing						
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum						
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum.						
IM3.14	Perform and interpret a sputum gram stain and AFB						
IM3.18	Communicate and counsel patient on family on the diagnosis and therapy of						

	pneumonia						
Fever and febrile syndromes							
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						
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)						
IM4.11	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
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						
IM4.13	Perform and interpret a sputum gram stain						
IM4.14	Perform and interpret a sputum AFB						
IM4.15	Perform and interpret a malarial smear						
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment						
IM4.19	Assist in the collection of blood and wound cultures						
IM4.20	Interpret a PPD (Mantoux)						
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs						
IM4.24	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						
IM4.25	Communicate to the patient and family the diagnosis and treatment						
IM4.26	Counsel the patient on malarial prevention						
Liver diseases							
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						
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						
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology						
IM5.17	Enumerate the indications, precautions and counsel patients on vaccination for hepatitis						
HIV							
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						
IM6.8	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom						
IM6.14	Perform and interpret AFB sputum						

IM6.15	Demonstrate in a model the correct technique to perform a lumbar puncture						
IM6.19	Counsel patients on prevention of HIV transmission						
IM6.20	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM6.21	Communicate with patients on the importance of medication adherence						
IM6.22	Demonstrate understanding of ethical and legal issues regarding patient confidentiality and disclosure in patients with HIV						
IM6.23	Demonstrate a non-judgemental attitude to patients with HIV and to their lifestyles						

Rheumatologic problems

IM7.11	Elicit document and present a medical history that will differentiate the aetiologies of disease						
IM7.12	Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease						
IM7.15	Enumerate the indications for and interpret the results of : CBC, anti- CCP, RA, ANA, DNA and other tests of autoimmunity						
IM7.17	Enumerate the indications and interpret plain radiographs of joints						

IM7.18	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM7.20	Select, prescribe and communicate appropriate medications for relief of joint pain						
IM7.21	Select, prescribe and communicate preventive therapy for crystalline arthropathies						
IM7.22	Select, prescribe and communicate treatment option for systemic rheumatologic conditions						
IM7.24	Communicate and incorporate patient preferences in the choice of therapy						
IM7.25	Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions						
IM7.26	Demonstrate an understanding of the impact of rheumatologic conditions on quality of life, well being, work and family						

Hypertension

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						
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IM8.10	Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart						
IM8.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM8.15	Recognise, prioritise and manage hypertensive emergencies						
IM8.16	Develop and communicate to the patient lifestyle modification including weight reduction, moderation of alcohol intake, physical activity and sodium intake						
IM8.17	Perform and interpret a 12 lead ECG						
IM8.18	Incorporate patient preferences in the management of HTN						
IM8.19	Demonstrate understanding of the impact of Hypertension on quality of life, well being, work and family						
Anemia							
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						

IM9.4	Perform a systematic examination that includes : general examination for pallor, oral examination, DOAP session of hyperdynamic circulation, lymph node and splenic examination						
IM9.5	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM9.6	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM9.9	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate						
IM9.10	Describe, perform and interpret a peripheral smear and stool occult blood						
IM9.13	Prescribe replacement therapy with iron, B12, folate						
IM9.15	Communicate the diagnosis and the treatment appropriately to patients						
IM9.16	Incorporate patient preferences in the management of anemia						
IM9.19	Assist in a blood transfusion						
IM9.20	Communicate and counsel patients with methods to prevent nutritional anemia						
Acute kidney injury and chronic renal failure							

IM10.1 2	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						
IM10.1 3	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						
IM10.1 5	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM10.1 7	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)						
IM10.1 8	Identify the ECG findings in hyperkalemia						
IM10.2 0	Describe and discuss the indications to perform arterial blood gas analysis: interpret the data						
IM10.2 1	Describe and discuss the indications for and insert a peripheral intravenous catheter						
IM10.2 2	Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter						

IM10.2 3	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
IM10.2 4	Counsel patients on a renal diet						
Diabetes Mellitus							
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						
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)						
IM11.1 1	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						
IM11.1 2	Perform and interpret a capillary blood glucose test						
IM11.1 3	Perform and interpret a urinary ketone estimation with a dipstick						

IM11.1 9	Demonstrate and counsel patients on the correct technique to administer insulin						
IM11.2 0	Demonstrate to and counsel patients on the correct technique of self monitoring of blood glucoses						
Thyroid Dysfunction							
IM12.5	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity						
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						
IM12.7	Demonstrate the correct technique to palpate the thyroid						
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						
IM12.1 0	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG						
IM12.1 1	Interpret thyroid function tests in hypo and hyperthyroidism						

IM12.1 4	Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status						
Common malignancies							
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						
Obesity							
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						
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						
IM14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM14.9	Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.						

IM14.1 1	Communicate and counsel patient on behavioural, dietary and lifestyle modifications						
IM14.1 2	Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgemental way						
GI Bleeding							
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed						
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						
IM15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination						
IM15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent						
IM15.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely						

	diagnosis						
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.						
IM15.1 3	Observe cross matching and blood / blood component transfusion						
IM15.1 8	Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options						
Diarrheal diseases							
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses						
IM16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination						
IM16.7	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM16.8	Choose and interpret diagnostic tests based on the						

	clinical diagnosis including complete blood count, and stool examination						
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen						
IM16.10	Identify vibrio cholera in a hanging drop specimen						
IM16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis						
Headache							
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						
IM17.4	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis						
IM17.5	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						
IM17.6	Choose and interpret diagnostic testing based on the clinical diagnosis including imaging						
IM17.8	Demonstrate in a mannequin or equivalent the correct technique						

	for performing a lumbar puncture						
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis						
IM17.1 4	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
Cerebrovascular accident							
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						
IM18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history						
IM18.6	Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion						
IM18.7	Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech						
IM18.1 0	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)						

IM18.1 7	Counsel patient and family about the diagnosis and therapy in an empathetic manner						
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Movement disorders

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						
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IM19.4	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales						
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IM19.5	Generate document and present a differential diagnosis and prioritise based on the history and physical examination						
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IM19.6	Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings						
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IM19.7	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders						
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Envenomation

IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient						
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	with a snake bite in the field						
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						
IM20.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination						
IM20.6	Choose and interpret the appropriate diagnostic testing in patients with snake bites						
Poisoning							
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy						
Nutritional and Vitamin deficiencies							
IM23.5	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet						
Geriatrics							
IM24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components						
Miscellaneous infections							
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						
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)						
IM25.6	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
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						
IM25.9	Assist in the collection of blood and other specimen cultures						
IM25.1	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						

IM25.1 2	Communicate to the patient and family the diagnosis and treatment of identified infection						
IM25.1 3	Counsel the patient and family on prevention of various infections due to environmental issues						
The role of physician in the community							
IM26.1 9	Demonstrate ability to work in a team of peers and superiors						
IM26.2 0	Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgemental and empathetic manner						
IM26.2 1	Demonstrate respect to patient privacy						
IM26.2 2	Demonstrate ability to maintain confidentiality in patient care						
IM26.2 3	Demonstrate a commitment to continued learning						
IM26.2 4	Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers						
IM26.2 5	Demonstrate responsibility and work ethics while working in the health care team						
IM26.2 6	Demonstrate ability to maintain required documentation in health care (including correct use of medical records)						
IM26.2 7	Demonstrate personal grooming that is adequate and appropriate for health care						

	responsibilities						
IM26.2 8	Demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning						
IM26.2 9	Communicate diagnostic and therapeutic options to patient and family in a simulated environment						
IM26.3 0	Communicate care options to patient and family with a terminal illness in a simulated environment						
IM26.3 1	Demonstrate awareness of limitations and seeks help and consultations appropriately						
IM26.3 2	Demonstrate appropriate respect to colleagues in the profession						
IM26.3 3	Demonstrate an understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors						
IM26.3 4	Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts						
IM26.3 5	Demonstrate empathy in patient encounters						
IM26.3 6	Demonstrate ability to balance personal and professional priorities						

IM26.3 7	Demonstrate ability to manage time appropriately						
IM26.3 8	Demonstrate ability to form and function in appropriate professional networks						
IM26.3 9	Demonstrate ability to pursue and seek career advancement						
IM26.4 0	Demonstrate ability to follow risk management and medical error reduction practices where appropriate						
IM26.4 1	Demonstrate ability to work in a mentoring relationship with junior colleagues						
IM26.4 2	Demonstrate commitment to learning and scholarship						
IM26.4 8	Demonstrate altruism						
IM26.4 9	Administer informed consent and appropriately address patient queries to a patient being enrolled in a research protocol in a simulated environment						

**Integration
Anatomy**

AN20.8 Vertical integration	Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment						
AN20.9 Vertical integration	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						
AN24 .2 Vertical integration	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate						
AN25. 7 Vertical integration	Identify structures seen on a plain x-ray chest (PA view)						
AN25. 8 Vertical integration	Identify and describe in brief a barium swallow						
AN25 .9 Vertical integration	Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart						
AN56. 1 Vertical integration	Describe & identify various layers of meninges with its extent & modifications						
AN62 .2 Vertical integration	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere						
AN62. 6 Vertical	Describe & identify formation, branches &						

al integr ation	major areas of distribution of circle of Willis						
PY4.9 Vertical integrati on	Discuss the physiology aspects of: peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease						
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment						
PY5.16	Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment						
PY11.1 4 Vertical integrati on	Demonstrate Basic Life Support in a simulated environment						
PY6.8 Vertical Integrati on	Demonstrate the correct technique to perform & interpret Spirometry						
BI1.4 Vertical integrati on	Perform urine analysis to estimate and determine normal and abnormal constituents						
BI1.26 Vertical integrati on	Calculate albumin: globulin (AG) ratio and creatinine clearance						
BI1.27 Vertical integrati on	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						
PA13.5	Perform, Identify and describe the peripheral						

	blood picture in anemia						
PA14.3 Vertical integrati on	Identify and describe the peripheral smear in microcytic anemia						
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features						
PA24.3	Describe and identify the microscopic features of peptic ulcer						
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						
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes						
PA35.3 Vertical integrati on	Identify the etiology of meningitis based on given CSF parameters						
MI2.3	Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis						
MI2.6	Identify the causative agent of malaria and filariasis						
MI3.2	Identify the common etiologic agents of diarrhea and dysentery						
MI5.3	Identify the microbial agents causing meningitis						

MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)						
MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain).						
PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction						
PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations						
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient						
PH3.3	Perform a critical evaluation of the drug promotional literature						
PH3.5	To prepare and explain a list of P-drugs for a given case/condition						
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use						
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance						
CM5.2	Describe and demonstrate the correct method of performing a nutritional assessment of						

	individuals, families and the community by using the appropriate method						
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						
CM6.2	Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data						
CM6.3	Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs						
CM6.4	Enumerate, discuss and demonstrate common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion						
CM7.4	Define, calculate and interpret morbidity and mortality indicators based on given set of data						
CM7.6	Enumerate and evaluate the need of screening tests						
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures.						

FM14.2	Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/supervised environment						
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 .						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted diseases						
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)						
DR11.2	Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions						
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions						
DR16.1	Identify and distinguish skin lesions of SLE						

DR16.2	Identify and distinguish Raynaud's phenomenon						
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1 Vertical integration	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment advanced life support in adults and children						
AS3.2 Horizontal integration	Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation						
AS3.3 Horizontal integration	Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery						
AS3.4 Horizontal integration	Choose and interpret appropriate testing for patients undergoing Surgery						
AS3.5 Horizontal integration	Determine the readiness for General Surgery in a patient based on the preoperative evaluation						
PS4.2 Horizontal integration	Elicit, describe and document clinical features of alcohol and substance use disorders						

PS4.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders						
PS10.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS12.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS16.4 Horizontal integration	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PE32.3 Horizontal integration	Interpret normal Karyotype and recognize Trisomy 21						
PE28.20	Counsel the child with asthma on the correct use of inhalers in a simulated environment						
PE34.5	Able to elicit, document and present history of contact with tuberculosis in every patient						

	encounter						
PE34.6	Identify a BCG scar						
PE34.7	Interpret a Mantoux test						
PE34.8	Interpret a Chest Radiograph						
PE34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis						
PE34.11	Perform AFB staining						
PE28.19	Describe the etio-pathogenesis, clinical features, diagnosis, management and prevention of asthma in children						
PM4.5 Horizontal integration	Demonstrate correct assessment of muscle strength and range of movements						
PM6.1 Horizontal integration	Perform and demonstrate a clinical examination of sensory and motor deficits of peripheral nerve						
CT1.5	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations						
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						
CT1.7	Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test						
CT1.10	Perform and interpret an AFB stain						
CT1.11	Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration						
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)						
CT1.17	Define criteria for the cure of Tuberculosis; describe and recognise the features of drug resistant tuberculosis, prevention and therapeutic regimens						
CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program						
CT1.19	Communicate with patients and family in an empathetic manner about the diagnosis, therapy						

CT2.8	Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants						
CT2.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.11	Describe, discuss and interpret pulmonary function tests						
CT2.12	Perform and interpret peak expiratory flow rate						
CT2.13	Describe the appropriate diagnostic work up based on the presumed aetiology						
CT2.14	Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph						
CT2.15	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.18	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids						
CT2.19	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy						
CT2.21	Describe discuss and counsel patients appropriately on smoking cessation						
CT2.22	Demonstrate and counsel patient on the correct use of inhalers						

CT2.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
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						
DR5.2	Identify and differentiate scabies from other lesions						
DR6.2	Identify and differentiate pediculosis from other skin lesions						
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate						

	investigations in a patient with mental retardation						
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment						
PM3.4	Demonstrate spasticity, rigidity and dystonia in children with cerebral palsy						
PS1.1	Establish rapport and empathy with patients						
PS1.3	Demonstrate breaking of bad news in a simulated environment						
PS1.4	Describe and demonstrate the importance of confidentiality in patient encounters						
PS3.3	Elicit, present and document a history in patients presenting with a mental disorder						
PS3.4	Describe the importance of establishing rapport with patients						
PS3.5	Perform, demonstrate and document a minimal mental examination						
PS3.9	Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders						
PS4.2	Elicit, describe and document clinical features of alcohol and substance use disorders						
PS4.3	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse						

	disorders						
PS4.5	Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment						
PS5.2	Enumerate, elicit, describe and document clinical features, positive s						
PS5.4	Demonstrate family education in a patient with schizophrenia in a simulated environment						
PS6.2	Enumerate, elicit, describe and document clinical features in patients with depression						
PS6.3	Enumerate and describe the indications and interpret laboratory and other tests used in depression						
PS6.5	Demonstrate family education in a patient with depression in a simulated environment						
PS7.2	Enumerate, elicit, describe and document clinical features in patients with bipolar disorders						
PS7.3	Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders						
PS7.5	Demonstrate family education in a patient with bipolar disorders in a simulated environment						

PS8.2	Enumerate, elicit, describe and document clinical features in patients with anxiety disorders						
PS8.3	Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders						
PS8.5	Demonstrate family education in a patient with anxiety disorders in a simulated environment						
PS9.2	Enumerate, elicit, describe and document clinical features in patients with stress related disorders						
PS9.3	Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders						
PS9.5	Demonstrate family education in a patient with stress related disorders in a simulated environment						
PS10.2	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS10.5	Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a						

	simulated environment						
PS11.2	Enumerate, elicit, describe and document clinical features in patients with personality disorders						
PS11.3	Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders						
PS11.5	Demonstrate family education in a patient with personality disorders in a simulated environment						
PS12.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS12.5	Demonstrate family education in a patient with psychosomatic disorders in a simulated environment						
PS13.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders						
PS13.3	Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual and gender identity disorders						

PS13.5	Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate investigations in a patient with mental retardation						
PS16.4	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs.						
IM17.1 4	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
IM24.2	Perform multidimensional geriatric assessment that includes medical,						

	psycho-social and functional components						
DR1.2	Identify and grade the various common types of acne						
DR3.1	Identify and distinguish psoriatic lesions from other causes						
DR3.2	Demonstrate the grattage test						
DR4.1	Identify and distinguish lichen planus lesions from other causes						
DR5.2	Identify and differentiate scabies from other lesions in adults and children						
DR6.2	Identify and differentiate pediculosis from other skin lesions in adults and children						
DR7.2	Identify Candida species in fungal scrapings and KOH mount						
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions						
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions						
DR8.4	Identify and distinguish viral warts from other skin lesions						
DR8.5	Identify and distinguish molluscum contagiosum from other skin lesions						
DR8.6	Enumerate the indications, describe the procedure and perform a Tzanck smear						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an						

	appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.2	Identify spirochete in a dark ground microscopy						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease						

General Medicine

Subject: General Medicine

Third Year MBBS

Sub Item: Theory lectures/ Clinical postings/Tutorials/seminars/self directed learning/ Electives

Final Summary

Sr. No	Description	Dates		Attendance percentage	Status	Signature of Teacher
		From	To		Complete/ Incomplete	
1	Theory lectures					
2	Clinical postings					
3	AETCOM Module					
4.	Electives					
5	Vertical Integraon					

6	Extracurricular activities					
7	Sports /Physical Education					

Subject: General Surgery

Clinical Postings

Learner -Doctor Programme (clinical clerkship)

Phase II

- History taking
- General Examination
- Local Examination with demonstration of signs.
- Psychomotor Skills
- AETCOM of Phase II

Phase III/ I

- All of Phase II plus
- Psychomotor Skills
- Differential diagnosis
- Investigations
- AETCOM of Phase III Part I

Phase III/ II

- All of Phase III Part I plus
- Psychomotor Skills
- Management
- Counselling
- AETCOM Phase III/ Part II

-There shall be end post exam at the end of 1st, 2nd and 3rd clinical posting which will be added to internal assessment for practicals.

-At the end of 4th clinical posting of 4 weeks there will be only formative assessment.

Subject: General Surgery Lectures

MBBS Phase II-

Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
			Lecture: 1		
1.	Introductory Lecture		Welcome History of surgery Introduction to surgery and allied subjects Teaching, Learning & Assessment -CBME		1
2.	Metabolic Response to Injury		Lecture: 2		
		SU 1.1			1
			Describe basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.	Physiology and Biochemistry	
		SU 1.2	Lecture: 3		1
			Describe the factors that affect the metabolic responses to injury.	Biochemistry	
3.	Shock				
		SU 2.1	Lecture: 4		1
		PA6.3	Describe Pathophysiology of shock, types of shock and principles of resuscitation including fluid replacement and monitoring. Define and describe shock, its pathogenesis and its stages	Pathology and Physiology	
		SU 2.2	Lecture: 5		1
			Describe the clinical features of shock and its appropriate treatment		

4.	Blood and blood components				
		SU 3.1	Lecture: 6		1
		PA22.4	Describe the indications and appropriate use of blood and blood products and complications of blood transfusion. Enumerate blood components and describe their clinical uses	Pathology	
5.	Burns				
		SU 4.1	Lecture: 7		1
			Describe pathophysiology of burns. Describe clinical features, diagnose type and extent of burns.	Physiology	
		SU 4.2, 4.3	Lecture: 8		1
			Plan appropriate treatment of burns. Discuss medicolegal aspect in burns injuries.		
6.	Wound healing and wound care				
		SU 5.1	Lecture: 9		1
		PA5.1	Describe normal wound healing and factors affecting healing. Define and describe the process of repair and regeneration including wound healing and its types	Pathology	
		PA4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events		
		PA4.2	Enumerate and describe the mediators of acute inflammation		
		SU 5.3	Lecture: 10		1
			Differentiate the various types of wounds, plan and observe management of wounds.		
7.	Surgical Infections				
		SU 6.1	Lecture: 11		1
			Define and describe the etiology and pathogenesis of surgical infections	Microbiology	

		SU 6.1	Lecture: 12		1
			Define and describe the etiology and pathogenesis of surgical infections- HIV-AIDS, Hepatitis, Gas Gangrene etc.	Microbiology	
		SU 6.2	Lecture: 13		1
			Enumerate prophylactic and therapeutic antibiotics. Plan appropriate management.		
8.	Investigations of a surgical patient				
		SU 9.1	Lecture: 14		1
		PA8.1 PA8.2 MI7.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient. Describe the diagnostic role of cytology and its application in clinical care. Describe the basis of exfoliative cytology including the technique, stains used Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	Biochemistry, Microbiology and Pathology	
9.	Nutrition and fluid therapy				
		SU 12.1	Lecture:15		1
			Enumerate the causes and consequences of malnutrition in the surgical patient.	Physiology	
		SU 12.2	Lecture:16		1
			Describe and discuss the methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patients.	Physiology	
		SU 12.3	Lecture:17		1

			Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications.	Biochemistry	
10.	Transplantation				
		SU 13.1	Lecture: 18		1
			Describe the immunological basis of organ transplantation.	Microbiology	
		SU 13.2	Lecture: 19		1
			Discuss the principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ transplantation	Microbiology, Pharmacology	
11.	Basic surgical skills				
		SU 14.1	Lecture: 20		1
		MI1.4	Describe Aseptic techniques, sterilisation and disinfection. 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	Microbiology	
		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		
12.	Biohazard disposal				
		SU 15.1	Lecture: 21		1
		MI8.7	Describe classification of hospital waste and appropriate methods of disposal. Demonstrate Infection control practices and use of Personal Protective Equipment (PPE)	Microbiology	
13.	Trauma				
		SU 17.1	Lecture: 22		1
			Describe the principles of first aid.		
		SU 17.2	Lecture: 23		1

			Basic Life Support	Anaesthesiology	
14.	Skin and Subcutaneous tissue				
		SU 18.1, SU 18.2, 18.3	Lecture: 24		1
			Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections. Describe clinical examination of surgical patient including swelling and discuss investigations for diagnosis and treatment plan. Classify skin tumours. Differentiate different skin tumours and discuss their management.		
15.	Vascular diseases				
		SU27.1	Lecture: 25		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.		

MBBS Phase III- Part I

Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Metabolic response to injury				
		SU1.3	Lecture: 1 Describe basic concepts of postoperative care.		1
2.	Surgical Audit and Research				
		SU7.1.7.2	Lecture: 2 Describe the planning and conduct of surgical audit Describe the principles and steps of clinical research in General Surgery	Community Medicine	1
3.	Ethics				
		SU8.1, 8.2	Lecture: 3 Describe the principles of Ethics as it pertains to General Surgery and demonstrate professionalism and empathy to the patient undergoing general surgery	Forensic Medicine, AETCOM	1
		AS10.3	Describe the role of communication in patient safety		
		SU9.2	Lecture: 4 Biological basis for early detection of cancer and multidisciplinary approach in management of cancer		1
4.	Pre, intra and post-operative management.				
		SU10.1	Lecture: 5 Describe the principles of perioperative management of common surgical procedures and Describe the steps and obtain informed consent in a simulated environment	AETCOM	1

		IM5.13, IM15.9	Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease. 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.		
5.	Anaesthesia and pain management				
		SU11.1, 11.5	Lecture: 6		1
		AS3.1, AS5.6	Describe principles of Preoperative assessment. Describe principles of providing post-operative pain relief and management of chronic pain. Describe the principles of preoperative evaluation. Observe and describe the principles and steps/ techniques involved S in common blocks used in Surgery(including brachial plexus blocks)	Anaesthesiology	
		SU11.6	Lecture: 7		1
		AS3.2	Describe Principles of safe General Surgery Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation	Anaesthesiology	
6.	Transplantation				
		SU13.4	Lecture: 9		1
			Counsel patients and relatives on organ donation in a simulated Environment Enumerate the indications for hepatic transplantation	AETCOM	
7.	Basic Surgical Skills				
		SU14.2	Lecture: 10		1
			Describe Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.		
		SU14.3	Lecture: 11		1
			Describe the materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)		

8.	Trauma				
		SU17.2	Lecture: 12		1
			Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	Anaesthesiology	
9.	Developmental anomalies of face, mouth and jaws				
		SU19.1, 19.2	Lecture: 13		1
			Describe the etiology and classification of cleft lip and palate. Describe the Principles of reconstruction of cleft lip and palate.	Human Anatomy	
10.	Oropharyngeal cancer				
		SU20.1, SU20.2	Lecture: 14		1
			Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer. Enumerate the appropriate investigations and discuss the Principles of treatment and reconstructive flap	ENT	
		DE 4.1, DE 4.2, DE 4.3, DE 4.4	Lecture: 15		1
			Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity. Discuss the role of etiological factors in the formation of precancerous /cancerous lesions. Identify potential pre-cancerous /cancerous lesions. Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.		
11.	Disorders of salivary glands				
		SU21.1	Lecture: 16		1
		AN28.9 , AN34.1 ,	Describe surgical anatomy of the salivary glands, pathology clinical presentation of disorders of salivary glands Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct		

			and surgical importance. Describe & demonstrate the morphology, relations and nerve supply		
		SU21.2	Lecture: 17		1
			Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands		
12.	Thyroid and Parathyroid Glands				
		SU22.1, 22.2	Lecture: 18		1
		AN35.2 PA32.1, IM12.13, IM12.15	Describe the applied anatomy and physiology of thyroid. Describe the etiopathogenesis of thyroidal swellings. Describe the etiopathogenesis of thyroidal swellings. Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings, Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs. Describe and discuss the indications of thionamide therapy, radio iodine therapy and Surgery in the management of thyrotoxicosis	Human Anatomy, Pathology	
		SU22.4	Lecture: 19		1
			Describe the clinical features, classification and principles of management of thyroid cancer		
		SU22.5	Lecture: 20		1
		IM22.2	Describe the applied anatomy of parathyroid. Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism	Human Anatomy	
13.	Adrenal Glands				
		SU23.1, 23.2, 23.3	Lecture: 21		1

			Describe the applied anatomy of adrenal glands. Describe the etiology, clinical features and principles of management of disorders of adrenal gland. Describe the clinical features, principles of investigation and management of Adrenal tumours	Human Anatomy	
14.	Breast				
		SU25.1	Lecture: 22		1
		PA31.1	Describe applied anatomy and appropriate investigations for breast disease Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease	Human Anatomy	
		SU25.2	Lecture: 23		1
		PA31.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast. Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast		
		SU 25.3	Lecture: 24		1
			Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.	Radiodiagnosis	
15.	Vascular diseases				
		SU 27.1	Lecture: 25		
		AN19.3, AN20.5 AN20.9	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease. Explain the concept of "Peripheral heart. Explain anatomical basis of varicose veins and deep vein thrombosis. 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		

MBBS Phase III- Part II

Total Teaching hours: 70 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Anaesthesia and Pain Management				
		SU 11.2	Lecture: 1		1
		AS5.6	Enumerate the principles of general, regional and local anaesthesia. Observe and describe the principles and steps/ techniques involved in common blocks used in Surgery (including brachial plexus blocks)	Anaesthesiology	
		SU 11.4	Lecture: 2		1
			Enumerate the indications and principles of day care General Surgery.	Anaesthesiology	
		SU 16.1	Lecture: 3		1
			Minimal Invasive General Surgery: Describe indications, advantages and disadvantages of Minimally Invasive General Surgery.		
2.	Trauma				
		SU 17.4, 17.5, 17.6	Lecture: 4		1
			Describe pathophysiology, mechanism of head injuries. Describe clinical features for neurological assessment and GCS in head injuries. Choose appropriate investigations and discuss the principles of management of head injuries.		

		SU 17.7	Lecture: 5		1
			Describe the clinical features of soft tissue injuries. Choose appropriate investigations and discuss the principles of management.		
		SU 17.8, 17.9	Lecture: 6		1
			Describe pathophysiology of chest injuries. Describe the clinical features and principles of management of chest injuries.		
		SU17.3	Lecture: 7		1
			Describe pathophysiology of Abdominal injuries. Describe the clinical features and principles of management of Abdominal injuries.		
3.	Pancreas				
		SU 24.1	Lecture: 8		1
		AN55.2	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis. Demonstrate the surface projections of: stomach, liver, fundus of gall bladder, spleen, duodenum, pancreas, ileocecal junction, kidneys & root of mesentery	Human Anatomy	
		SU 24.2	Lecture: 9		1
			Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumours.		
		SU 24.3	Lecture: 10		1
			Describe the principles of investigation and management of pancreatic disorders including pancreatitis and endocrine tumours.		
4.	Cardio-thoracic General Surgery- Chest- Heart and Lungs				
		SU 26.1, 26.2	Lecture: 11		1

			Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases, diseases of Thorax and Diaphragm		
		SU 26.3	Lecture: 12		1
			Describe the clinical features of mediastinal diseases and the principles of management.		
		SU 26.4	Lecture: 13		1
			Describe the etiology, pathogenesis, clinical features of tumors of the lung and the principles of management.		
5.	Vascular Diseases				
		SU 27.1	Lecture: 14		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.		
		SU 27.2, 27.3, 27.4	Lecture: 15		1
			Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease. Describe clinical features, investigations and principles of management of vasospastic disorders. Describe the types of gangrene and principles of amputation.		
		SU 27.5, 27.6	Lecture: 16		1
			Describe the applied anatomy of the venous system of lower limb. Explain anatomical basis of varicose veins and deep vein thrombosis	Human Anatomy	
		AN20.5			
		SU 27.7	Lecture: 17		1
			Describe pathophysiology, clinical features, Investigations and principles of management of lymph edema, lymphangitis and lymphomas. Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system		
6.	Abdomen				

		SU 28.1	Lecture: 18		1
		AN44.4 AN44.5	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle. Explain the anatomical basis of inguinal hernia.	Human Anatomy	
		SU 28.1	Lecture: 19		1
			Describe pathophysiology, clinical features, Investigations and principles of management of Hernias	Human Anatomy	
		SU 28.1	Lecture: 20		1
		AN44.6	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias Describe & demonstrate attachments of muscles of anterior abdominal wall	Human Anatomy	
		SU 28.1	Lecture:21		1
		AN44.7	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias Enumerate common Abdominal incisions	Human Anatomy	
		SU 28.3	Lecture: 22		1
		AN47.2 AN47.3 AN47.4	Describe causes, clinical features, complications and principles of management of peritonitis and omental pathologies Name & identify various peritoneal folds & pouches with its explanation. Explain anatomical basis of Ascites & Peritonitis Explain anatomical basis of Subphrenic abscess	Human Anatomy	
		SU 28.4	Lecture: 23		1
		AN47.4	Describe pathophysiology, clinical features, investigations and K principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors Explain anatomical basis of Subphrenic abscess		
		SU 28.5	Lecture: 24		1
		AN23.1	Describe the applied Anatomy and physiology of esophagus Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of	Human Anatomy, Physiology	

			oesophagus		
		SU 28.6	Lecture: 25		1
			Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus		
		SU 28.7	Lecture: 26		1
		AN47.6	Describe the applied anatomy and physiology of stomach 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 Describe & identify boundaries and recesses of Lesser & Greater sac	Human Anatomy	
		AN47.1			
		SU 28.8	Lecture: 27		1
			Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach		
		SU 28.10	Lecture: 28		1
		AN47.4 AN47.6	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 Explain anatomical basis of Subphrenic abscess Liver biopsy (site of needle puncture), referred pain in cholecystitis, Obstructive jaundice	Human Anatomy	
		SU 28.10			
			Describe the applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumours of the liver	Human Anatomy	

		SU 28.10	Lecture: 30		1
		AN47.3	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 Explain anatomical basis of Ascites & Peritonitis	Human Anatomy	
		SU 28.11	Lecture: 31		1
		AN47.6	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis – prophylaxis Explain the anatomical basis of Splenic notch, accessory spleens, Kehr’s sign	Human Anatomy	
		SU 28.12	Lecture: 32		1
		AN47.7	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system Mention the clinical importance of Calot’s triangle	Human Anatomy	
		SU 28.12	Lecture: 33		1
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system	Human Anatomy	
		SU 28.12	Lecture: 34		1
		AN47.10 AN47.11	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system Enumerate the sites of portosystemic anastomosis Explain the anatomic basis of hematemesis & caput medusae in portal hypertension	Human Anatomy	

		SU 28.13, 28.14	Lecture: 35		1
		AN52.6	Describe the applied anatomy of small and large intestine Describe the development and congenital anomalies of foregut, midgut & hindgut	Human Anatomy	
		SU 28.13, 28.14	Lecture: 36		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	Lecture: 37		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	Lecture: 38		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	Lecture: 39		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	Lecture: 40		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	Lecture: 41		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.15	Lecture: 42		1

			Describe the clinical features, investigations and principles of management of diseases of Appendix including appendicitis and its complications.		
		SU 28.16	Lecture: 43		1
		AN49.4	Describe applied anatomy including congenital anomalies of the rectum and anal canal Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa	Human Anatomy	
		SU 28.16	Lecture: 44		1
		AN48.8	Describe applied anatomy including congenital anomalies of the rectum and anal canal Mention the structures palpable during vaginal & rectal examination	Human Anatomy	
		SU 28.17	Lecture: 45		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
		SU 28.17	Lecture: 46		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
7.	Urinary System				
		SU 29.1	Lecture: 47		1
			Describe the causes, investigations and principles of management of Hematuria		
		SU 29.2	Lecture: 48		1
		AN52.7	Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system Describe the development of urinary system	Human Anatomy	
		SU 29.3	Lecture: 49		1
		MI7.1	Describe the Clinical features, Investigations and principles of management of urinary tract infections Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	Microbiology	
		SU 29.4	Lecture: 50		1

			Describe the clinical features, investigations and principles of management of hydronephrosis		
		SU 29.5	Lecture: 51		1
			Describe the clinical features, investigations and principles of management of renal calculi		
		SU 29.5	Lecture: 52		1
			Describe the clinical features, investigations and principles of management of renal calculi		
		SU 29.6	Lecture: 53		1
			Describe the clinical features, investigations and principles of management of renal tumours		
		SU 29.7	Lecture: 54		1
			Describe the principles of management of acute and chronic retention of urine		
		SU 29.8	Lecture: 55		1
			Describe the clinical features, investigations and principles of management of bladder cancer		
		SU 29.9	Lecture: 56		1
			Describe the clinical features, investigations and principles of management of disorders of prostate Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer	Human Anatomy	
		AN48.7			
		SU 29.10	Lecture: 57		1
			Describe clinical features, investigations and management of urethral strictures and urethral injuries		
8.	Penis, Testis and scrotum				
		SU 30.1	Lecture: 58		1
			Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Explain the anatomical basis of Phimosis & Circumcision	Human Anatomy	
		AN46.5			
		SU 30.1	Lecture: 59		1

			Describe the clinical features, investigations and principles of management of carcinoma penis.		
		SU 30.2, 30.3	Lecture: 60		1
		AN46.1	Describe the applied anatomy clinical features, investigations and principles of management of undescended testis. Describe the applied anatomy clinical features, investigations and principles of management of epididymo-orchitis Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	Human Anatomy	
		SU 30.4, 30.5	Lecture: 61		1
		AN46.4	Describe the applied anatomy clinical features, investigations and principles of management of varicocele and hydrocoele Explain the anatomical basis of varicocele	Human Anatomy	
		SU 30.6	Lecture: 62		1
			Describe classification, clinical features, investigations and principles of management of benign tumours of testis.		
		SU 30.6	Lecture: 63		1
			Describe classification, clinical features, investigations and principles of management of malignant tumours of testis.		
9.			Lecture: 64		1
			Revision Lecture 1		
10.			Lecture: 65		1
			Revision Lecture 2		
11.			Lecture: 66		1
			Revision Lecture 3		
12.			Lecture: 67		1
			Revision Lecture 4		
13.			Lecture: 68		1
			Revision Lecture 5		

14.			Lecture: 69		1
			Revision Lecture 6		
15.			Lecture: 70		1
			Revision Lecture 7		

Subject: General Surgery
Self-Directed Learning

MBBS phase III/I

Total Teaching hours : 5 hours

***These are suggested topics which can be modified at institutional level**

Sr. No.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Ethics				
		SU8.1	SDL:1		3
			Describe the principles of Ethics as it pertains to General Surgery. Demonstrate Professionalism and empathy to the patient.		
2.	Transplantation				
		SU13.3	SDL:2		2
			Discuss the legal and ethical issues concerning organ donation. Counsel patients and relatives on organ donation in a simulated.		

MBBS phase III/II**Total Teaching hours : 15 hours*****These are suggested topics which can be modified at institutional level**

Sr. No	TOPICS	COMPETENCIES	SUBTOPICS	HOURS
1.	Thyroid			
		SU 22.2, SU 22.3, SU22.4	SDL:1	4
			Describe the etiopathogenesis of thyroïdal swellings. Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management. Describe the clinical features, classification and principles of management of thyroid cancer	
2.	Breast			
		SU 25.2, SU 25.3	SDL:2	4
			Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast. Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.	
3.	Oral malignancy			
		SU 20.1, SU 20.2	SDL:3	3
			Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer. Enumerate the appropriate investigations and discuss the Principles of treatment.	
4.	Communication skills – Role play			
		AETCOM	SDL:4	4

Subject: General Surgery **Small Group Discussion**

MBBS phase III/I -

Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 35 hours

- Competencies written in red (horizontal) and green (vertical) are of alignment and integration.
- 25 % of allotted time of the third professional shall be utilised for integrated learning with pre- and para-clinical subjects and shall be assessed during the clinical subject's examination.
- This allotted time will be utilised as integrated teaching by para- clinical subjects with clinical subjects (as Applied Anatomy, Clinical Pathology, Clinical Pharmacology, Clinical Microbiology, Radio diagnosis, Instruments, Operative Surgery, Communication skills etc.).

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Metabolic response to injury				
		SU1.3	SGD: 1		1
		AS3.1, AS9.3, AS9.4	Describe basic concepts of perioperative care- preoperative Describe the principles of preoperative evaluation Describe the principles of fluid therapy in the preoperative period	Anaesthesiology	

			Enumerate blood products and describe the use of blood products in the preoperative period		
		SU1.3	SGD: 2		1
			Describe basic concepts of perioperative care.- intraoperative	Anaesthesiology	
		SU1.3,	SGD: 3		1
		AS6.3	Describe basic concepts of perioperative care- postoperative Describe the common complications encountered by patients in the recovery room, their recognition and principles of management	Anaesthesiology	
2.	Shock				
		SU2.1,	SGD: 4		1
		PA6.3	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring. Define and describe shock, its pathogenesis and its stages	Pathology, Physiology	
		SU2.2,	SGD: 5		1
		IM15.3	Describe the clinical features of shock and its appropriate treatment Describe and discuss the physiologic effects of acute blood and volume loss	General Medicine	
3.	Blood and blood components				
		SU3.2	SGD: 6		1
		PA22.4	Observe blood transfusions Enumerate blood components and describe their clinical uses	Pathology	
4.	Burns				

		SU4.1, SU4.2	SGD: 7		1
			Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns. Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.	Physiology	
		SU4.3	SGD: 8		1
		FM2.25	Discuss the Medicolegal aspects in burn injuries. Describe types of injuries, clinical features, pathophysiology, postmortem findings and medico-legal aspects in cases of burns, scalds, lightning, electrocution and radiations		
					1
				Forensic Medicine	
5.	Wound healing and wound care				
		SU5.2, SU5.3	SGD: 9		1
			Elicit, document and present a history in a patient presenting with wounds. Differentiate the various types of wounds, plan and observe management of wounds.		
		SU5.4	SGD:10		1
			Discuss medico legal aspects of wounds		
					1
		FM3.3 , FM3.4	Mechanical injuries and wounds: 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	Forensic Medicine	

		, FM3.6	medico-legal aspects. Mechanical injuries and wounds: define injury, assault & hurt. Describe IPC pertaining to injuries Mechanical injuries and wounds: Describe healing of injury and fracture of bones with its medico-legal importance		
6.	Surgical infections				
		SU6.1	SGD:11		1
			Define and describe the aetiology and pathogenesis of surgical	Microbiology	
		MI7.1	Infections Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system		
		SU6.2	SGD:12		1
			Enumerate Prophylactic and therapeutic antibiotics		
			Plan appropriate management		
7.	Surgical Audit and Research				
		SU7.1, SU7.2	SGD:13		1
			Describe the Planning and conduct of Surgical audit Describe the principles and steps of clinical research in General Surgery	Community Medicine	
8.	Ethics				
		SU8.1 ,SU8.2	SGD:14		1
			Describe the principles of Ethics as it pertains to General Surgery Demonstrate Professionalism and empathy to the patient undergoing general surgery	Forensic Medicine, AETCOM	

9.	Investigation of surgical patient				
		SU9.1	SGD:15		1
			Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	Biochemistry,microbiology,pathology	
		SU9.2	SGD 16		
			Biological basis for early detection of cancer and multidisciplinary approach in management of cancer		
10.	Pre, intra and post-operative management.				
		SU10.1	SGD:17		1
			Describe the principles of perioperative management of common surgical procedures		
11.	Nutrition and fluid therapy				
		SU12.1	SGD:18	Physiology,Biochemistry	1
			Enumerate the causes and consequences of malnutrition in the surgical patient		
		SU12.2	Describe and discuss the methods of estimation and replacement Of the fluid and electrolyte requirements in the surgical patient		

		SU12.3	Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications		
12.	Transplantation				
		SU13.3	SGD: 19	AETCOM	1
			Discuss the legal and ethical issues concerning organ donation		
13.	Basic Surgical Skills				
		SU14.2	SGD: 20		1
			Describe Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.		
		SU14.3	SGD: 21		1
			Describe the materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)		
14	Biohazard Disposal	SU15.1	SGD 22	Microbiology, Community medicine	1
		MI8.7	Describe classification of hospital waste and appropriate methods of disposal Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)		
15.	Trauma				
		SU17.3	SGD:23		1
			Describe the Principles in management of mass casualties		
16.	Skin and Subcutaneous Tissue		SGD 24		1
		SU18.1	Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections. Classify skin tumors		
		SU18.2			

		SU18.3	Differentiate different skin tumors and discuss their management. Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.		
17.	Developmental anomalies of face, mouth and jaws				
		SU19.1, 19.2	SGD:25	Human Anatomy	1
			Describe the etiology and classification of cleft lip and palate. Describe the Principles of reconstruction of cleft lip and palate		
18	Oropharyngeal carcinoma		SGD 26	ENT	1
		SU20.1 SU20.2	Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer Enumerate the appropriate investigations and discuss the Principles of treatment		
19.	Disorders of salivary glands				
		SU21.1	SGD:27	Human Anatomy	1
		AN34.1 AN28.9	Describe surgical anatomy of the salivary glands, pathology, and clinical presentation of disorders of salivary glands Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion		

			Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance		
		SU21.2	SGD:28		1
			Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands		
20.	Thyroid and Parathyroid Glands				
		SU22.1, 22.2	SGD:29	Human anatomy, Pathology	1
		AN35.2	Describe the applied anatomy and physiology of thyroid. Describe the etiopathogenesis of thyroidal swellings. Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland		
		SU22.3	SGD:30		1
		PA32.1	Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings		
		SU22.4, SU22.5	SGD:31		1
		AN35.8	Describe the clinical features, classification and principles of management of thyroid cancer		

			Describe the applied anatomy of parathyroid Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management Describe the anatomically relevant clinical features of Thyroid swellings		
21.	Breast				
		SU 25.1	SGD:32	Human anatomy, Radiodiagnosis	1
		AN9.2	Describe applied anatomy and appropriate investigations for breast disease Breast-Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast		
		SU 25.2	SGD:33		1
			Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast.		
22.	Vascular diseases				
		SU 27.1, 27.2, 27.3, 27.4	SGD:34	Human Anatomy	1
		AN20.9	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease. Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease. Describe clinical features, investigations and principles of management of vasospastic disorders. Describe the types of gangrene and principles of amputation.		

			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		
		SU 27.5, 27.6, 27.7	SGD:35		1
		AN6.3 AN23.7	Describe the applied anatomy of venous system of lower limb. Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins. Describe pathophysiology, clinical features, investigations and principles of management of Lymph edema, lymphangitis and Lymphomas. Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system Mention the extent, relations and applied anatomy of lymphatic duct		

MBBS Phase III/II-

Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 125 hours

- Competencies written in **red (horizontal)** and **green (vertical)** are of alignment and integration.
- 25 % of allotted time of the third professional shall be utilised for integrated learning with pre- and para-clinical subjects and shall be assessed during the clinical subject's examination.
- This allotted time will be utilised as integrated teaching by para- clinical subjects with clinical subjects (as Applied Anatomy, Clinical Pathology, Clinical Pharmacology, Clinical Microbiology, Radio diagnosis, Instruments, Operative Surgery, Communication skills etc.).

SR. NO.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Shock				
		SU 2.3	SGD: 1		1
		PA6.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care. Define and describe shock, its pathogenesis and its stages	AETCOM	
2	Blood and blood components				
		SU 3.3	SGD: 2		1
		PA22.4	Counsel patients and family/friend for blood transfusion and blood donation. Enumerate blood components and describe their clinical uses	Pathology	
3.	Burns				
		SU 4.4	SGD: 3		1
			Communicate and counsel patients and families on the outcome and rehabilitating demonstrating empathy and care.		

4.	Surgical infections				
		SU 6.1, 6.2,	SGD: 4		1
			<p>Communicate and counsel patients and families on the outcome and rehabilitating demonstrating empathy and care.</p> <p>Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections. Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abscess and caries spine</p> <p>a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis. Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy</p>	Orthopaedics	
		OR3.1,OR3.3,OR4.1			
5.	Ethics				
		SU 8.3	SGD: 5		1
			Discuss Medico-legal issues in surgical practice	Forensic Medicine, AETCOM	
6.	Investigation of surgical patient				
		SU 9.2	SGD: 6		1

			Biological basis for early detection of cancer and multidisciplinary approach in management of cancer		
		SU 9.3	SGD: 7		1
			Communicate the results of surgical investigations and counsel the patient appropriately.		
7.	Pre, intra and post operative management.				
		SU 10.2	SGD: 8		1
		IM24.11	Describe the steps and obtain informed consent in a simulated environment. Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery	AETCOM	
		SU 10.3	SGD: 9		1
			Observe common surgical procedures and assist in minor surgical procedures; observe emergency life saving surgical procedures.		
		SU 10.4	SGD: 10		1
			Perform basic surgical skills such as first aid including suturing and minor surgical procedures in simulated environment.		
8.	Anaesthesia and Pain Management				
		SU 11.3	SGD: 11		1
			Demonstrate maintenance of an airway in a mannequin or equivalent.	Anaesthesiology	
		SU 11.1, 11.2	SGD: 12		1

			Describe principles of preoperative assessment. Enumerate the principles of general, regional and local anaesthesia.	Anaesthesiology	
		SU 11.3, 11.4, 11.5	SGD: 13		1
			Enumerate the indications and principles of day care general surgery. Describe principles of providing post-operative pain relief and management of chronic pain. Describe principles of safe General surgery.	Anaesthesiology	
9.	Nutrition and fluid therapy				
		SU 12.1, 12.2	SGD: 14		1
			Enumerate the causes and consequences of malnutrition in the surgical patient. Describe and discuss the methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patient.	Physiology	
		SU 12.3	SGD: 15		1
			Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications.	Biochemistry	
10.	Transplantation				
		SU 13.3	SGD: 16		1
			Discuss the legal and ethical issues concerning organ donation.	AETCOM	
11.	Biohazard disposal				
		SU 15.1	SGD: 17		1
			Describe classification of hospital waste and appropriate methods of disposal.	Microbiology	
12.	Minimally invasive General surgery				

		SU 16.1	SGD: 18		1
			Minimally invasive General surgery: Describe indications advantages and disadvantages of minimally invasive General surgery.		
13.	Trauma				
		SU 17.4	SGD: 19		1
			Describe pathophysiology, mechanism of head injuries.		
		SU 17.5	SGD: 20		1
			Describe clinical features for neurological assessment and GCS in head injuries.		
		SU 17.6,	SGD: 21		1
			Choose appropriate investigations and discuss the principles of management of head injuries. <i>Describe the clinical features, evaluation, diagnosis and management of disability following traumatic brain injury</i>	Physical Medicine & Rehabilitation	
		PM8.1			
		SU 17.7	SGD: 22		1
			Describe the clinical features of soft tissue injuries. Choose appropriate investigations and discuss the principles of management. <i>Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures</i>	Orthopaedics	
		OR11.1			
		SU 17.8	SGD: 23		1
			Describe pathophysiology of chest injuries.		
		SU 17.9	SGD: 24		1

			Describe the clinical features and principles of management of chest injuries.		
		SU 17.10	SGD: 25		1
			Demonstrate Airway maintenance. Recognise and manage tension pneumothorax, hemothorax and flail chest in simulated environment.	Anaesthesiology	
14.	Skin and subcutaneous tissue				
		SU 18.3.	SGD: 26		1
			Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan. <i>Enumerate the indications of debridement, and Split thickness skin grafting.</i>	Physical Medicine & Rehabilitation	
15.	Oropharyngeal cancer				
		SU 20.1	SGD: 27		1
			Describe etiopathogenesis of oral cancer. Symptoms and signs of oropharyngeal cancer.	ENT	
		SU 20.2	SGD: 28		1
			Enumerate the appropriate investigations for oropharyngeal cancer.		
		SU 20.2	SGD: 29		1
			Enumerate the appropriate investigations for oropharyngeal cancer.		
		SU 20.3	SGD: 30		1
			Enumerate the principles of treatment for oropharyngeal cancer.		
		SU 20.3	SGD: 31		1

			Enumerate the principles of treatment for oropharyngeal cancer.		
16.	Adrenal Glands				
		SU 23.1, 23.2	SGD: 32		1
			Describe the applied anatomy of adrenal glands. Describe the etiology, clinical features and principles of management of disorders of adrenal glands.	Human Anatomy, General Medicine	
		SU 23.3	SGD: 33		1
			Describe the clinical features, principles of investigation and management of adrenal tumors.		
17.	Pancreas				
		SU 24.1,	SGD: 34		1
		PA32.6	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis. Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	Human Anatomy	
		SU 24.2	SGD: 35		1
			Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumors.		
		SU 24.3	SGD: 36		1
			Describe the principles of investigation and management of pancreatic disorders including pancreatitis and endocrine tumors.		

18.	Breast				
		SU 25.3	SGD: 37		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of benign and malignant tumors of breast.	Radiodiagnosis	
		SU 25.3	SGD: 38		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of benign and malignant tumors of breast.	Radiodiagnosis	
		SU 25.4	SGD: 39		1
			Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast.		
		SU 25.5	SGD: 40		1
			Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent.		
19.	Cardio-thoracic General Surgery- Chest- Heart and Lungs				
		SU 26.1	SGD: 41		1
			Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases.		
		SU 26.2	SGD: 42		1
			Outline the role of surgery in the management of diseases of Thorax and Diaphragm		
		SU 26.3	SGD: 43		1

			Describe the clinical features of mediasitnal diseases and the principles of management.		
		SU 26.4	SGD: 44		1
			Describe the etiology, pathogenesis, clinical features of tumors of the lung and the principles of management.		
20.	Vascular Diseases				
		SU 27.1	SGD: 45		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.		
		SU 27.2	SGD: 46		1
			Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease.		
		SU 27.3	SGD: 47		1
			Describe clinical features, investigations and principles of management of vasospastic disorders.		
		SU 27.4	SGD: 48		1
			Describe the types of gangrene and principles of amputation.		
		SU 27.5	SGD: 49		1
			Describe the applied anatomy of the venous system of lower limb.		
		SU 27.6	SGD: 50		1
			Describe pathophysiology , clinical features, investigations and principles of management of DVT and varicose veins.		
		SU 27.7	SGD: 51		1

			Describe pathophysiology, clinical features, Investigations and principles of management of lymph edema, lymphangitis and lymphomas.		
		SU 27.8	SGD: 52		1
			Demonstrate the correct examination of the lymphatic system.		
21.	Abdomen				
		SU 28.1 .	SGD: 53 .		1
		AN44.1.	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias . Describe & demonstrate the Planes (transpyloric, transtuberular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen .	Human Anatomy	
		SU 28.1 .	SGD: 54		1
		AN44.4 . AN44.5	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias . Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	Human Anatomy	
		SU 28.1	SGD: 55		1
			Describe pathophysiology, clinical features, Investigations and principles of management of Hernias		
		SU 28.1	SGD: 56		1
		AN44.4 . AN44.5	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias .	Human Anatomy	

			Explain the anatomical basis of inguinal hernia.		
		SU 28.1	SGD: 57		1
		AN15.3	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias . Describe and demonstrate boundaries, floor, roof and contents of femoral triangle	Human Anatomy	
		SU 28.1,AN44.6,	SGD: 58		1
			Describe pathophysiology, clinical features, Investigations and principles of management of Hernias. Describe & demonstrate attachments of muscles of anterior abdominal wall	Human Anatomy	
		SU 28.3	SGD: 59		1
			Describe causes, clinical features, complications and principles of mangament of peritonitis		
		SU 28.3	SGD: 60		1
			Describe causes, clinical features, complications and principles of mangament of peritonitis		
		SU 28.3	SGD: 61		1
		AN47.5	Describe causes, clinical features, complications and principles of mangament of omental pathologies. 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)	Human Anatomy	

		SU 28.4	SGD: 62		1
			Describe pathophysiology, clinical features, investigations and K principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors		
		SU 28.5	SGD: 63		1
		IM19.9	Describe the applied Anatomy and physiology of esophagus. Enumerate the indications for use of Surgery and botulinum toxin in the treatment of movement disorders	Human Anatomy, Physiology	
		SU 28.5,	SGD: 64		1
		IM15.4, IM15.6	Describe the applied Anatomy and physiology of esophagus. Elicit document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors. Distinguish between upper and lower gastrointestinal bleeding based on the clinical features	Human Anatomy, Physiology	
		SU 28.6,	SGD: 65		1
			Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus.		
		SU 28.6	SGD: 66		1
			Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus		
		SU 28.7	SGD: 67		1

			Describe the applied anatomy and physiology of stomach	Human Anatomy	
		SU 28.8,	SGD: 68		1
		IM15.15	Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach. Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including <i>Helicobacter pylori</i>		
		SU 28.9	SGD: 69		1
		IM15.2	Demonstrate the correct technique of examination of a patient with disorders of the stomach. Enumerate describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed		
		SU 28.10	SGD: 70		1
		IM5.16	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. Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites, spontaneous, bacterial peritonitis and hepatic encephalopathy	Human Anatomy	
		SU 28.10	SGD: 71		1

			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	Human Anatomy	
		SU 28.10	SGD: 72		1
			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	Human Anatomy	
		SU 28.11	SGD: 73		1
			Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis - prophylaxis	Human Anatomy	
		SU 28.11	SGD: 74		1
		PA24.5	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis – prophylaxis Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine		
		SU 28.12	SGD: 75		1
			Describe the applied anatomy of biliary system. Describe the clinical features,		

			investigations and principles of management of diseases of biliary system		
		SU 28.12	SGD: 76		1
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system		
		SU 28.12	SGD: 77		1
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system		
		SU 28.12	SGD: 78		1
		AN47.2,PA24.6	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system. Discuss Paediatric surgery biliary disorders. Name & identify various peritoneal folds & pouches with its explanation. Describe and etiology and pathogenesis and pathologic and distinguishing features of inflammatory bowel disease	Human Anatomy	
		SU 28.12	SGD: 79		1
		AN47.1	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system. Discuss Choledochal cyst. Describe & identify boundaries and recesses of Lesser & Greater sac	Human Anatomy	

		SU 28.13, 28.14	SGD: 80		1
		PA24.7	Describe the applied anatomy of small and large intestine Describe the etiology and pathogenesis and pathologic and distinguishing features of carcinoma of the colon	Human Anatomy, Physiology	
		SU 28.13, 28.14	SGD: 81		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 82		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 83		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 84		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 85		1

			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 86		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 87		1
		AN55.2	Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome Demonstrate the surface projections of: stomach, liver, fundus of gall bladder, spleen, duodenum, pancreas, ileocaecal junction, kidneys & root of mesentery	Human Anatomy	
		SU 28.13, 28.14	SGD: 88		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 89		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including		

			neonatal obstruction and Short gut syndrome		
		SU 28.15	SGD: 90		1
			Describe the clinical features, investigations of diseases of Appendix including appendicitis and its complications.		
		SU 28.15	SGD: 91		1
		AN55.1	Describe the principles of management diseases of Appendix including appendicitis and its complications. Demonstrate the surface marking of regions and planes of abdomen, superficial inguinal ring, deep inguinal ring, McBurney's point, Renal Angle & Murphy's point	Human Anatomy	
		SU 28.16	SGD: 92		1
			Describe applied anatomy including congenital anomalies of the rectum and anal canal	Human Anatomy	
		SU 28.16	SGD: 93		1
			Describe applied anatomy including congenital anomalies of the rectum and anal canal	Human Anatomy	
		SU 28.16	SGD: 94		1
			Describe applied anatomy including congenital anomalies of the rectum and anal canal		
		SU 28.17	SGD: 95		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
		SU 28.17	SGD: 96		1

			Describe the clinical features, investigations and principles of management of common anorectal diseases		
		SU 28.17	SGD: 97		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
22.	Urinary System				
		SU 29.1	SGD: 98		1
			Describe the causes, investigations and principles of management of Hematuria		
		SU 29.2	SGD: 99		1
			Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system	Human Anatomy	
		SU 29.2	SGD: 100		1
			Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system	Human Anatomy	
		SU 29.3	SGD: 101		1
			Describe the Clinical features, Investigations and principles of management of urinary tract infections	Microbiology	
		SU 29.3	SGD: 102		1
		PA28.10	Describe the Clinical features, Investigations and principles of management of urinary tract infections including renal TB and abscess. Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	Microbiology, Pathology	

		SU 29.4	SGD: 103		1
			Describe the clinical features, investigations and principles of management of hydronephrosis		
		SU 29.4	SGD: 104		1
			Describe the clinical features, investigations and principles of management of hydronephrosis		
		SU 29.5	SGD: 105		1
			Describe the clinical features, investigations and principles of management of renal calculi. Define, classify and describe the etiology, pathogenesis, pathology, laboratory urinary findings, distinguishing features, progression and complications of renal stone disease and obstructive uropathy	Pathology	
		PA28.13			
		SU 29.5	SGD: 106		1
			Describe the clinical features, investigations and principles of management of renal calculi		
		SU 29.6	SGD: 107		1
			Describe the clinical features, investigations and principles of management of renal tumours		
		SU 29.7	SGD: 108		1
			Describe the principles of management of acute and chronic retention of urine		
		SU 29.7	SGD: 109		1
		PA28.16	Describe the principles of management of acute and chronic retention of urine.	Pathology	

			Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors		
		SU 29.8	SGD: 110		1
			Describe the clinical features, investigations and principles of management of bladder cancer		
		SU 29.8	SGD: 111		1
			Describe the clinical features, investigations and principles of management of bladder cancer		
		SU 29.9	SGD: 112		1
			Describe the clinical features, investigations and principles of management of disorders of prostate		
		SU 29.9	SGD: 113		1
			Describe the clinical features, investigations and principles of management of disorders of prostate		
		SU 29.10	SGD: 114		1
			Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent		
		SU 29.10	SGD: 115		1
			Describe clinical features, investigations and management of urethral strictures		
		SU 29.10	SGD: 116		1
		OG26.2	Describe clinical features, investigations and management of urethral strictures and urethral injuries.	Obstetrics and gynaecology	

			Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae		
23.	Penis, Testis and scrotum				
		SU 30.1	SGD: 117		1
		AN46.1	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	Human Anatomy	
		SU 30.1	SGD: 118		1
		PA29.1 PE21.14	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors. 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	Pathology	
		SU 30.1,	SGD: 119		1

		PA29.2	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	Pathology	
		SU 30.1	SGD: 120		1
		PA29.4	Describe the clinical features, investigations and principles of management of carcinoma penis. Describe the pathogenesis, pathology, hormonal dependency, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	Pathology	
		SU 30.2	SGD: 121		1
			Describe the applied anatomy clinical features, investigations and principles of management of undescended testis.	Human Anatomy	
		SU 30.3	SGD: 122		1
			Describe the applied anatomy clinical features, investigations and principles of management of epididymo-orchitis	Human Anatomy	
		SU 30.4	SGD: 123		1
			Describe the applied anatomy clinical features, investigations and principles of management of varicocele	Human Anatomy	
		SU 30.5	SGD: 124		1
			Describe the applied anatomy clinical features, investigations and principles of management of hydrocoele	Human Anatomy	

		SU 30.4	SGD: 125		1
			Describe classification, clinical features, investigations and principles of management of tumours of testis		

Internal Assessment

Subject: General surgery and allied including Orthopedics

Applicable for batches admitted from 2019 and onwards

Phase	IA – 1 -Exam			IA – 2 -Exam		
	Theory General Surgery Only (January)	Practical EOP	Total Marks	Theory General Surgery Only (May)	Practical of Allied EOP	Total Marks
Second MBBS	50	50	100	50	Orthopedics = 25	100
					Radiodiagnosis = 25	

Phase	IA – 3 -Exam			IA – 4 -Exam		
	Theory General Surgery + allied (January)	Practical EOP	Total Marks	Theory General Surgery + allied (April)	Practical of Allied EOP	Total Marks
III MBBS Part I	50	50	100	50	Orthopaedics =25	100
					Anaesthesia =25	

Phase	IA – 5 - Exam			Prelim Exam (As per university pattern)		
	Theory Gen Surgery + Allied (May)	Practical End of 8 Weeks posting	Total Marks	Theory (November)	Practical (November)	Total Marks
III MBBS Part II	100	100	200	100 x 2 papers = 200	200	400

(There will be FORMATIVE ASSESSMENT at the End of four weeks Clinical Posting of General Surgery NOT to be added to INTERNAL ASSESSMENT).

Assessment in CBME is **ONGOING PRCESS**,

No Preparatory leave is permitted.

1. There shall be 6 internal assessment examinations in General Surgery including allied.
2. The suggested pattern of question paper for internal assessment internal examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 50 (theory) +50 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University.
4. **Conversion Formula for calculation of marks in internal assessment examinations**

	Theory	Practical
Phase II	100	100
Phase III/I	100	100
Phase III/II	300	300
Total	500	500
Conversion out of	50	50
Conversion formula	Total marks in 6 IA theory examinations /10	Total marks in 6 IA Practical examinations /10
Eligibility criteria after conversion	20	20
	Combined theory + Practical = 50	

5. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

6. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
7. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

8. Remedial measures

A. Remedial measures for non-eligible students

- i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be conducted, if needed.
- ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students.
- iii) Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
- iv) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. Extra classes for such students may be conducted for such students. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination (as per final examination)	200	200
Conversion out of	50	50
Conversion formula	Marks in remedial theory examinations /4	Marks in remedial Practical examinations /4
Eligibility criteria after conversion	20	20
	Combined theory + Practical = 50	

B. Remedial measures for absent students:

- i. If any of the students is absent for any of the 6 IA examinations due to any reasons, following measures shall be taken.
- ii. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
- iii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
- iv. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator of 500.

Internal Assessment Practical Examinations
II MBBS
Internal Assessment - 1
General Surgery

Clinical A (30)			OSCE & Viva B (20)		Grand Total A +B= 50
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva (20)		
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
20	5	5	10	10	50

Internal Assessment - 2
Orthopaedics and Radiodiagnosis (to be conducted at the end of respective clinical postings)

Subject: General Surgery Allied Practical (IA – 2)			
Examination in Orthopaedics			
Case	OSCE 1	Viva (Surgical Pathology, Radiology, Instruments and Surgical Procedure, Journal / log book)	Practical Total
10	5	10	25
Subject: General Surgery Allied Practical (IA – 2)			
Examination in Radiodiagnosis			
X-Ray and other diagnostic modalities - Basics	Viva (Knowledge of legal aspects, radiation protection etc)	Journal / log book	Practical Total
15	5	5	25

* The marks for internal assessment – 2 shall be communicated by orthopedics / Radiology department to General Surgery department immediately after completion of examination and assessment.

III MBBS Part I

Internal Assessment - 3

General Surgery

Clinical A (30)			OSCE & Viva B (20)		Grand Total A +B= 50
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva		
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
20	5	5	10	10	50

Internal Assessment - 4

Orthopaedics and Anaesthesia

Subject: General Surgery Allied Practical (IA – 2) Examination in Orthopaedics			
Case	OSCE 1	Viva (Surgical Pathology, Radiology, Instruments and Surgical Procedure, Journal / log book)	Practical Total
10	5	10	25
Subject: General Surgery Allied Practical (IA – 2) Examination in Anesthesia			
OSCE	Drugs, Instruments	Viva	Practical Total
10	8	7	25

* The marks for internal assessment – 4 shall be communicated by orthopedics / Anaesthesia department to General Surgery department immediately after completion of examination and assessment.

III MBBS Part II

Internal Assessment - 5

General Surgery

Clinical A (60)			OSCE & Viva B (40)		Grand Total A +B= 100
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva (40)		
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
40	10	10	20	20	100

MUHS final practical examination

General Surgery

Seat No.	Long Case General Surgery including communication skill (60)		Short Case 1 General Surgery (30)		Short Case 2 Ortho (30)		General Surgery (60) OSCE # & Table viva			Ortho (20)	Grand Total
	Long case	Communication skills *	Short case	Clinical signs demo	Short case	Clinical signs demo	Instruments +Procedure+ Log book	X rays + Surgical Pathology +Journal	OSCE	OSCE (10) + Table (10)	
	50	10	20	10	20	10	20	20	20	20	200

OSCE Stations may include General examinations, Local examinations, psychomotor skills, Communication skills, AETCOM etc.

*Communication skills to be assessed by Kalamazoo Consensus, clinical signs to be assessed by either GLOBAL Rating Scale or OSCE, Psychomotor Skills to be assessed by OSCE with checklist. If the skills are small, 2 or 3 skills may be combined.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
Format / Skeleton of question paper for 1st & 2nd internal

Assessment Theory Examinations.

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **one mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General surgery) (1x10=10)
a) b) c) d) e) f) g) h) i) j)

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.

2. Long Answer Question (Any 2 out of 3) (General surgery) (2 x 10 = 20)
a) b) c)
3. Short answer questions (Any 4 out of 5) (At least 2 Clinical reasoning question) (General surgery) (4 x 5 = 20)
a) b) c) d) e)

**Format / Skeleton of question paper for 3rd and 4th internal
Assessment Theory Examinations (III MBBS Part I)**

Instructions:

SECTION "A" MCQ

- 5) Put in the appropriate box below the question number once only.
- 6) Use blue ball point pen only.
- 7) Each question carries **One mark**.
- 8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General surgery) (1x10=10)
- a) b) c) d) e) f) g) h) i) j)

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All** questions are **compulsory**.
- 4) The number to the **right** indicates **full** marks.
- 5) Draw diagrams **wherever** necessary.

2. Long Answer Question (Any 2 out of 3) (General surgery) (2 x 10 = 20)
- b) b) c)
3. Short answer questions (1 from AETCOM) (General surgery) (2 x 5 = 10)
- a) b)
4. Short answer questions (Any 2 out of 3) (At least 2 Clinical reasoning question) (Orthopaedics) (2 x 5 = 10)
- a) b) c)

Separate answer sheet for question 4 (SAQ from orthopaedics) may be used for the ease of evaluation.

Format / Skeleton of question paper 5th internal assessment

Theory Examinations (III MBBS Part II)

Instructions:

SECTION "A" MCQ

- 9) Put in the appropriate box below the question number once only.
- 10) Use blue ball point pen only.
- 11) Each question carries **One mark**.
- 12) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General surgery , 2 orthopaedics, 1 anesthesia, 1 dentistry and 1 radiology) (1 x20=20)
a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.

SECTION "B"

- 2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)
a) b)
- 3.Short Answer Questions (Any 3 out of 4) (Any one should be Clinical reasoning), 1 from AETCOM (General Surgery) (3x5=15)
a) b) c) d)

SECTION "C"

4. Short Answer Questions (1 Orthopedics, 1 Anesthesia, 1 Dentistry or Radiodiagnosis) (4 x5=20)
a) b) c) d)
5. Long Answer Question (Structured Case Based) (Orthopedics) (1 x15=15)
a)

Separate answer sheet for question 5 (LAQ from orthopaedics) may be used for the ease of evaluation.

**Format / Skeleton of question paper for University
Theory Examinations (III MBBS Part II) Paper – I
(Subject names to be removed)**

Instructions:

SECTION "A" MCQ

- 13) Put in the appropriate box below the question number once only.
- 14) Use blue ball point pen only.
- 15) Each question carries **One mark**.
- 16) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each) – (General surgery) (1 x20=20)
- a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.

SECTION "B"

- 2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)
- a) b)
- 3.Short Answer Questions (Any one should be Clinical reasoning, 1 from AETCOM) (General Surgery) (3x5=15)
- a) b) c)

SECTION "C"

4. Long Answer Question (Structured Case Based) (General Surgery) (1 x15=15)
- a)
- 3.Short Answer Questions (General Surgery) (Any 4 out of 5) (4 x5=20)
- a) b) c) d) e)

**Format / Skeleton of question paper for University
Theory Examinations (III MBBS Part II) Paper II
(Subject names to be removed)**

Instructions:

SECTION "A" MCQ

- 17) Put in the appropriate box below the question number once only.
- 18) Use blue ball point pen only.
- 19) Each question carries **One mark**.
- 20) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General surgery , 2 orthopedics, 1 anesthesia, 1 dentistry and 1 radiology) (1 x20=20)
a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.

SECTION "B"

- 2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)
a) b)
- 3.Short Answer Questions (any 5 out of 6) (1 Gen. Surgery, 2 Radiodiagnosis, 2 Anesthesia, 1 Dentistry) (5x5=25)
a) b) c) d) e) f)

SECTION "C"

4. Long Answer Question (Structured Case Based) (Orthopedics) (1 x15=15)
a)
- 3.Short Answer Questions (Any 2 out of 3) (Orthopedics) (2 x5=10)
a) b) c)

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: III-II MBBS Subject: General Surgery and allied

Paper	Section	Topics
I	A	MCQs on all topics of paper I of Surgery
	B	Metabolic response to injury, Shock, Blood and blood components, Burns, Wound healing and wound care, Surgical infections, Surgical Audit and Research, Nutrition and fluid therapy, Transplantation, Biohazard disposal, Trauma, Skin and subcutaneous tissue, Developmental anomalies of face, mouth and jaws, Oropharyngeal cancer, Disorders of salivary glands, Endocrine General Surgery: Thyroid and parathyroid, Adrenal glands, Breast, Vascular diseases, Ethics & AETCOM (module 4.3,4.5,4.6)
	C	Abdomen- including Hernia, Peritoneum, GIT tract including esophagus, stomach, small intestine, colon rectum and anal canal, Liver , Spleen, Pancreas, Biliary tract , Minimally invasive Surgery, Pediatric surgery
II	A	MCQs on all topics of the paper II including orthopaedics, anaesthesia, radiology , radiotherapy and dentistry .
	B	Cardio-thoracic - Chest - Heart and Lungs ,Urinary System- Kidney ureter and urinary bladder , Penis, Testis and scrotum, Plastic surgery, Oncology, Investigation of surgical patient, Pre, intra and post- operative management Radiology, Radiotherapy, Anesthesia and pain management , Dentistry
	C	Orthopedics ,



Name of the Institute



Department of General Surgery

Journal

Name of the Student: _____

Roll Number: _____

Batch: _____

Address: _____

Mobile number: _____

Email id: _____

YOUR OPPORTUNITY

Here, for instance is a poor fellow who has just been through to the hospital, in an ambulance. A string of questions about himself and his family has been fired at him, his valuables and even his clothes, have been taken away from him and he is wheeled into the ward on stretcher miserable, scared, defenseless and in his nakedness, unable to run away. He is lifted into a bed, because conscious of the fact, that he is the center of interest in the ward, wishes that he had stayed at home among friends, and just as he is beginning to take stock, he finds a thermometer being stuck under his tongue. It is all strange and new and he wonders what is going to happen next. This thing that does happen is that a man in a long white coat sits down by his bedside and start to examine him. Do you see what an opportunity you have? This foundation of your whole relation with that patient is laid in those first few minutes of contact just as it happens in private practice. Here is a worried lonely, suffering man and if you begin by approaching him with sympathy, tact, and consideration, you get his confidence and he becomes your patient intimate and visiting physicians may come and go and the hierarchy gives them a precedence; but if you make the most of your opportunities, he will regard you as his personal physician and all there's this more consultants.

Sayings of the great:

To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.

-Sir William Osler

The good physician treats the disease, the great physician treats the patient who has the disease.

-Sir William Osler

Observe, record, tabulate, communicate. Use your five senses. Learn to see, learn to hear, learn to feel, learn to smell and know that by practice alone you can become expert.

-Sir William Osler

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Clinical Posting Completion Certificate

This is to certify that the candidate Mr./Ms. _____
Registration no. _____ admitted in the year _____ in the _____
_____ Medical College has satisfactorily completed / has not completed all
assignments / requirements / posting mentioned in
this journal and journal for final MBBS (II/III-I/III-II) in General Surgery during the period
fromto..... She / He is / is not eligible to appear for
the summative (University) assessment as on the date given below.

Signature of Head of Department

Date

GENERAL INSTRUCTIONS

- 1) The journal is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her journal.
- 2) The student is responsible for getting the entries in the journal verified by the Faculty in charge regularly.
- 3) Entries in the journal will reflect the activities undertaken in the department & have to be scrutinized by the Head of the concerned department.
- 4) The journal is a record of various activities by the student like:
 - Overall participation & performance
 - Attendance
 - Participation in sessions
 - Record of completion of pre-determined activities.
 - Acquisition of selected competencies
- 5) The journal is the record of work done by the candidate in that department / specialty and should be verified by the college before submitting the application of the students for the University examination.
- 6) *Proposed number of case records should be mentioned in the journal:-

Phase 2- 1st clinical posting (4 weeks) = 4 General surgery cases + 2 Follow-up cases + OT record sheet minimum 6 cases (2 major and 4 minor) + Asepsis, Basic bandaging skill performed independently and to get it certified

Phase 3- 2nd clinical posting (4 weeks) = 4 General surgery cases + 2 follow-up cases + OT record sheet minimum 6 cases (2 major and 4 minor) + Basic wound care skill performed independently and to get it certified

Casualty posting- To write reflection on 2 cases seen in casualty.

Phase 4- 3rd Clinical Posting (8 weeks) = 10 General Surgery cases + 4 follow-up cases + OT record sheet minimum 8 cases (4 major and 4 minor) + Basic suturing, Incision & drainage of superficial abscess skill to be performed independently and to get it certified.

4th Clinical Posting (4 weeks) = 4 General Surgery cases + 2 follow-up cases + OT record sheet minimum 6 cases (2 major and 4 minor) + Early management of trauma skill to be performed independently and to get it certified + Demonstrates trauma life support

POSTING CERTIFICATE

Name: - Year of Admission: -

Year of appearing for Final M.B.B.S _____

TERM	From	To	Absent days	Case Histories Written	Remark	Signature of Unit Head
Gen Surgery I (4 weeks)						
Gen Surgery II (4 weeks)						
Gen Surgery III (8 weeks)						
Gen Surgery IV (4 weeks)						
Casualty (1week)						

- N.B: -
1. Students must get the signature of the Unit In charge when posting is completed.
 2. This certificate must be submitted before every Internal assessment & Preliminary examination.
 3. Completed record is mandatory for appearing for the Final Examination.

Template for Clinical Cases and Operative Notes

Name of Patient

Age/Sex

Ward no.

MRD No

Head of the Unit

Occupation

Religion

Address

Date of admission

Date of Discharge

Chief complaints

HOP/ODP

Past H/O

Personal H/O

Family H/O

Menstrual History in females

Obstetrical History in

females **General examination**

Built & Nourishment

Level of consciousness

Temperature.

Pulse rate

Respiratory rate

Blood Pressure

Pallor/ cyanosis/clubbing/oedema/Lymphadenopathy/ Icterus

Local examination:

Inspection

Palpation

Percussion

Auscultation

Systemic Examination:

CVS

RS

CNS

PA

Provisional Diagnosis**Differential Diagnosis****Investigations**

Hematological

Biochemical

Radiological

Xray -

USG -

CT -

MRI -

Final Diagnosis**Treatment-****Plan****Pre-operative Workup**

Template for Operative Notes

Date: - Time: -

Surgeon: -

Indication And operation: The working Diagnosis on which the procedure was based and the name of the operation.

Type of Anesthesia: -

Position of patient: - Describe the position and precautions taken to avoid complications.

Incision: - Name the incision, shape and length including any extensile exposure. A drawing may be useful.

Findings: Describe what was found. List structures identified and protected.

Procedure: Report what was exactly done. Describe prosthetics or special instruments used.

Closure: Washout, Hemostasis and drains, Method used for closure and Dressing

Post-operative care: Clear instructions with frequency on (a) general observations, (b) Checks on function, (c) Wound care, (d) removal of drains, (e) Start of mobilization, (f) removal of stitches, (g) discharge, (h) follow up.

Complications: List of potential complications and actions to be taken under a 'What If' list

Specimen sent for Histopathology Examination: Yes/No

Histopathology report:

Daily progress note:

Post-Op Progress Report -

(To be filled everyday in serious cases and every third day in other. Mention observations pertaining to a case, any special investigations done and daily treatment administered)

Day (Post-op)	Gen. condition (Appearance, Pulse, BP, Temp Chest)	Fluid intake	Fluid Output			Complications- If any and their treatment and investigation
			Urine	Suction	Others	

Condition of Patient on discharge: -

Advices on discharge: -

Reflection by students in max. 200 words: -
(Write your overall impression of case at the time of discharge or when you leave the case)

Feedback by Faculty –

Signature by Student and Faculty: -

Operative Notes

Date: -

Time: -

Surgeon: -

Indication And operation:

Type of Anesthesia: -

Position of patient: -

Incision: -

Findings:

Procedure:

Closure:

Post-operative care

Complications:

Specimen sent for Histopathology Examination: Yes/No

Histopathology report:

Progress Report -

(To be filled everyday in serious cases and every third day in other. Mention observations pertaining to a case, any special investigations done and daily treatment administered)

Day (Post-op)	Gen. condition (Appearance, Pulse, BP, Temp Chest)	Fluid intake	Fluid Output			Complications- If any and their treatment and investigation
			Urine	Suction	Others	

Condition of Patient on discharge: -

Advices on discharge: -

**PHASE-II INDEX OF THE CASE
HISTORIES OF GENERAL SURGERY
CASES AND FOLLOW UP CASES**
*(minimum 4 General surgery cases + 2
Follow-up cases)*

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

**INDEX OF THE OPERATIVE
PROCEDURES PHASE II**

*[OT record sheet minimum 6
cases (2 major and 4 minor)
+Asepsis, Basic bandaging skill
performed independently.]*

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

**PHASE-III/I INDEX OF THE CASE
HISTORIES OF GENERAL SURGERY
CASES AND FOLLOW UP CASES**
*(minimum 4Generalsurgerycases+
2follow-up cases)*

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

**INDEX OF THE OPERATIVE
PROCEDURES PHASE III/I**

*[OT record sheet minimum 6
cases (2 major and 4 minor) +
Basic wound care skill
performed independently]*

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

**PHASE-III/II INDEX OF THE CASE
HISTORIES OF GENERAL SURGERY
CASES AND FOLLOW UP CASES**

*[3rd Clinical Posting minimum 10 General Surgery cases + 4 follow-up cases &
4th Clinical Posting minimum 4 General Surgery cases + 2 follow-up cases]*

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
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24.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

Case 9:

Case 10:

Case 11:

Case 12:

Case 13:

Case 14:

Case 15:

Case 16:

Case 17:

Case 18:

Case 19:

Case 20:

Case 21:

Case 22:

Case 23:

Case 24:

**INDEX OF THE OPERATIVE
PROCEDURES PHASE III/II**

[OT record sheet minimum 14 cases (6 major and 8 minor) + Basic suturing, Incision & drainage of superficial abscess, early management of trauma skills & demonstrates trauma life support]

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
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8.						
9.						
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11.						
12.						

13.						
14.						
15.						
16.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

Case 9:

Case 10:

Case 11:

Case 12:

Case 13:

Case 14:

Case 15:

Case 16:

ANNEXURE 1

Paper wise distribution of topics for Prelim & MUHS Annual Examination
 Year: III-II MBBS Subject: _General Surgery and allied

Paper	Section	Topics
I	A	MCQs on all topics of paper I of Surgery
	B	Metabolic response to injury, Shock, Blood and blood components, Burns, Wound healing and wound care, Surgical infections, Surgical Audit and Research, Nutrition and fluid therapy, Transplantation, Biohazard disposal, Trauma, Skin and subcutaneous tissue, Developmental anomalies of face, mouth and jaws, Oropharyngeal cancer, Disorders of salivary glands, Endocrine General Surgery: Thyroid and parathyroid, Adrenal glands, Breast, Vascular diseases, Ethics & AETCOM(module 4.3,4.5,4.6)
	C	Abdomen- including Hernia, Peritoneum, GIT tract including esophagus, stomach, small intestine, colon rectum and anal canal, Liver , Spleen, Pancreas, Biliary tract , Minimally invasive Surgery, Pediatric surgery
II	A	MCQs on all topics of the paper II including orthopaedics, anaesthesia, radiology and dentistry .
	B	Cardio-thoracic - Chest - Heart and Lungs, Urinary System- Kidney ureter and urinary bladder , Penis, Testis and scrotum, Plastic surgery, Oncology, Investigation of surgical patient, Pre, intra and post- operative pain management management and Anesthesia, Radiology,
	C	Orthopedics ,

Annexure 2

Recommended books

Year: II/ III-I/ III-II MBBS
Subject: General Surgery

Sr.no.	Author	Title of book/ Material	Publisher
		<u>TEXTBOOK</u>	
1.	Norman S Williams P. Ronan O'Connell Andrew McCaskie	Bailey & Love's Short practice of Surgery 27 th Edition 2018	CRC Press
2	Sriram Bhat	SRB's Manual of Surgery 6 th Edition 2017	Jaypee Publishers
3	K Rajgopal Shenoy Anitha Shenoy	Manipal Manual of Surgery 5 th Edition 2020	CBS Publishers
4	S Das	A Concise Textbook of Surgery 6 th Edition 2018	DAS Publications
		<u>CLINICAL SURGERY</u>	
1.	S Das	A Manual on Clinical Surgery 9 th Edition 2019	DAS Publications
2.	Sriram Bhat	SRB's Bedside Clinics in Surgery 1 st Edition 2009	Jaypee Publishers
3.	Makhan Lal Saha	Bedside Clinics in Surgery 2 nd Edition 2013	Jaypee Publishers
4.	J Kyle, JAK Smith, D Johnson	Pye's Surgical Handicraft 22 nd Edition 1999	K. M. Vargheese Company (Indian edition)
5.	Margaret Farquharson, James Hollingshead, Brendan Moran	Farquharson's Textbook of Operative General Surgery 10 th Edition 2015	CRC Press
6.	John S P Lumley, Anil K D'Cruz, Carol E Scott-Conner	Hamilton Bailey's Demonstration of Physical signs in Clinical Surgery 19 th Edition 2014	CRC Press

		<u>REFERENCES</u>	
1.	Courteny Townsend, Daniel Beauchamp, B Mark Evers, Kenneth L Mattox	Sabiston Textbook of Surgery 1 st South Asia Edition 2017	Elsevier
2.	F Charles Brunicardi, Mary L Brandt, Dana Anderson, Timothy Billar, David Dunn, John Hunter, Jeffery Matthews, Raphael Polllock	Schwartz's Principles of Surgery 10 th Edition 2019	McGraw Hill
		<u>APPLIED ANATOMY</u>	
1.	Lee McGregor GAG Decker, DJ du Plessis	Lee McGregor's Synopsis of Surgical Anatomy 12 th Edition 2018	K M Varghese Company
2.	John E Skandalkis, Gene Colborn, Thomas Weidman	Skandalkis Surgical Anatomy 2004	Broken hill Publishers
3.	Chummi S. Sinnatamby	Last's Anatomy Regional and Applied 12 th Edition 2011	Churchill Livingstone
		<u>PATHOLOGY</u>	
1.	Kumar, Abbas, Aster	Robbin's Pathologic Basis of Disease 10 th Edition, 2020	Elsiever
2.	Harsh Mohan	Textbook Of Pathology 8 th Edition, 2018	Jaypee Publishers

		<u>PHYSIOLOGY</u>	
1.	Joh E Hall	Guyton and Hall Textbook of Medical Physiology 14 th Edition 2020	Elsevier
2.	Kim E Barrett, Susan M. Barman, Heddwen L. Brooks, Jason Yuan	Ganong's Review of Medical Physiology 24 th Edition 2019	Lange

****For Syllabus refer to MUHS Website**

Course Content

Subject: Obstetrics and Gynecology Lectures

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 3; page nos. 102-129)

Integration: Upto 20% of the topics are to be taken in integration with other subjects as per directives.

Second MBBS phase II (from October 2020)

Total Teaching hours :

A. Lectures: 25 hours

Serial number	Competency Nos.	Integration	Lecture topics & Subtopics	Hours
1.	OG 2.1	AN 48.8, 49.1, 49.2, FM 3.18	Anatomy of the female reproductive tract,	1
2.	OG 3.1.		Physiology of menstruation	1
3.	OG 3.1	AN 77.3,77.4	Physiology of gametogenesis, Ovulation, conception, implantation , & reproductive endocrinology	1
4.	OG 4.1	AN 80.3 80.5, 80.6	Early development of embryo and fetus, development of Placenta, amniotic fluid, cord	1
5.	OG 2.1	AN 52. 8, 79.4	Embryology and developmental defects of female genital tract	1
6.	OG 6.1	FM3.19, PY 9.10	Diagnosis of pregnancy	1
7.	OG 7.1	PY 9.8	Physiological changes in pregnancy	1
8.	OG 1.1, 1,2	CM10.1, 10.2	Maternal and perinatal mortality	1
9.	OG- 5.1, 5.2 An		Preconceptional counseling	1

Serial number	Competency Nos.	Integration	Lecture topics & Subtopics	Hours
	75.5			
10.	OG 8.1, 8.2(K), 8.3(K)		Antenatal Care, birth planning, and Obstetric examination	1
11.	OG 8.4, 16.3	AN 75.5	Antenatal screening, genetic counselling and antenatal monitoring of fetal well being	
12.	OG 8.7		Vaccines and medications in pregnancy, Teratology	1
13.	OG 14.1	AN 53.2, 53.3	Fetal skull, pelvis	1
14.	OG 13.1		Labor physiology	1
15.	OG 13.1		Labor mechanism	1
16.	OG 13.1		Management of labor 1 st stage with, partogram, intrapartum monitoring of fetal well being and labor analgesia	1
17.	OG 13.1		Management of labor 2 nd and third stage	1
18.	OG 19.1		Physiological changes in puerperium, Management of puerperium	1
19.	OG 17.1, 17.2	CM10.3	lactation physiology and management	1
20.	OG 9.5		Hyperemesis , vomiting in pregnancy management	1
21.	1.3, 9.1	AN 78.5	Hemorrhage in early pregnancy (abortions)	1
22.	9.3	AN 78.3	Hemorrhage in early pregnancy (ectopic pregnancy)	1
23.	9.4		Hemorrhage in early pregnancy (Molar pregnancy)	1
24.			Recurrent pregnancy loss	1
25.	11.1	AN 80.4	Multifetal pregnancy	1

Third MBBS phase III

Total Teaching hours :

A. Lectures: **25 hours**

Serial number	Competency Nos.	Integration	Topics & Subtopics	Hours
1.	OG 12.1		Hypertensive disorders in pregnancy	1
2.	OG 12.1		Hypertensive disorders in pregnancy	1
3.	OG 13.2		Preterm and PROM	1
4.	OG 13.2		Prolonged pregnancy	1
5.	OG 16.3		Intrauterine growth restriction	1
6.			Disorders of amniotic fluid	1
7.			Abnormalities of placenta . cord	1
8.			Intrauterine fetal death	1
9.	OG 10.1		Antepartum hemorrhage 1 Placenta previa	1
10.	OG 10.1		Antepartum hemorrhage 2 Abruptio+ vasa previa	1
11.	OG 12.8	PA 22.2	Rh negative pregnancy	1
12.	OG 12.2		Anemia (Iron deficiency + Megaloblastic)	1
13.	OG 12.2		Anemia (Others)	1
14.	OG 12.4		Heart disease in pregnancy	1
15.	OG 12.3		Diabetes in pregnancy	1
16.	OG 12.5		Infections in pregnancy UTI,(Incl Malaria etc)	1
17.	OG 12.6		Hepatic disorders in pregnancy	1
18.			Thyroid disorders in pregnancy	1
19.			Respiratory disorders in pregnancy including TB, COVID, Flu	1
20.			Viral infections in pregnancy (Viral)	1
21.	OG 12.7 ,27.3		HIV in Obstetrics and Gynecology	1
22.			Gynecological disorders in pregnancy	1
23.			Surgical disorders in pregnancy	1

Serial number	Competency Nos.	Integration	Topics & Subtopics	Hours
24.		CM 10.4	National Health programs-I safemotherhood, reproductive and child health	1
25.			National Health programs-II Respectful maternity care, Laqshya guidelines	1

Third MBBS phase IV

Total Teaching hours :

A. Lectures: **70 hours**

Serial number	Competency Nos.	Integration	Topics & Subtopics	Hours
1.	OG 14.4	FM 3.21	Malpositions: Occipito posterior presentation + DTA	1
2.	OG 14.4		Face, Brow Mechanism of labor in each	1
3.	OG 14.4		Malpresentations Breech	1
4.	OG 14.4		Unstable lie (Transverse/ oblique)	1
5.		AN 79.5,	Congenital anomalies of fetus	1
6.			Shoulder dystocia	1
7.	OG 14.4		Abnormal labor,classification, diagnosis and management.	1
8.	OG 14.1		Types of pelvis, Contracted pelvis, cephalopelvic disproportion	1
9.	OG 14.2		Obstructed labor, Rupture uterus causes, diagnosis and management .	1
10.	OG 15.1		Instrumental vaginal deliveries+ Ref to destructive operations	1
11.	OG 15.1		Cesarean section	1
12.			Pregnancy with previous cesarean section .	1
13.	OG 16.1		Third stage complications PPH	1
14.	OG 16,2		Third stage complications- inversion of uterus, Injuries to birth canal	1

15.	OG 19.1,17.3		Disorders of puerperium	1
16.	OG 13.1		Induction of labor,	1
17.	OG 13.1		Obstetric analgesia	1
18.	23.1		Physiology of Puberty and Abnormal puberty	1
19.	23.2, 23.3		Delayed puberty, precocious puberty	1
20.			Disorders of sexual development	1
21.	OG 23.1		Menstruation and common complaints (Dymenorrhea+ PMDD)	1
22.	OG 24.1, PA 30.9	PA 30.9	Abnormal uterine Bleeding Endometrial polyps , hyperplasia	1
23.	25.1		Amenorhea: Primary/ secondary	1
24.	OG 32.1	PY 9.11	Menopause & management , premature ovarian failure	1
25.	OG 22.1, 22.2	PA 30.6	Leucorrhoea , cervical erosion, Cervicitis, vaginitis syndromic management	1
26.	OG 27.1,27.4		PID, Chronic pelvic pain ,	1
27.	27.2		Genital tuberculosis	1
28.	OG 30.1, 30.2		PCOS	1
29.	OG 28.1, 28.2	PY 9.12	Infertility-Cervical & Uterine & Tubal Factors	1
30.	OG 28.3	PH 1.40	Infertility- Ovulation Factors, Endocrine Factors, Galactorrhoea, Hirsutism	1
31.	OG 28.4		ART in infertility	1
32.	OG 28.1		Infertility- Male & Unexplained	1
33.	OG 29.1		Benign tumors: Leiomyoma and polyps	1
34.	Pa 30.7. 30.8, OG 26.1	PA 30.7, 30.8	Endometriosis and adenomyosis	1
35.	OG 31.1		Displacements of uterus	1
36.			Urinary incontinence	1
37.	OG 26.2		Genitourinary fistulae	1

38.	26.2		Old healed perineal tear and rectovaginal fistula	1
39.	OG 33.2		Premalignant lesions of the female genital tract , Cervical intraepithelial neoplasia	1
40.	OG 33.3, 33.4		Screening and early detection of women's cancers including breast cancer	1
41.	OG 33.1	PA 30.1	Invasive cervical cancer	1
42.	OG 32.2		Approach to a patient of Post menopausal bleeding,	1
43.	OG 34.1	PA 30.2, PA 30.3	Uterine cancers	1
44.			Benign and malignant Lesions of vulva and vagina	1
45.	OG 34.3	PA 30.5	Gestational trophoblastic neoplasia	1
46.	OG 34,2		Benign ovarian tumors+ including non neoplastic enlargements of ovary	1
47.	OG 34.2	PA 30.4	Malignant ovarian tumors	1
48.		BI 10.2	Principles of Chemotherapy and Radiotherapy in Gynecology	1
49.	21.1		Contraception: male and female barrier methods	1
50.	21.1	PH 1.39	Hormonal contraception	1
51.	21.2		IUDs, PPIUCD program	1
52.	21.1		Female sterilization, postpartum sterilization	1
53.	21.1		Reversal of sterilization male and female	1
54.	21.1		Contraception in special populations	1
55.	OG 20.1		MTP:Act, first trimester procedures	1
56.	OG 20.2		MTP second trimester procedures	1
57.	18.1, 18.3		Neonatal Asphyxia , , convulsions in the newborn	1
58.			Neonatal resuscitation	1
59.			Neonatal Jaundice + Birth injuries	1
60.	OG 8.8		Imaging in Obstetrics	1
61.			Imaging in gynecology	1
62.		PH 1.41	Pharmacotherapeutics in obstetrics	1
63.			Principles of gyn-surgical care- (pre op)	1

64.			Principles of gyn surgical care-(post op)	1
65.	OG 10.2		Critical care in Obstetrics , appropriate use of blood and blood products, their complication and management	1
66.	20.3	FM 3.13-17	PC PNDT act	1
67.		FM 3.13-17	Examination of the sexual assault survivor	1
68.			Domestic Violence act and role of gynecologist Gender	1
69.			Medicolegal issues related to Obstetrics and gynecology	1
70.			Adoption acts	1

Course Content

Subject: Obstetrics and gynecology Gyn skills

Clinical Postings: phase II 4 weeks – (Mon-Fri)
 phase III-1 4 weeks – (Mon-sat)
 phase III-2 12 weeks – (Mon-sat)

Competency Nos.	skill	topic	Suggested Teaching learning method	Hours	Student should complete this skill by end of mentioned phase
Phase II					
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	History taking in obstetrics	Bed side clinics	15 hours(1 week)	II
OG35.5	Determine gestational age, EDD and obstetric formula K/S SH	Informed consent for examination	Mannequin/demonstration on patient		
OG35.7	Obtain informed consent for any examination / procedure S SH				
OG35.2.	Arrive at a logical provisional diagnosis after examination K/S SH				
OG36.2	Organise antenatal clinics K/S KH	Antenatal clinic, (set up of OPD) Routine antenatal investigations, Antenatal care	OPD tour, Demonstration of the set up and how OPD functioning is carried out	3 hrs	II

OG8.6	Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy K/S SH	Nutritional counselling in pregnancy	Case based learning.	3 hrs	II
OG 35.12	History taking in gynecology, demonstrate P/S, P/V examination		Bed side clinic /OPD demonstration, skill lab for PS PV practice	3 hrs	II
OG8.5	Describe and demonstrate pelvic assessment in a model K/S SH	Maternal pelvis Pelvic assessment Fetal skull	Model,	3 hrs	II
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well-being K/S SH	Antepartum monitoring of fetal well being- screening, USG doppler, NST, BPP,	Demonstration	3 hrs	II
OG13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin	Mechanism of labor Management of Labor stage 1 Intrapartum monitoring of fetal well being- Partogram, CTG	Skill lab Models and mannequins Labor room demonstrations	15 hrs	II
OG35.13	Demonstrate the correct technique to perform artificial rupture of membranes in a simulated / supervised environment S SH	ARM			
OG35.14	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment S SH	Management of labor stage 2- Episiotomy			

OG35.16	Diagnose and provide emergency management postpartum hemorrhage in a simulated / guided environment K/S SH	Management of labor stage 3 Emergency management of PPH oxytocics			
	Conduction of 2 exams and feedback			15 hours	
			Phase 2 clinical posting Total	60 hours(4 weeks mon -fri)	
Phase III-1					
OG37.6	Observe and assist in the performance of outlet forceps application of vacuum and breech delivery K/S/A/C SH	Forceps and vaccum, breech delivery	Mannequins and models skill lab	3 hrs 3 hrs	III-1
OG36.2	Organise postnatal and well-baby clinics K/S KH	Post natal clinic and well baby clinic. PNC case Normal and abnormal Puerperium,	OPD visit Bed side clinics, case based learning	3 hrs 3 hrs 3 hrs	III-1
OG17.2	Counsel in a simulated environment, care of the breast, importance and the technique of breast feeding S/A/C SH	Breast care, technique of breast feeding	Bed side clinic	3 hrs	III-1
OG35.17	Demonstrate the correct technique of urinary catheterisation in a simulated/ supervised environment S SH	Female urinary catheterizaion	Mannequin/ demonstration, Video demonstration	1 hr	III-1
OG37.4	Observe and assist in the performance of Dilatation & Curettage (D&C) K/S/A/C SH	Dialation and curettage	OT procedure, video	2 hrs	III-1

			demonstration		
OG37.5	Observe and assist in the performance of Endometrial aspiration - endocervical curettage (EA-ECC) K/S/A/C SH	Endometrial and endocervical curettage	OT procedure, video demonstration	3 hrs	III-1
OG36.1	Plan and institute a line of treatment, which is need based, cost effective and appropriate for common conditions taking into consideration (a) Patient (b) Disease (c) Socio-economic status (d) Institution/ Governmental guidelines. K/S SH	Cost effective approach	Case based learning	3 hrs	III-1
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	Doctor patient communication	Role play, OPD visit	3 hrs	III-1
OG35.6	Demonstrate ethical behavior in all aspects of medical practice. A/C SH	Ethics in medical practise	Case based learning	3 hrs	III-1
OG35.10	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details. S SH	Referral note	Case based learning	3 hrs	III-1
OG38.4	Assess the need for and issue proper medical certificates to patients for various purposes K/S/A/C KH	Issue Medical certificates	Case based learning	3 hrs	III-1
		Cover 6 cases mentioned in III-2		18 hrs	
	Conduction of 2 exams and feedback			15 hours	
			Phase III-1 clinical posting Total	72 hours(4 weeks -mon - sat)	
Phase III-2					
	Revision of all topics in phase II			45 hrs	

	Revision of topic 14, 15 from phase III-1			15 hrs	
	Obtain history and on basis of examination findings(internal examination excluded) arrive at a logical provisional diagnosis for type of abortion	Abortions	Case based learning	3 hrs	
OG35.8	Write a complete case record with all necessary details S SH	Case record-.....10 cases over 3 phases, anemia. Drugs used in anemia Preeclampsia, Antihypertensives in prgnancy Eclampsia ,anticonvulsants in pregnancy IUGR,fetal well being tests Multifetal gestation, Breech, prev caesarean, preterm, tocolytics Prolonged labor induction of labor and drugs used in induction	Bed side clinics/ case based learning	3 hrs 3 hrs 3 hrs 3 hrs 3 hrs 3 hrs 6 hrs	III-1, III-2
OG35.16	Diagnose and provide emergency management of antepartum in a simulated / guided environment K/S	placenta previa case	Bed side clinics/ case	6 hrs	III-1/2

	SH	abruptio placentae case Emergency management of APH with placenta previa case	based learning		
OG35.11	Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis and counsel patients S SH	HIV in pregnancy Universal precaution, PPTCT, counselling in HIV	Case based learning Demonstration on PPTCT centre visit	3 hrs 3hrs	III-2
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	Identifying a high risk pregnancy	Case based learning	3 hrs	III-2
OG13.5	Observe and assist the conduct of a normal vaginal delivery S P	Normal vaginal delivery-2 cases in log book	Labor room	6 hrs	III-2
OG37.1	Observe and assist in the performance of a Caesarean section K/S/A/C SH	Caesarean section	OT procedure/ video demonstration	3 hrs	III-2
OG35.9	Write a proper discharge summary with all relevant information S SH	Discharge summary..VD, CS, gyne case	Case based learning	3 hrs	III-2
OG35.12	Obtain a PAP smear in a stimulated environment S SH	PAP smear	Cancer detection OPD/ video demonstration	3 hrs	III-2
OG36.3	Demonstrate the correct technique of punch biopsy of uterus in a simulated/ supervised environment S SH	Cervical biopsy			III-2
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment K/S SH	Cervical cancer screening, VIA, VILI, Colposcopy			III-2
OG35.15	Demonstrate the correct technique to insert and remove	Contraception	Mannequin/	6 hrs	III-2

	an IUD in a simulated/ supervised environment S SH	methods, Intrauterine contraceptive device insertion and removal	video demonstration/ demonstration on small group		
OG13.4	counsel on methods of safe abortion.	Counselling for safe abortion		3 hrs	III-2
OG20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy S/A/C SH	Informed consent for MTP, MTP act, forms to be filled	Demonstration	3 hrs	III-2
OG37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion K/S/A/C SH	Suction and evacuation(spontaneous abortion , first trimester MTP)	OT procedure		III-2
OG38.3	Lap sterilization K/S/A/C KH	Lap sterilization- 1 case of sterilization	OT procedure/ video demonstration	3 hrs	III-2
OG19.2	Counsel in a simulated environment, contraception and puerperal sterilisation S/A/C SH	Counselling for contraception sterilization. Puerperal sterilization(case based learning)	Case based learning Family welfare clinic	3 hrs	III-2
OG36.2	Organise family welfare clinics K/S KH	Family welfare clinic			III-2
OG 35.12	History taking in gynecology, Reaching a provisional diagnosis	Gynecology case Vaginitis Fibroid uterus Genital prolapse Infertility	Case based learning	3 hrs 3 hrs 3 hrs 3 hrs	II

		Adenexal mass		3 hrs	
		Abnormal uterine bleeding(O)		3 hrs	
		Post menopausal bleeding		3 hrs	
		Cancer cervix		3 hrs	
OG37.2	Observe and assist in the performance of Laparotomy K/S/A/C SH	Exploratory laparotomy	OT procedure/ video demonstration	3 hrs	III-2
OG37.3	Observe and assist in the performance of Hysterectomy – abdominal/vaginal K/S/A/C SH	Vaginal hysterectomy, abdominal hysterectomy	OT procedure/ video demonstration	6 hrs	III-2
OG38.1	Laparoscopy K/S/A/C KH	laparoscopy	OT procedure/ video demonstration	3 hrs	III-2
OG38.2	Hysteroscopy K/S/A/C KH	hysteroscopy	OT procedure/ video demonstration	3 hrs	III-2
		Revision drugs in obstetrics and gynecology		3 hrs	

		Revision instruments		3 hrs	
		Revision contraception specimen		3 hrs	
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment S SH	Neonatal resuscitation			paeds
		Conduction of exams and feedback And miscellaneous		24 hrs	
		Phase III-2 clinical posting Total		216 hrs(12 weeks mon- sat)	

Course Content

Subject: Obstetrics and Gynecology

(Based on Indian Gazette on CBME and Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 3; page nos. 102-129)

Self directed learning(SDL)

Medical council directs to dedicate 5 hrs in third phase part 1 and 15 hrs in third phase part2 for self directed learning in OBGY.

University leaves it to the discretion of institute to plan the SDL using various methods in which students should be briefed about topic, guided towards learning resources, curiosity, innovation, motivation, competitiveness should be inculcated.

Life long learning capacity should be built.

The record of these SDL sessions should be included in Logbook as reflections of the session

Small group teaching/tutorials

Medical council directs to dedicate 35 hrs in third phase part 1 and 125 hrs in third phase part2 for small group teaching/tutorials/ integrated teaching/ seminars in OBGY.

Suggested topics:

Dummy Pelvis 4
Obst specimens 4
Gynec specimens 4
X-rays & HSG 2
NST/ CTG 2
Obst Instruments 3
Gynec Instruments 4
Forceps 1
Vacuum 1
Partograph 2
NST, CTG 2
Drugs in obstetrics 3
Gynec drug 2
Contraception 4
Sterilization 2
Minor procedures 2

Apart from this SGT, can comprise of MCQ solving, group seminars, poster making, skit making,

Guidelines for Electives:

Medical council directs to dedicate 2 months of elective posting between third phase part 1 and part 2

1. Each college can put up department wise lists of electives depending on facilities and resources available.
2. Electives modules should be designed well in advance with mention on specific learning objectives, daily work record, report and assessment of the same.
3. Allotment of electives will be merit based on combined marks of previous 3 yrs.
4. Medical college can have MOU with other hospitals or centers for elective courses to student.
5. Student can opt for doing elective in any other hospital, city or abroad, provided facility of subject of interest is not available in his/her college, with prior permission of institute.
6. If opting for elective abroad then one month can be contact program and another month will be online program as for one month of elective student is supposed to attend clinical posting also.
7. Only 10% students will be allowed per subject for outside elective.
8. Student will have to apply to centre where he desires to do elective well in advance, application must go through concerned department through institute. The centre where student is doing elective must be government or semi government or teaching institute or center affiliated by university or National association of that subject of country.
9. Responsibility of applying, getting admission, expenses incurred for tuition fees and travel and stay will have to take care of by student.
10. At the end of electives Student should produce certificate of completing elective term from head of the institution or centre.

AETCOM

Medical council directs to dedicate 28 hrs + 16 hrs SDL in third phase part 2 for AETCOM. Out of these each subject gets 7 hours + 4 hrs SDL

As decided by university OBGY department will cover module 4.2 and 4.7 out of 9 modules mentioned in AETCOM booklet for phase III part 2.

Internal Assessment

Obst. & Gynaec.

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

Phase	IA – 1 -Exam			IA – 2 -Exam		
	Theory (January)	Practical EOP	Total Marks	Theory (May)	Practical	Total Marks
Second MBBS	50	50	100	50	50	100

Phase	IA – 3 Exam			IA – 4 - Exam		
	Theory (January)	Practical EOP	Total Marks	Theory (April)	Practical	Total Marks
Third MBBS Part I	50	50	100	50	50	100

Phase	IA – 5 - Exam			Prelim Examination		
	Theory (May)	Practical EOP (after 8 weeks posting)	Total Marks	Theory (November)	Practical	Total Marks
Third MBBS Part I	100	100	200	100 x 2 papers = 200	200	400

**Internal Assessment Practical Examinations
II MBBS**

Internal Assessment - 1

OBGY

Subject: OBGY Practical (IA – 1)					
Spotting	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
10	10	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

Subject: OBGY Practical (IA – 2)					
Long Case					
History	Examination	Investigation	Treatment	AETCOM	Practical Total
10	10	10	10	10	50

Subject: OBGY Practical (IA – 3)					
Spotting	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
10	10	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

Subject: OBGY Practical (IA – 4)					
Long Case					
History	Examination	Investigation	Treatment	AETCOM	Practical Total
10	10	10	10	10	50

Subject: OBGY Practical (IA –5)				
Long Case (Obstetrics)	Gynaecology Case	Family Planning	Journal & log book	Practical Total
50	20	20	10	100

Subject: OBGY Practical (Prelim)								
ANC Case	Gynaecology Case	PNC / Post – Op Case	Family Planning Viva	Obstetrics Table Viva	Gynaec Table Viva	Spotting (2 x 10 spots)	Journal & log book	Practical Total
50	25	20	25	20	20	20	20	200

Subject: OBGY Practical (MUHS Final)							
ANC Case	Gynaecology Case (Diagnosis and discussion)	PNC / Post – Op Case (Diagnosis and discussion)	Family Planning Viva	Obstetrics Table Viva	Gynaec Table Viva	Spotting (4 x 10 spots)	Practical Total
50 *	25	20	25	20	20	40	200

* 10 marks each for history, examination, AETCOM, investigation & treatment.

Assessment in CBME is ONGOING PROCESS,

No Preparatory leave is permitted.

1. There shall be 6 internal assessment examinations in OBGY.
2. The suggested pattern of question paper for internal assessment, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 50 (theory) +50 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	100	100
Phase III/I	100	100
Phase III/II	300	300
Total	500	500
Conversion out of	50	50
Conversion formula	Total marks in 6 IA theory examinations /10	Total marks in 6 IA Practical examinations /10
Eligibility criteria after conversion	20	20
	Combined theory + Practical = 50	

4. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

5. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
6. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

7. Remedial measures

A. Remedial measures for non-eligible students

- i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically.
- ii) Extra classes for such students may be arranged. If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
- iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination (as per final examination pattern)	200	200
Conversion out of	50	50
Conversion formula	Marks in remedial theory examinations /4	Marks in remedial Practical examinations /4
Eligibility criteria after conversion	20	20
	Combined theory + Practical = 50	

B. Remedial measures for absent students:

- i. If any of the students is absent for any of the 6 IA examinations due to any reasons, following measures shall be taken.
- ii. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
- iii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
- iv. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

**Format for Internal Assessment
Theory Examination
IA – 1, IA – 2, IA – 3 & IA - 4**

Question No.	Type of Question	No. of Questions (no. To be solved)	Max. Marks
1.	MCQ	10	10 (1 marks each)
2.	SAQ	6 (Any 5 out of 6)	25 (5 marks for each question x 5 questions)
3.	LAQ	1 (Compulsory)	15
		Total	50

**Format for Internal Assessment
Theory Examination IA - 5**

Question No.	Section	Type of Question	No. of Questions	Max. Marks
1.	A	MCQ	20	20 (1 marks each)
2.	B	LAQ	4 (Any 3 out of 4)	45 (15 marks for each question x 3 LAQ)
3.	C	SAQ	7 (Any 6 out of 7)	30 (5 marks for each question x 6 SAQ)
4.	C	SAQ	1 question from AETCOM	5
			Total	100

Format for MUHS Final Theory Examination Paper I & II

Question No.	Section	Type of Question	No. of Questions	Max. Marks
1.	A	MCQ	20	20 (1 marks each)
2.	B	LAQ	4 (Any 3 out of 4)	45 (15 marks for each question x 3 LAQ)
3.	C	SAQ	7 (Any 6 out of 7)	30 (5 marks for each question x 6 SAQ)
4.	C	SAQ	1 question from AETCOM	5
			Total	100

**Maharashtra University of Health
Sciences, Nashik**

OBSTETRICS AND GYNECOLOGY

Journal

Name of the College

Admission Year : _____

CERTIFICATE

This is to certify that,

Mr/Ms. _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this journal as per the guidelines prescribed by Medical Council of India, for MBBS Competency Based Curriculum in the subject of Obstetrics and Gynaecology.

Date: ___/___/_____

Place: _____

Teacher -in-Charge

Professor and Head

Instructions

The journal is a record of the cases seen by the designated student during her/his clinical postings in OBGY and during the labour room posting.

The student is expected to write down the details of:

1. Two normal low risk pregnant patients.
2. Five patients whose normal vaginal delivery the student has witnessed/assisted/conducted.
3. Two instrumental deliveries.
4. Three caeserean sections.
5. Pregnancies with complications.(12 Cases)
6. Three postnatal cases.
7. Eight gynaecology cases
8. Four family planning cases

Index

S. no	Topic	Page number	
	Normal pregnancy cases		
	Index of Antenatal Cases		
	Antenatal case record		
	Index of Labour cases		
	Labour case record		
	Index of postnatal cases		
	Postnatal case record		
	Index of Gynaecology cases		
	Gynaecology case record		
	Index of Family planning cases		
	Family planning case record		

Record of Attendance

Phase	Duration of posting	Posting from date	Posting to date	Attended days/out of days	Signature of Unit In charge
Phase II	4 weeks				
Phase III part 1	4 weeks				
Phase III part 2	12 weeks				

Teacher -in-Charge

Professor and Head

Department of Obstetrics and Gynaecology

Antenatal Cases
(Seen and recorded)

Serial number	Case	Page number
1.	Anemia in pregnancy	
2.	Preeclampsia	
3.	Eclampsia	
4.	IUGR	
5.	Multifetal gestation	
6.	Breech	
7.	Previous caesarean	
8.	Preterm	
9.	Placenta praevia	
10.	Abruptio placentae	
11.	Heart disease in pregnancy	
12.	Diabetes in pregnancy	

Antenatal case-1(2+12 similar repetitions)

Name: Age:

Address: Occupation:

Socioeconomic status: Religion: Caste:

Education:

Booked/ registered (number of antenatal visits in pregnancy):

H/O Amenorrhoea

Chief complaints:

History of present pregnancy:

Menstrual history:

PMC:

LMP: EDD:

Obstetric history:

Past medical history:

Family history:

Diet history:

Personal history:

General examination:

Built: Height:

Weight: Nourishment:

General condition:

Temperature:

Pulse:

Respiration:

BP:

Pallor:

Icterus, cyanosis, glossitis, angular stomatitis, JVP, Lymphadenopathy, clubbing, goitre

Breasts:

Systemic examination:

CVS

RS

CNS

Obstetric examination:

Inspection:

Palpation: Fundal height.....weeks

Symphysiofundal height:.....cms. Abdominal girth:.....cms

Leopold's 1st manoeuvre

Leopold's 2nd manoeuvre

Leopold's 3rd manoeuvre

Leopold's 4th manoeuvre

Auscultation

Provisional Diagnosis:

Investigations:

Routine: ANC Profile

Blood group, Rh Typing		Hb Platlet	
Blood sugar		HIV	
HBs antigen		VDRL	
Sickling/ Hb electrophoresis		Serum TSH	
Urine albumin Urine sugar		Urine culture sensivity	

USG:

Special investigations:

Final diagnosis:

Management:

Signature of teacher

Date:

Labour Cases
(Attended and recorded)

Serial number	Case	Page numbers
1.	Normal Delivery: 5 cases	
2.	Instrumental delivery; 2 cases	
3.	Caesarean section: 3 cases	

Systemic examination:

CVS

RS

CNS

Obstetric examination:

Inspection:

Palpation:

Fundal height

Symphysio fundal height

Abdominal girth

Leopold's 1st manoeuvre

Leopold's 2nd manoeuvre

Leopold's 3rd manoeuvre

Leopold's 4th manoeuvre

Auscultation

Provisional Diagnosis:

Investigations:

Routine:

Blood group, Rh Typing		Hb Platelets	
PGBS		HIV	
HBs antigen		VDRL	
Sickling/ Hb electrophoresis		Serum TSH	
Urine albumin Urine sugar		Urine culture sensitivity	

USG:

Final diagnosis: Labour :Induced/Spontaneous/Active management

Delivery details: Normal/Low Forceps/Ventouse

Presentation: Vertex/Face/Breech

Episiotomy: Yes/No

AMTSL; Yes/No: Details if yes:

Placental delivery: controlled cord traction/Manual removal of placenta

Delivery/Operations Notes:

Indication for Intervention in case of Instrumental delivery or Caeserean section:

Name of Obstetrician:

Assistant:

Anaesthesia

Anaesthesiologist:

PPH: Yes/No

Placental weight:

Placental abnormality:

Cord length

Baby notes:

Date of birth

Sex of baby :

Birth weight :

Full term/ Preterm/Postterm

Apgar score: 1 min

5 min

Congenital malformation

Postnatal period follow up including breast feeding:

Condition at the time of discharge:

Involution of uterus

Perineum

Lochia:

Treatment received:

Mother

Baby

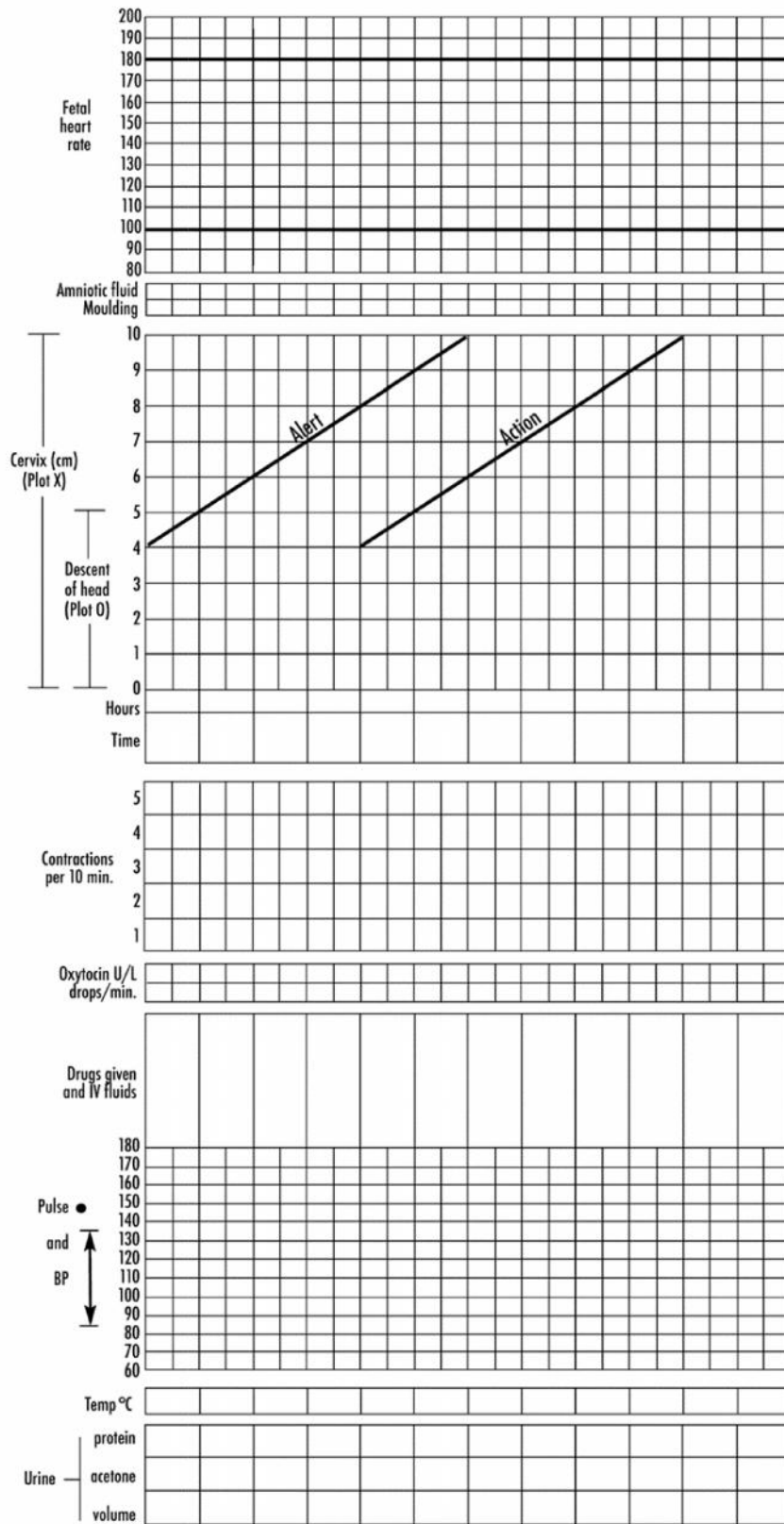
Treatment advised at discharge:

Contraception advised

Signature of teacher:

Date:

Name	Gravida	Para	Hospital number
Date of admission	Time of admission	Ruptured membranes	hours



Postnatal Cases

(Seen and recorded)

Serial number	Case	Page number
1.	Post vaginal delivery 1 case	
2.	Post caesarean section 1 case	
3.	Abnormal puerperium 1 case	

Postnatal case-1(3 similar repetitions)

Name: Age:
Address: Occupation:
Socioeconomic status: Religion: Caste:

Education:

Booked/ registered (number of antenatal visits in pregnancy):

Date and time of delivery:

Gestational age at delivery:

Intranatal history:

Relevant complaints at time of admission:

Examination findings at time of admission:

Duration of labour:

PPH: Yes/No

Any abnormal findings:

Type of delivery:

If caesarean or instrumental delivery: Indication

Condition of baby at birth:

Time of birth, sex of baby, birth weight:

Baby with mother /in NICU:

Postnatal history:

Lochia:

Pain:

Bowel/bladder:

Breast feeding or any problem:

Antenatal history:

Obstetric history :

Past medical history:

Family history:

Diet history:

Personal history:

General examination:

Built:

Height:

Weight:

Nourishment:

General condition:

Temperature:

Pulse:

Respiration:

BP:

Pallor, icterus, cyanosis, glossitis, angular stomatitis, JVP, Lymphadenopathy, clubbing, goitre

Breasts:

Systemic examination:

CVS

RS

CNS

Abdominal examination:

Inspection:

Palpation:

Fundal height:

Involution of uterus:

Bowel sounds in case of caeser:

Abdominal wound/Perineum:

Bleeding PV/Lochia:

Urine Output:

Provisional Diagnosis:

Investigations:

Routine:

Blood group, Rh Typing		Hb	
BS		HIV	
HBs antigen		VDRL	
Sickling/ Hb electrophoresis		Serum TSH	
Urine albumin		Urine culture sensitivity	

Special investigations:

Treatment advised/given to

Mother :

Baby:

Treatment advised at discharge:

Contraception advised:

Signature of teacher:

Date:

Gynaecology Cases
(Seen and recorded)

Serial number	Case	Page number
1.	Vaginitis	
2.	Fibroid uterus	
3.	Genital prolapse	
4.	Infertility	
5.	Adenexal mass/Ovarian mass	
6.	Abnormal uterine bleeding(O)	
7.	Post menopausal bleeding	
8.	Cancer cervix	

Gynaecology case-1(8 similar repetitions)

Name:

Age:

Address:

Occupation:

Socioeconomic status:

Religion:

Caste:

Education:

Chief complaints:

History of present illness:

Menstrual history:

Obstetric history:

Past medical history:

Family history:

Diet history:

Personal history:

General examination:

Built:

Height:

Weight:

Nourishment:

General condition:

Temperature:

Pulse:

Respiration:

BP:

Pallor, icterus, cyanosis, glossitis, angular stomatitis, goitre, JVP, Lymphadenopathy, clubbing

Breasts:

Systemic examination:

CVS

RS

CNS

Per Abdomen examination:

Per Speculum findings:

Per vaginum findings:

Provisional Diagnosis:

Investigations as indicated

Blood group, Rh Typing		CBC Hb TLC DLC Platelet	
BS- F, PP		LFT	
KFT		Serum TSH	
Sickling/ Hb electrophoresis		ECG	
Urine albumin		Urine culture sensitivity	
ECG			
Pap smear			
USG			
Colposcopy			
Cervical biopsy			
Endometrial, endocervical			

biopsy	
CT/MRI	

Any other investigations:

Final diagnosis:

Operation notes:

Treatment received

Postoperative period

Histopathology:

Condition on discharge:

Treatment advised:

Signature of teacher:

Date

Family planning Cases

(Seen and recorded)

Serial number	Case	Page number
1.	Tubectomy-Minilap or laparoscopic	
2.	MTP first trimester (suction and evacuation)	
3.	MTP second trimester	
4.	CuT insertion	

Family planning case-1(4 similar repetitions)

Name:

Age:

Address:

Occupation:

Socioeconomic status:

Religion:

Caste:

Education:

Menstrual history:

Obstetric history :

Previous Contraceptive history:

Past medical history:

Family history:

Personal history:

General examination:

Systemic examination:

Per Abdomen examination:

Per Speculum findings:

Per vaginum findings:

Investigations as indicated

Blood group, Rh Typing		Hb	
BS- F, PP		Urine albumin	
USG			

Any other investigations:

Operation notes:

Treatment received

Postoperative period

Condition on discharge:

Advice on discharge;

Signature of teacher:

Date:

Maharashtra University of Health Sciences Nashik

OBSTETRICS AND GYNECOLOGY LOGBOOK - MBBS AS PER COMPETENCY BASED CURRICULUM

Name of the College

Admission Year : _____

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BIODATA OF THE CANDIDATE

Name of the student:

Name of the course: MBBS

Date of birth:

Father's / Guardian's name:

Mother's name:

Blood group:

Permanent Address:

Temporary Address:

.....

.....

.....

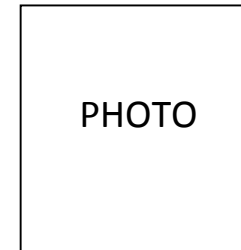
.....

Student's contact no:

Father's/ Guardian's contact no:

Student's Email id:

Father's/ Guardian's Email id:



Candidates Signature:

Date:

LOG BOOK CERTIFICATE

This is to certify that,

Mr/Ms. _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for MBBS Competency Based Curriculum in the subject of Obstetrics and Gynecology.

Date: ___/___/_____

Place: _____

Teacher -in-Charge

Professor and Head

Department of Obstetrics and Gynecology

Instructions

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.

This Logbook gives an opportunity to achieve goals pertaining to skill learning in Obstetrics and Gynecology, so that IMG becomes capable to provide respectful maternity and Gynecology care to the society.

1) Logbook is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her logbook.

2) The student is responsible for getting the entries in the logbook verified by the Faculty in charge regularly. Certifications for competencies to be taken on same day.

3) Refer to university course content for skill to ensure which competencies to be covered in which phase

4) Entries in the logbook will reflect the activities undertaken in the department & have to be scrutinized by the, teacher in charge of session, Head of the concerned unit and department.

5) The logbook is a record of various activities by the student like:

- Overall participation & performance
- Attendance
- Participation in sessions
- Record of completion of pre-determined activities.
- Acquisition of selected competencies

6) The logbook is the record of work done by the candidate in that department / specialty and should be verified by the college before submitting the application of the students for the University examination.

Record of Attendance

Phase	Duration of posting	Posting from date	Posting to date	Attended days/out of days	Signature of Unit In charge
Phase II	4 weeks				
Phase III	4 weeks				
Phase IV	12 weeks				

.....

Signature of Head of the Department

Records of Internal Assessments

-	Exam No.	Date	Theory	Date	Practical including Viva	Signature of teacher
1	Phase II-1 st exam		/50		/50	
2	Phase II-2 nd exam		/50		/50	
3	Phase III-1 st exam		/50		/50	
4	Phase III-2 nd exam		/50		/50	
5	Phase IV-1 st exam		/100		/100	
6	Prelims		/200		/200	
	Remedial if any					
	Total		/500		/500	
	Conversion= Total/5		/100		/100	

.....
Signature of Head of the Department

CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Competency # addressed	Name of Activity
OG5.1	Describe, discuss and identify pre-existing medical disorders and discuss their management; discuss evidence-based intrapartum care
OG5.2	Determine maternal high risk factors and verify immunization status
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.
OG8.2	Elicit, document and present history in a OBGY patient including obstetric and menstrual history, last menstrual period, comorbid conditions and past medical history
OG8.3	Describe, demonstrate, document and perform a general, systemic and abdominal examination including obstetrical examinations and clinical monitoring of maternal and fetal well-being.
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well-being

OG8.5	Describe and demonstrate pelvic assessment in a model
OG35.1	Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (perrectal and per-vaginal)
OG35.2	Arrive at a logical provisional diagnosis after examination.
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.
OG35.5	Determine gestational age, EDD and obstetric formula
OG36.1	Plan and institute a line of treatment, which is need based, cost effective and appropriate for common conditions taking into consideration (a) Patient (b) Disease (c) Socio-economic status (d) Institution/ Governmental guidelines.
OG36.2	Organise antenatal, postnatal, well-baby and family welfare clinics
OG38.4	Assess the need for and issue proper medical certificates to patients for various purposes

PSYCHOMOTOR / PERFORMANCE SKILLS:

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

I – independent certification

D - demonstration

LIST OF COMPETENCIES

Competency # addressed	Name of Activity
OG9.2	Describe the steps and observe/ assist in the performance of an MTP evacuation

OG13.3	Observe/ assist in the performance of an artificial rupture of membranes
OG13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin
OG13.5	Observe and assist the conduct of a normal vaginal delivery
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
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment
OG19.3	Observe/ assist in the performance of tubal ligation
OG19.4	Enumerate the indications for, describe the steps in and insert and remove an intrauterine device in a simulated environment
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment
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
OG35.7	Obtain informed consent for any examination / procedure
OG35.8	Write a complete case record with all necessary details

OG35.9	Write a proper discharge summary with all relevant information
OG35.10.	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details
OG35.11	Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis
OG35.12	Obtain a PAP smear in a stimulated environment
OG35.13	Demonstrate the correct technique to perform artificial rupture of membranes in a simulated / supervised environment
OG35.14	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment
OG35.15	Demonstrate the correct technique to insert and remove an IUD in a simulated/ supervised environment
OG35.16	Diagnose and provide emergency management of antepartum and postpartum hemorrhage in a simulated / guided environment
OG35.17	Demonstrate the correct technique of urinary catheterisation in a simulated/ supervised environment
OG36.3	Demonstrate the correct technique of punch biopsy of uterus in a simulated/ supervised environment
OG37.1	Observe and assist in the performance of a Caesarean section
OG37.2	Observe and assist in the performance of Laparotomy
OG37.3	Observe and assist in the performance of Hysterectomy – abdominal/vaginal

OG37.4	Observe and assist in the performance of Dilatation & Curettage (D&C)
OG37.5	Observe and assist in the performance of Endometrial aspiration - endocervical curettage (EA-ECC)
OG37.6	Observe and assist in the performance of outlet forceps application of vacuum and breech delivery
OG37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion
OG38.1	Laparoscopy :observe
OG38.2	Hysteroscopy ;observe
OG38.3	Lap sterilization: observe

AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

LIST OF COMPETENCIES

Competency addressed	Name of Activity
OG8.6	Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy
OG13.4	Counsel on methods of safe abortion.
OG17.2	Counsel in a simulated environment, care of the breast, importance and the technique of breast feeding
OG19.2	Counsel in a simulated environment, contraception and puerperal sterilisation

OG20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy
OG35.4	Demonstrate interpersonal and communication skills befitting a physician in order to discuss illness and its outcome with patient and family
OG35.6	Demonstrate ethical behavior in all aspects of medical practice.
OG35.11	HIV and hepatitis- counselling patients

Log book record of clinical skills

Sr. no.	Phase	Competency # addressed	Name of Activity	Site Ward, skill lab, opd, casualty	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating	Decision of faculty	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
							Below (B)expectations Meets (M)expectations Exceeds (E) expectation s OR Numerical Score	Completed (C) Repeat (R) Remedial (Re)			
1.		OG5.1									
2.		OG5.2									
3.		OG6.1									
4.		OG8.2									
5.		OG8.3									
6.		OG8.4									
7.		OG8.5									
8.		OG35.1									
9.		OG35.2									
10.		OG35.3									
11.		OG35.5									
12.		OG36.1									

13.		OG36.2								
14.		OG38.4								

Psychomotor skills

Sr. no.	Phase	Competency # addressed	Name of Activity	Site Ward, skill lab, opd, casualty	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
							Below (B)expectations Meets (M)expectations Exceeds (E) expectation s OR Numerical Score				
1.		OG9.2									
2.		OG13.3									
3.		OG13.4									
4.		OG13.5									
5.		OG15.2									
6.		OG18.2									
7.		OG19.3									
8.		OG19.4									
9.		OG33.3									

10.	OG34.4									
11.	OG35.7									
12.	OG35.8									
13.	OG35.9									
14.	OG35.10.									
15.	OG35.11									
16.	OG35.12									
17.	OG35.13									
18.	OG35.14									
19.	OG35.15									
20.	OG35.16									
21.	OG35.17									
22.	OG36.3									
23.	OG37.1									
24.	OG37.2									
25.	OG37.3									
26.	OG37.4									
27.	OG37.5									
28.	OG37.6									
29.	OG37.7									

30.		OG38.1								
31.		OG38.2								
32.		OG38.3								

AetCom skills

Sr. no.	Phase	Competency # addressed	Name of Activity	Site Ward, skill lab, opd, casualty	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B)expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.		OG8.6									
2.		OG13.4									
3.		OG17.2									
4.		OG19.2									
5.		OG20.2									
6.		OG35.4									

7.		OG35.6									
8.		OG35.11									

REFLECTION ON AETCOM MODULE For PHASE IV

Module 4.2- Case studies in medico-legal and ethical situations

Competency addressed	Level
Identify and discuss medico-legal, socio-economic and ethical issues as it pertains to abortion/ Medical Termination of pregnancy and reproductive rights	KH

Reflection (minimum 200 words) -1

Date:

Signature of Teacher-in-charge

REFLECTION ON AETCOM MODULE

Module 4.9- Medical Negligence

Competency addressed	Level
1. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues pertaining to medical negligence	KH
2. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues pertaining to malpractice	KH

Reflection (minimum 200 words)-2

Date:



Signature of Teacher-in-charge

PAP smear obtaining and filling form for same.
(2 cases so 2 similar repetitions)

Signature of teacher:

Date:

Discharge summary(as per institutional format)

1. Vaginal delivery

Signature of teacher:Date:

Discharge summary

2. Caesarean section

Signature of teacher:

Date:

Discharge summary

3. Hysterectomy abdominal

Signature of teacher:

Date:

Discharge summary
4. Hysterectomy vaginal

Signature of teacher:

Date:

Discharge summary

5. MTP

Signature of teacher:

Date:

Discharge summary

6. Tubal ligation

Signature of teacher:

Date

Medical certificate(for obstetric or gynaecological condition)

Signature of teacher:

Date:

Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes, extracurricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase	Signature of Teacher

Reflection (minimum200words) – 1

Date

:

TOPIC:

**Reflection
Date :**

(minimum

200

words)

-

2

TOPIC:

ANNEXURE 1:

RECORDING FORM FOR MINI – CEX

EVALUATOR :

DATE :

STUDENT :

YEAR :

PATIENT DIAGNOSIS :

SETTINGS :

AMBULATORY
IN PATIENT
ED

NEW
FOLLOW UP

COMPLEXITY : LOW
MODERATE
HIGH

PATIENT AGE

OTHER :

PATIENT SEX

FOCUS : DATA GATHERING / DIAGNOSIS / THERAPY / COUNSELLING

1. MEDICAL INTERVIEWING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

2. PHYSICAL INTERVIEWING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

3. HUMANISTIC QUALITIES / PROFESSIONALISM (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

4. CLINICAL JUDGEMENT (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

5. COUNSELLING SKILLS (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

6. ORGANIZATION / EFFICIENCY (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

7. OVERALL CLINICAL COMPETENCE (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

MINI CEX TIME : OBSERVING : _____ MINS

PROVIDING FEEDBACK _____ MINS

UNSATISFACTORY 1,2,3

SATISFACTORY 4, 5, 6

SUPERIOR 7, 8, 9

EVALUATOR SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

RESIDENT SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

COMMENTS :

STUDENT SIGNATURE

EVALUATOR SIGNATURE

ANNEXURE 2:

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Rating 3 - Poor, 4 -6

Satisfactory, 6 -10 Superior

Communication skills rating scale adapted from Kalamazoo consensus statement.

Pediatrics

Course Content

(Based on Medical Council of India,
Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2
/ 3; page nos. 150-201)

1. Total Teaching hours: 105 hours (Lectures + Tutorials);
15 hours (Self-directed learning);
174 hours Clinical posting
 2. A. Lectures(hours): 40(20 hours each in III MBBS Part I & Part II)
B. Self-directed learning (hours): 15 (5 hours in III MBBS Part I & 10 hours in III MBBS Part II)
 - C. Clinical Postings (hours): 174 (2 weeks/ 4 weeks/ 4 weeks)
 - D. Small group teachings/tutorials/Integrated teaching/Practicals (hours):
65 hours (30 hours in III MBBS Part I and 35 hours in III MBBS Part II)
- 8 symposia will be conducted from theory topics in
 - 15 hours of Self-directed Learning (3 in III MBBS (Part I) and
 - 5 in III MBBS (Part II))
 - Two (02) Full day workshops
 - IMNCI
 - NRP
 - Module 4.7 AETCOM Module will be covered in III MBBS (Part II) (05 hours)

Tutorials/ Small Group Discussions III (Part I) MBBS (30 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1	Normal Growth and Development	01	Developmental milestones (PE 1.5, 1.6)	1. Definition of Development 2. Principals of development 3. Factors affecting Development 4. Domains of Development 5. Milestones in various domains	Psychiatry

				6. Developmental assessment	
2	Common problems related to growth	02	Failure to thrive (PE 2.1, 2.4)	<ol style="list-style-type: none"> 1. Definition 2. Etiology <ol style="list-style-type: none"> 1. Clinical Features 2. Evaluation of a child with Failure to thrive 3. Management 	
			Short stature (PE 2.6)	<ol style="list-style-type: none"> 1. Definition 2. Etiology 3. Clinical Features 4. Evaluation of a child with Short stature 5. Management 	
3.	Care of the Normal Newborn, and High-risk Newborn	02	Care of normal newborn (PE 20.1, 20.2, 20.6,)	<ol style="list-style-type: none"> 1. Define the common neonatal nomenclatures including the classification 2. Describe the characteristics of a Normal Term Neonate and High-Risk Neonates. 3. Explain the care of a normal neonate 	Obs & Gynae
			Temperature regulation and Neonatal hypothermia (PE 20.12)	<ol style="list-style-type: none"> 1. Temperature regulation in neonates 2. Disorders of temperature regulation 3. Definition of hypothermia 4. Prevention of hypothermia 5. Clinical features of hypothermia 6. Management of hypothermia 	
4.	To promote and support optimal Breast feeding for infants	01	Breast Feeding (PE 7.1, 7.2, 7.3, 7.4, 7.6)	<ol style="list-style-type: none"> 1. Awareness on the cultural beliefs and practices of breast feeding. 2. Enumerate advantages of breast feeding 3. Explain the physiology of lactation. 4. Technique of breast feeding 5. Problems in breast feeding 6. Enumerate the baby friendly hospital initiatives 7. Describe the composition and types of breast milk 8. Discuss the differences between cow's milk and Human milk. 9. Discuss the advantages of breast milk. 10. Overview about expressed breast milk 	Obs & Gynae
5.	Complementary Feeding	01	Complementary feeding and	<ol style="list-style-type: none"> 1. Define the term Complementary Feeding. 2. Discuss the principles, the initiation, 	

			IYCF (PE 8.1, 8.2, 8.3)	<p>attributes, frequency, techniques and hygiene related to Complementary Feeding</p> <ol style="list-style-type: none"> 3. IYCF 4. Enumerate the common complimentary foods 	
6.	Provide nutritional support, assessment and monitoring for common nutritional problems	01	Protein Energy Malnutrition (PE 10.1, 10.2, 10.4, 10.6)	<ol style="list-style-type: none"> 1. Define malnutrition 2. Classify malnutrition including WHO classification, 3. Describe the etio-pathogenesis, clinical features, complication of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM). 4. Differentiate between kwashiorkor and marasmus 5. Outline the clinical approach to a child with SAM and MAM. 6. Management of a child with SAM and MAM. 7. Enumerate the role of locally prepared therapeutic diets and ready to use therapeutic diets. 8. Strategies to prevent malnutrition 	
7.	Obesity in Children	01	Obesity (PE 11.1, 11.2, 11.6)	<ol style="list-style-type: none"> 1. Define obesity 2. Describe the common etiology, clinical features and management of obesity in children. 3. Discuss the risk approach for obesity and criteria for referral 4. Discuss the prevention strategies 	
8.	<p>Micronutrients in health and disease 1: (Vitamins A,D,E,K, B Complex and C)</p> <p>Micronutrients in health and disease 2: Iron, Iodine,</p>	04	Vitamin A Vitamin E, K (PE 12.1, 12.2, 12.4, 12.5, 12.11, 12.12, 12.13, 12.14)	<p>Vitamin A</p> <ol style="list-style-type: none"> 1. RDA, dietary sources of Vitamin A and their role in Health and disease. 2. Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin A. 3. Discuss the Vitamin A prophylaxis program and their recommendations <p>Vitamin E</p> <ol style="list-style-type: none"> 1. Discuss the RDA, dietary sources of Vitamin E and their role in health and disease. 	

Calcium and Magnesium			<ol style="list-style-type: none"> Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin E. <p>Vitamin K</p> <ol style="list-style-type: none"> Discuss the RDA, dietary sources of Vitamin K and their role in health and disease. Describe the causes, clinical features, diagnosis management and prevention of deficiency of Vitamin K 	
	Vitamin B, C and Iodine deficiency disorders (PE 12.15, 12.16, 12.18, 12.19, 12.20, 13.7, 13.8, 13.10, 13.10)		<p>Vitamin B</p> <ol style="list-style-type: none"> Discuss the RDA, dietary sources of Vitamin B and their role in health and disease Describe the causes, clinical features, diagnosis and management of deficiency of B complex Vitamins. <p>Vitamin C</p> <ol style="list-style-type: none"> Discuss the RDA , dietary sources of Vitamin C and their role in Health and disease Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin C (scurvy) <p>Iodine deficiency Disorder</p> <ol style="list-style-type: none"> Discuss the RDA, dietary sources of Iodine and their role in Health and disease. Describe the causes, clinical features, diagnosis and management of deficiency of Iodine. Discuss the National Goiter Control program and their recommendations. 	
	Iron deficiency anemia (PE 13.1, 13.2, 13.5, 13.6)		<ol style="list-style-type: none"> Discuss the RDA, dietary sources of Iron and their role in health and disease' Describe the causes, clinical features, diagnosis and management of Fe deficiency Discuss the National Anemia control program and its recommendations. 	
	Vitamin D and Calcium & Magnesium deficiency (PE 12.6, 12.7,		<p>Vitamin D/Ca/Mg</p> <ol style="list-style-type: none"> Discuss the RDA, dietary sources of Vitamin D and their role in health and disease. Describe the causes, clinical features, 	

			12.9, 12.10, 13.11, 13.12, 13.13, 13.14)	<p>diagnosis and management of Deficiency / excess of Vitamin D (Rickets and Hypervitaminosis D).</p> <ol style="list-style-type: none"> 3. Discuss the role of screening for Vitamin D deficiency 4. Discuss the RDA, dietary sources of Calcium and their role in health and disease 5. Describe the causes, clinical features, diagnosis and management of Ca Deficiency 6. Discuss the RDA, dietary sources of Magnesium and their role in health and disease. 7. Describe the causes, clinical features, diagnosis and management of Magnesium Deficiency 	
29	Anemia and other Hemato-oncologic disorders in children	02	Anemia (PE 29.1)	<ol style="list-style-type: none"> 1. Definition 2. Etiopathogenesis 3. Classification 4. Approach to a child with anemia 	
			Nutritional anemia (PE 29.2, 29.3, 29.5)	<p>Iron def anemia/ Megaloblastic anemia</p> <ol style="list-style-type: none"> 1. Etiopathogenesis 2. Clinical features 3. Lab investigations 4. Management 5. Discuss the National Anemia Control Program 	
9.	Fluid and electrolyte balance	01	Fluid and electrolytes (PE 15.1, 15.2)	<ol style="list-style-type: none"> 1. Composition of body fluids 2. Water balance and Osmolality 3. Normal maintenance fluid and electrolyte requirements 4. Sodium balance and its disorders 5. Potassium balance and its disorders 6. Overview of Acid-Base disorders 	
10	National Programs, RCH – Universal Immunizations program	02	Vaccines in children (PE 19.1, 19.2, 19.3, 19.4)	<ol style="list-style-type: none"> 1. Components of the Universal Immunization Program and the National Immunization Program. 2. Epidemiology of Vaccine preventable diseases 3. Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and 	

				<p>contraindications. (BCG, OPV, IPV Hep B, DPT, Hib, MMR)</p> <p>4. Define cold chain and discuss the methods of safe storage and handling of vaccines</p>	
			<p>Immunization in special situations and newer vaccines (PE 19.5, 19.16)</p>	<p>1. Immunization in special situations – HIV positive children, immunodeficiency, pre-term, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travelers.</p> <p>2. Enumerate available newer vaccines and their indications including pentavalent pneumococcal, rotavirus, JE, typhoid IPV & HPV.</p> <p>3. Combination vaccines</p> <p>4. AEFI</p>	
11	Respiratory system	02	<p>RTI GEM – I (PE 28.1, 28.2, 28.3, 28.4, 28.5, 28.6, 28.7, 28.8))</p>	<p>Naso pharyngitis/ Pharyngo Tonsillitis/ Acute Otitis Media (AOM)</p> <p>1. Etio-pathogenesis</p> <p>2. Clinical features</p> <p>3. Management</p> <p>4. Complications</p>	
				<p>Stridor/Epiglottitis/Acute laryngotracheobronchitis/Foreign Body Aspiration</p> <p>1. Etiopathogenesis</p> <p>2. Clinical features</p> <p>3. Management</p>	
			<p>RTI GEM -II (PE 28.18)</p>	<p>Bronchiolitis and wheeze associated LRTI/ Empyema/Lung Abscess</p> <p>1. Etio-pathogenesis</p> <p>2. Clinical features</p> <p>3. Diagnosis</p> <p>4. Management</p> <p>5. Prevention</p>	
12	Vaccine preventable Diseases & Tuberculosis	02	<p>Fever & Exanthematous Fever (PE 34.14, 34.15)</p>	<p>1. Enumerate the common causes of fever</p> <p>2. Etiopathogenesis</p> <p>3. Clinical features</p> <p>4. Complications</p> <p>5. Management</p> <p>6. Approach to a child with Exanthematous Fever</p>	
			<p>Measles, Mumps, Rubella &</p>	<p>1. Etiopathogenesis</p> <p>2. Clinical features</p> <p>3. Complications</p>	

			Chicken pox (PE 34.15)	<ol style="list-style-type: none"> 4. Management 5. Prevention 6. Measles, Mumps, Rubella & Chicken pox vaccines 	
13	Chromosomal Abnormalities	01	Down syndrome, Turner & Klinefelter syndrome (PE 32.1, 32.3, 32.4, 32.5, 32.6, 32.8, 32.9, 32.10, 32.11, 32.13)	<ol style="list-style-type: none"> 1. Genetic basis 2. Risk factors 3. Clinical features 4. Complications 5. Prenatal diagnosis 6. Management 7. Genetic counselling. 	General Medicine – PE 32.3, 32.9 Obs & Gynae – PE 32.9
14	Diarrheal diseases and Dehydration	01	Diarrheal diseases & dehydration incl Persistent diarrhea, Chronic diarrhea and dysentery (PE 24.1, 24.2, 24.3, 24.4, 24.5, 24.6, 24.7, 24.8, 24.14)	<ol style="list-style-type: none"> 1. Etio-pathogenesis 2. Classification 3. Clinical presentation 4. Management 5. Physiological basis of ORT 6. Types of ORS 7. Composition of various types of ORS 8. Classification and clinical presentation of various types of diarrheal dehydration 9. Types of fluid used in Pediatric diarrheal diseases and their composition 10. Role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti-emetics in acute diarrheal diseases 	
15	Pediatric Emergencies – Common Pediatric Emergencies	02	Poisoning (PE 27.8, 14.1, 14.2, 14.3, 14.4)	<ol style="list-style-type: none"> 1. Clinical approach to a child with suspected poisoning 2. Common poisonings – Hydrocarbon/OP/PCM/Lead/Envenomation 3. Etiopathogenesis 4. Clinical features 5. Lab investigations 6. Management 	General Medicine
			Child abuse (PE 27.29)	<ol style="list-style-type: none"> 1. Causes 2. Clinical presentation Medico-legal implications 	
16	Allergic Rhinitis, Atopic Dermatitis,	01	Allergy in children (PE 31.1, 31.3, 31.12)	Allergic Rhinitis/Atopic Dermatitis/Urticaria Angioedema <ol style="list-style-type: none"> 1. Etiology 2. Clinical features 	

	Bronchial Asthma , Urticaria Angioedema			3. Management 4. Complications 5. Prevention	
17	Adolescent health and common problems related to Adolescent Health.	01	Adolescence & Puberty (PE 6.10, 6.11)	1. Visit to the Adolescent Clinic. Discuss the objectives and functions of AFHS (Adolescent Friendly Health Services) and the referral criteria.	Psychiatry
18	Common problems related to Development-1 (Developmental delay, Cerebral palsy)	01	Developmental delay (PE 3.5, 3.6, 3.7)	1. Visit a Child Developmental Unit and observe its functioning. Discuss the role of the child developmental unit in management of developmental delay. Discuss the referral criteria for children with developmental delay	
19	Common problems related to Development-2 (Scholastic backwardness, Learning disabilities, Autism ADHD)	01	Scholastic backwardness and Learning Disabilities (LD) (PE 4.5, 4.6, 5.10,5.11)	1. Visit to child guidance clinic. Discuss the role of Child Guidance clinic in children with Developmental problems& Behavioral problems.	
TOTAL		30			

Theory III (Part I) MBBS (20 hours)

S. No	Topic	Hours	Lectures (Competency No)	SLO	Horizontal Integration
1.	Normal Growth and Development	01	Growth & Development (PE 1.1, 1.2, 1.3, 1.5)	1. Definition of Growth 2. Definition of Development 3. Physiology of Growth & Development 4. Normal Growth – Somatic and physical 5. Assessment of Growth	Psychiatry

				<p>parameters; Growth charts</p> <p>6. Factors affecting Growth & Development</p> <p>7. Overview of disorders related to Growth & Development</p>	
2.	Common problems related to Development-1 (Developmental delay, Cerebral palsy)	02	Developmental delay (PE 3.1, 3.2, 30.10)	<ol style="list-style-type: none"> 1. Definition 2. Developmental delay vs Intellectual disability 3. Etiology 4. Clinical Features 5. Approach to developmental delay and ID 6. Prevention and management 	
			Cerebral palsy (PE 3.8, 30.11)	<ol style="list-style-type: none"> 1. Definition 2. Etiopathogenesis 3. Types of CP 4. Evaluation of a child with CP 5. Prevention and management 	Physical Medicine & Rehabilitation
3.	Common problems related to Development-2 (Scholastic backwardness, Learning disabilities, Autism ADHD)	02	Scholastic backwardness and Learning Disabilities (LD) (PE 4.1, 4.2)	<ol style="list-style-type: none"> 1. Causes of Scholastic backwardness 2. Approach to a child with Scholastic backwardness 3. Definition of LD 4. Types of LD and clinical features 5. Etiology 6. Approach to a child with LD and management 	
			ADHD and Autism (PE 4.3, 4.4)	<ol style="list-style-type: none"> 1. Etiology of ADHD 2. Clinical features of ADHD 3. Diagnosis and management of ADHD 4. Etiology of Autism 5. Clinical features of Autism 6. Diagnosis and management of Autism 	
4.	Common problems related to behavior	01	Behavioral problems of children incl Enuresis & Encopresis (PE 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9)	<ol style="list-style-type: none"> 1. Describe the clinical features, diagnosis and management of common behavioral problems like <ul style="list-style-type: none"> • Thumb sucking, • Feeding problems, • Nail biting • Breath Holding spells, • Pica, 	Psychiatry

				<ul style="list-style-type: none"> • Fussy infant. <ol style="list-style-type: none"> 2. Definition of enuresis and encopresis 3. Differentiate between primary and secondary enuresis 4. Maturation of bowel and bladder control 5. Etiology of Enuresis and Encopresis 6. Clinical features of Enuresis and Encopresis 7. Management of Enuresis and Encopresis 	
5.	Adolescent health and common problems related to Adolescent Health.	01	Adolescence & Puberty (PE 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.12, 6.13)	<ol style="list-style-type: none"> 1. Define Adolescence 2. Stages of adolescence and SMR 3. Describe the physical, physiological and psychological changes during adolescence and Puberty. 4. Outline the general health problems during adolescence. 5. Describe adolescent sexuality and common problems related to it. 6. Explain the Adolescent Nutrition and common nutritional problems. 7. Outline the common Adolescent eating disorders (Anorexia Nervosa, Bulimia). 8. Describe the common mental health problems during adolescence. 9. Enumerate the importance of obesity and other NCD in adolescents. 10. Enumerate the prevalence and the importance of recognition of sexual drug abuse in adolescents and children. 	Psychiatry
6.	Normal nutrition, assessment and monitoring.	01	Normal Nutrition (PE 9.1, 9.2, 9.3, 9.7)	<ol style="list-style-type: none"> 1. Describe the age-related nutritional needs of infants, children and adolescents including micronutrients and 	

				<ul style="list-style-type: none"> vitamins 2. Concept of RDA and balanced diet. 3. Describe the tools and methods for assessment and classification of nutritional status of infants, children and adolescents. 4. Explains the Calorific value of common Indian foods 	
7.	Vaccine preventable Diseases & Tuberculosis	8	Tuberculosis in children (PE 34.1, 34.2, 34.12, 34.13)	<ul style="list-style-type: none"> 1. Epidemiology 2. Clinical features and clinical types 3. Complications of Tuberculosis 4. Diagnostic tools for childhood tuberculosis. 5. Indications and discuss the limitations of methods of culturing M. Tuberculosis. 6. Newer diagnostic tools for Tuberculosis including BACTEC CBNAAT and their indications 	Respiratory Medicine
			Management of tuberculosis (PE 34.3, 34.4)	<ul style="list-style-type: none"> 1. Various regimens for management of Tuberculosis as per National Guidelines. 2. Preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Programme 	Respiratory Medicine
			Diphtheria, Pertussis, Tetanus (PE 34.16)	<ul style="list-style-type: none"> 1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Diphtheria, Pertussis, Tetanus vaccines 	
			Enteric fever (PE 34.17)	<ul style="list-style-type: none"> 1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Typhoid vaccines 	
			Rickettsial diseases (PE 34.20)	<ul style="list-style-type: none"> 1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 	
			Parasitic infections	Common Parasitic infections - leishmaniasis, filariasis, helminthic	

			(PE 34.19)	infestations, amebiasis, giardiasis 1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention	
			Malaria (PE 34.19)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. National Malaria Eradication Programme	
			Dengue Fever (PE 34.18)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Overview of Chikungunya	
8.	Systemic Pediatrics- Central Nervous system	01	Acute Flaccid Paralysis (AFP) and Poliomyelitis (PE 30.13)	1. Etiology 2. Approach to a child with AFP 3. Evaluation 4. Management 5. AFP Surveillance	
9.	Endocrinology	03	Hypothyroidism (PE 33.1)	1. Physiology of thyroid gland 2. Thyroid function test 3. Etiology 4. Congenital vs Acquired 5. Clinical features 6. Evaluation 7. Management 8. New-born Screening	
			Diabetes mellitus in children and DKA (PE 33.4)	1. Etiopathogenesis 2. Diagnostic criteria 3. Classification 4. Clinical features 5. Management 6. Complications incl DKA	
			Disorders of puberty (PE 33.8)	Precocious and delayed Puberty 1. Definition 2. Etiology 3. Clinical Features 4. Evaluation 5. Management	
TOTAL		20			

Self-Directed Learning III (Part I) MBBS (05 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	The National Health Programs, NHM The National Health Programs, RCH	02	National programs pertaining to maternal & child health, child survival & safe motherhood (PE 17.1, 17.2, 18.1, 18.2)	<ol style="list-style-type: none"> 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 Indra Dhanush and ICDS. 2. List and explain the components, plan, outcome of Reproductive Child Health (RCH) program and appraise its monitoring and evaluation 3. Explain preventive interventions for child survival and safe motherhood 	Obs & Gynae
TOTAL		02			

Tutorials/ Small Group Discussions III (Part II) MBBS (35 hours)

S. No	Topic	Hours	Domain (Competency No.)	SLO	Horizontal Integration
1	Group Discussions	01	Fluids & Electrolytes, Nutrition (PE 15.3, 15.4, 15.5, 9.5)	<ol style="list-style-type: none"> 1. Calculate fluid and electrolyte imbalance, Interpret electrolyte report, 2. Calculate the fluid and electrolyte requirement in health 3. Plan an appropriate diet in health & disease 	
		01	Cardiac Failure (PE 23.11, 23.16, 23.17, 23.18)	<ol style="list-style-type: none"> 1. Develop a treatment plan and prescribe appropriate drugs including fluids in cardiac diseases, anti -failure drugs, and inotropic agents. 2. Discuss the indications and limitations of Cardiac catheterization. 3. Enumerate some common cardiac surgeries like BT shunt, Potts and Waterston's and corrective surgeries 4. Demonstrate empathy while dealing with cardiac disease. 	
		01	Oxygen Therapy (PE 27.9, 27.10, 14.5)	<ol style="list-style-type: none"> 1. Discuss oxygen therapy in Pediatric emergencies and modes of administration. 2. Observe the various methods of administering Oxygen. 3. Discuss oxygen toxicity and free radical injury 	
		01	Counselling (PE 2.3, 3.4, 8.5, 27.32, 27.33, 28.20)	<ol style="list-style-type: none"> 1. Counselling a parent with failing to thrive child 2. Counselling a parent with developmental delay 3. Counsel & educate mothers on the best practices in complimentary feeding 4. Obtain Informed Consent. 	

				<ol style="list-style-type: none"> 5. Counsel parents of dangerously ill/terminally ill child to break bad news 6. Counsel the child with asthma on the correct use of inhalers in a simulated environment 	
		01	Hemat (PE 29.18, 29.20)	<ol style="list-style-type: none"> 1. Enumerate the referral criteria for Hematological conditions. 2. Enumerate the indications for splenectomy and precautions 	
2.	Radiology	01	X-Ray/USG/Neuroimaging (PE 21.12, 21.13, 23.12, 26.9, 28.17, 30.21, 30.22, 31.9, 34.8)	<ol style="list-style-type: none"> 1. Interpret report of Plain X Ray of KUB 2. Enumerate the indications for and Interpret the written report of Ultra sonogram of KUB 3. Interpret a chest X ray and recognize Cardiomegaly 4. Interpret Liver USG 5. Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case of management 6. Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in pediatric chest X-rays 7. Enumerate the indication and limitations & Interpret the reports of CT, MRI Brain & Spine 8. Interpret CX Ray in Asthma 9. Interpret a Chest Radiograph in pediatric TB 	
3.	Cards (Case Scenario based)	01	(PE 21.11, 23.13, 23.14, 24.13, 26.9, 26.11, 28.16, 29.14, 19.15, 29.16, 30.20, 30.21, 30.22, 33.3, 33.6, 33.9, 34.9, 34.10)	<ol style="list-style-type: none"> 1. Interpret Hemogram and Iron Panel 2. interpret the common analytes in a Urine examination 3. Interpret Pediatric ECG 4. Choose and Interpret blood reports in Cardiac illness 5. Interpret RFT and electrolyte report 6. Interpret Liver Function Tests, 	

				<p>viral markers.</p> <ol style="list-style-type: none"> 7. Enumerate indications of UGI Endoscopy 8. Interpret blood tests relevant to upper respiratory problems. 9. Interpret CBC, LFT in anemia 10. Perform and interpret peripheral smear 11. Discuss the indications for Hemoglobin electrophoresis and interpret report 12. Interpret and explain the findings in a CSF analysis 13. Interpret and explain neonatal thyroid screening report 14. Perform and interpret Urine Dip Stick for Sugar. Interpret Blood sugar reports and explain the diagnostic criteria for Type 1 Diabetes 15. Interpret the reports of EEG 16. Perform Sexual Maturity Rating (SMR) and interpret 17. Interpret blood tests in the context of laboratory evidence for tuberculosis. Discuss the various samples for demonstrating the organism e.g. Gastric Aspirate, Sputum, CSF, FNAC. 	
4.	Skills Lab	02	(PE 15.6, 15.7, 19.9, 19.13, 20.3, 24.15, 24.16, 24.17, 26.10, 27.20, 29.17, 30.23)	<ol style="list-style-type: none"> 1. Demonstrate the steps of inserting an IV cannula in a model 2. Demonstrate the steps of inserting an interosseous line in a mannequin 3. Demonstrate the correct administration of different vaccines in a mannequin. 4. Describe the components of safe vaccine practice – Patient education/ counselling; adverse events following immunization, safe injection practices, documentation and Medico-legal implications 5. Perform Neonatal resuscitation 	AETCOM – PE 19.9

				<p>in a manikin</p> <ol style="list-style-type: none"> 6. Perform NG tube insertion in a manikin 7. Perform IV cannulation in a model 8. Demonstrate the technique of liver biopsy or perform Liver Biopsy in a simulated environment. 9. Demonstrate performance of bone marrow aspiration in manikin 10. Perform in a mannequin lumbar puncture. Discuss the indications, contraindication of the procedure 	
5.	Genito-Urinary system	02	Hypertension in children (PE 21.17)	<ol style="list-style-type: none"> 1. Definition 2. Etiopathogenesis 3. Grading 4. Clinical features 5. Management 6. Complications 7. Acute severe hypertension 	
			Voiding Disorders (PE 21.15)	<ol style="list-style-type: none"> 1. Discuss & Enumerate the referral criteria for children with genitourinary disorder 2. Counsel & educate patients regarding referral 	
6.	Cardiovascular system: Heart disease	04	Congestive cardiac failure in infants and children (PE 23.3)	<ol style="list-style-type: none"> 1. Etiology 2. Pathogenesis 3. Clinical presentation 4. Management 	
			Acyanotic congenital heart diseases (PE 23.1)	<p>VSD, ASD and PDA</p> <ol style="list-style-type: none"> 1. Etiology 2. Hemodynamic changes 3. Clinical features 4. Investigations 5. Management 	
			Cyanotic congenital heart diseases (PE 23.2)	<ol style="list-style-type: none"> 1. Classify Cyanotic congenital heart disease <p>Fallot's Physiology</p> <ol style="list-style-type: none"> 2. Etiology 3. Hemodynamic changes 4. Clinical features 5. Investigations 	

				6. Management	
			Acquired Heart Disease (PE 23.4, 23.5, 23.6)	Infective endocarditis 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management Acute rheumatic fever 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management and prevention 5. Complications	
7.	Pediatric Emergencies – Common Pediatric Emergencies	03	Shock in children (PE 27.5)	1. Definition 2. BP regulation 3. Pathophysiology 4. Classification 5. Monitoring 6. Management	
			Status epilepticus (PE 27.6, 30.9)	1. Definition 2. Etiology 3. Approach to a child with status epilepticus 4. Evaluation 5. Management	
			Unconscious child and Coma (PE 27.8)	1. Definition 2. Etiopathogenesis 3. Evaluation 4. Management 5. Brain death	
8.	Care of the Normal Newborn, and High-risk Newborn	04	Care of low birth weight (LBW) babies (PE 20.11)	1. Definition 2. Etiology 3. Explain the terminologies – IUGR/SGA 4. Clinical features 5. Issues in LBW care 6. Feeding in LBW babies 7. Management of LBW babies 8. Growth monitoring of LBW babies	
			Neonatal hypoglycemia & hypocalcemia (PE 20.13, 20.14)	Hypoglycemia and hypocalcemia 1. Definition 2. Etiology 3. Clinical features 4. Management	
			Neonatal Seizures (PE 20.15)	1. Etiology 2. Clinical features 3. Management	

			Perinatal infections (PE 20.17)	TORCH/Tuberculosis/Hep B/Varicella 1. Etiology 2. Transmission 3. Clinical features 4. Management	
9.	Anemia and other Hemato-oncologic disorders in children	02	Hemolytic anemia (PE 29.4)	1. Etiology 2. Classification 3. Approach to a child with hemolytic anemia 4. Management 5. Overview of HS, AIHA and HUS	
			Thalassemia and Sickle Cell Anemia (PE 29.4)	1. Etiology 2. Clinical features 3. Lab investigations 4. Management incl Iron Chelation therapy 5. Complications	
10.	Acute and chronic liver disorders	02	Acute liver disease & Fulminant hepatic failure (PE 26.1, 26.2)	Acute hepatitis in children – Viral (Hep A,B,C), Autoimmune and Wilsons disease 1. Etio-pathogenesis 2. Clinical features 3. Management Fulminant Hepatic Failure in children 1. Etio-pathogenesis 2. Clinical features 3. Management	
			Chronic liver disease & Portal hypertension (PE 26.3, 26.4, 26.11, 26.12)	Chronic liver diseases in children 1. Etio-pathogenesis 2. Clinical features 3. Evaluation 4. Complications – hepatic encephalopathy and ascites 5. management Portal Hypertension in children 1. Etio-pathogenesis 2. Clinical features 3. Management 4. Complications	
11.	Respiratory system	01	Pneumonia and ARDS (PE 27.3, 27.4)	1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management	

				5. Prevention	
4.	Malabsorption	01	Malabsorption (PE 25.1)	1. Etio-pathogenesis 2. Clinical presentation 3. Management 4. Overview of celiac disease	
TOTAL		28			

Theory III (Part II) MBBS (20 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	Care of the Normal Newborn, and High-risk Newborn	05	Birth asphyxia (PE 20.7)	1. Definition 2. Etiology 3. Clinical features 4. Management 5. Prevention	
			Respiratory distress in newborn (PE 20.8)	RDS/TTNB/MAS 1. Etiology 2. Clinical features incl scoring systems 3. Management	
			Birth injuries & Hemorrhagic disease of newborn (HDN) (PE 20.9, 20.10)	Birth Injuries 1. Etiology 2. Clinical features 3. Management HDN 1. Definition and classification 2. Etiology 3. Clinical features 4. Management 5. Prevention	
			Neonatal Sepsis (PE 20.16)	1. Classification 2. Etiology 3. Clinical features 4. Investigations 5. Management	
			Surgical conditions in newborn (PE 20.20)	TEF, esophageal atresia, anal atresia, cleft lip and palate, congenital diaphragmatic hernia 1. Etiology 2. Clinical presentation 3. Management 4. Causes of acute abdomen in	

				neonates	
2.	Genito-Urinary system	03	UTI (PE 21.1)	<ol style="list-style-type: none"> Etiology and predisposing factors Clinical features Diagnosis Management VUR 	
			Approach to hematuria & Acute glomerulonephritis (PE 21.2, 21.4)	Hematuria <ol style="list-style-type: none"> Definition Diagnostic evaluation Referral criteria Acute Glomerulonephritis <ol style="list-style-type: none"> Definition Etiology Clinical features of PSGN Management of PSGN Complications 	
			Acute kidney injury (AKI) and Chronic kidney disease (CKD) (PE 21.5, 21.6)	<ol style="list-style-type: none"> Definition and classification Etiology and pathophysiology Approach to a child with AKI Management Complications Renal replacement therapy 	
3.	Approach to and recognition of a child with possible rheumatologic problem	02	Approach to Rheumatological Problems incl JIA and SLE (PE 22.1)	<ol style="list-style-type: none"> Enumerate the common Rheumatological problems in children. Approach to a child with arthritis Referral criteria for a child with possible rheumatologic problem JIA/SLE <ol style="list-style-type: none"> Definition Etiopathogenesis Clinical subtypes/Clinical features Diagnosis Management 	
			Vasculitic disorders in children (PE 22.3)	Enumerate common Vasculitic disorders in children and its classification Kawasaki disease/HSP <ol style="list-style-type: none"> Etiology Clinical features Diagnosis Management 	
4.	Anemia and other Hemato-	02	Thrombocytopenia and Hemophilia (PE 29.6, 29.7)	Thrombocytopenia <ol style="list-style-type: none"> Causes of thrombocytopenia Etiology of ITP 	

	oncologic disorders in children			3. Clinical features and management of ITP Hemophilia 1. Approach to a child with bleeding disorder 2. Etiology and types of hemophilia 3. Clinical features and management of hemophilia	
			Leukemia, Lymphomas and Solid Tumors in children (PE 29.8, 29.9, 21.17)	ALL/Lymphoma/Wilm's Tumor 1. Etiology 2. Clinical features 3. Management	
5.	Systemic Pediatrics- Central Nervous system	08	Meningitis in children (PE 30.1, 30.2)	1. Etio pathogenesis 2. Clinical features 3. Lab investigations 4. Management 5. Prevention 6. Differentiate between Bacterial, Viral and TB Meningitis 7. Approach to a child with acute febrile encephalopathy	
			Hydrocephalus (PE 30.3)	1. Etio pathogenesis 2. Clinical features 3. Investigations 4. Complications 5. Management 6. Overview of IIH	
			Microcephaly and Neural tube defects (PE 30.4, 30.5)	1. Etio pathogenesis 2. Classification/Types 3. Clinical features 4. Complications 5. Management	
			Infantile hemiplegia/ Stroke (PE 30.6)	1. Etio pathogenesis 2. Clinical features 3. Investigations 4. Management	
			Epilepsy in children (PE 30.8)	1. Definition 2. Pathogenesis 3. Types of Epilepsy 4. Clinical presentation 5. Management 6. Overview of status epilepticus	
			Muscular	DMD/BMD	

			dystrophy (PE 30.14)	<ol style="list-style-type: none"> 1. Etiology 2. Clinical features 3. Differential diagnosis 4. Evaluation 5. Management 	
			Ataxia in children (PE 30.15)	<ol style="list-style-type: none"> 1. Definition 2. Etiology 3. Clinical features 4. Differential Diagnosis 5. Management 	
			Approach to headache in children (PE 30.16)	<ol style="list-style-type: none"> 1. Pathophysiology of headache 2. Approach to a child with headache 3. Types of Headache 4. Management 	
TOTAL		20			

Self-Directed Learning III (Part II) MBBS (10 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	Systemic Pediatrics- Central Nervous system	04	Floppy infant (PE 30.12)	<ol style="list-style-type: none"> 1. Etiology 2. Clinical features 3. Differential diagnosis 4. Evaluation 5. Management 	
			Febrile seizures (PE 30.7)	<ol style="list-style-type: none"> 1. Definition 2. Types 3. Etio pathogenesis 4. Clinical features 5. Investigations 6. Complications 7. Management 	
2.	Care of the Normal Newborn, and High-risk Newborn	02	Neonatal hyperbilirubinemia (PE 20.19)	<ol style="list-style-type: none"> 1. Physiological vs pathological jaundice 2. Etiology 3. Clinical features 4. Approach to a neonate with jaundice 5. Management 6. Follow-up 	
3.	Genito-Urinary system	02	Approach to Proteinuria & Nephrotic	Proteinuria <ol style="list-style-type: none"> 1. Definition 2. Diagnostic evaluation 	

			syndrome (PE 21.3)	3. Referral criteria Nephrotic Syndrome 1. Definition 2. Etiology 3. Terminologies – Remission/Relapse/Steroid dependence/Steroid resistance 4. Clinical features 5. Management 6. Complications 7. SDNS/SRNS/Congenital nephrotic syndrome	
4.	Respiratory system	02	Asthma in children (PE 28.19, 28.20, 31.5, 31.7, 31.8, 31.10)	1. Pathophysiology incl Triggers 2. Clinical features 3. Diagnosis and differential diagnosis 4. Management 5. Inhalational therapy 6. Monitoring and modification of treatment 8. Management of acute exacerbation of bronchial asthma	
TOTAL		10			

Internal Assessment

Subject – Pediatrics

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase		
	Theory	Practical
Second MBBS	-	EOP Practical Examination may be conducted. However, these marks shall not be added to the Internal Assessment.

3rd Year (III MBBS, PART I)						
Phase	I-Exam (January)			II-Exam (April)		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/I MBBS	50	50	100	50	50	100

4th Year (III MBBS, PART II)						
Clinical posting- 4 weeks						
Theory- lectures- 20, tutorials- 35, self-directed learning-10. Total 65 hrs						
Phase	III-Exam (May)			IV-Exam (Preliminary examination) (November)		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/II MBBS	50	50	100	100	100	200

Assessment in CBME is ONGOING PROCESS,

No Preparatory leave is permitted.

1. There shall be 4 internal assessment examinations in Pediatrics including Prelim.
2. The suggested pattern of question paper for internal assessment examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 25 (theory) + 25 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	-	-
Phase III/I	100	100
Phase III/II	150	150
Total	250	250
Conversion out of	25	25
Conversion formula	Total marks in 4 IA theory examinations /10	Total marks in 4 IA Practical examinations /10
Eligibility criteria after conversion	10	10
	Combined theory + Practical = 25	

1. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

2. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
3. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.
4. Remedial measures

A. Remedial measures for non-eligible students

- i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be arranged.
- ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
- iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. The marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination	100	100
Conversion out of	25	25
Conversion formula	Marks in remedial theory examinations /4	Marks in remedial Practical examinations /4
Eligibility criteria after conversion	10	10
	Combined theory + Practical = 25	

B. Remedial measures for absent students:

- If any of the students is absent for any of the 4 IA examinations due to any reasons, following measures shall be taken.
- i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
 - ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
 - iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Internal Assessment Practical Examinations

Pediatrics

Internal Assessment Practical – I, II and III

Subject: Pediatrics Practical (IA – I, II and III)				
Case	OSCE 1	OSCE 2	Journal & log book	Practical Total marks
20	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills., history taking of a particular symptom; nutrition history, developmental history, immunization history.

Prelim Practical

Subject: Pediatrics Practical (Prelims)					
Long Case (Including clinical skills demonstration)	Short Case (Including communication skills)	OSCE (4 stations x 10 marks each)	Viva	Journal & log book	Practical Total marks
25	15	40	10	10	100

OSCE 1 – Clinical Skills , OSCE 2 – Anthropometry assessment, OSCE 3 – Certifiable procedural skills , OSCE 4 – AETCOM related skills

MUHS Final Practical

Subject: Pediatrics Practical (Prelims)				
Long Case (Including clinical skills demonstration)	Short Case (Including communication skills)	OSCE (4 stations x 10 marks each)	Viva	Practical Total marks
30	20	40	10	100

OSCE 1 – Clinical Skills , OSCE 2 – Anthropometry assessment, OSCE 3 – Certifiable procedural skills , OSCE 4 – AETCOM related skills

Internal Assessment Examination (I, II and III) Pediatrics

Instructions:

SECTION "A" MCQ

- 1) Put in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **One mark**.
- 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10 Marks)

1. Multiple Choice Questions (Total 10 MCQ of One mark each) (_10_x_1=_10_)
- a) b) c) d) e) f) g) h) i) j)

SECTION "B" & "C"

- Instructions:**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Use a common answerbook for all sections.

SECTION "B" (20 Marks)

- 2 Short Answer Questions (Five marks each) (Any 5 out of 6) (5x5= 25)

a) b) c) d) e) f)

- 3 Long Answer Questions (15x1=15)

a)

MUHS Final Theory Examination

Paediatrics

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK FORMAT / SKELETON OF QUESTION PAPER

Instructions:

SECTION "A" MCQ

- 5) Put in the appropriate box below the question number once only.
- 6) Use blue ball point pen only.
- 7) Each question carries **One mark**.
- 8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (1x20=20)
- a) b) c) d) e) f) g) h) i) j)
- k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

- 1) Use **blue/black** ball point pen only.
- 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) **All questions are compulsory**.
- 4) The number to the **right** indicates **full marks**.
- 5) Draw diagrams **wherever** necessary.
- 6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions (Any 2 out of 3) structured clinical questions (15 x 2=30)
- a) b) c)
3. Short Answer Questions (All 3),(including 1 on AETCOM) (5 x 3=15)
- a) b) c)

SECTION C (40 Marks)

- 4 Long answer questions (15x1=15)
- a)
- 5 Short answer questions(any 4 out of 5) (Clinical Reasoning) (5x4=20)
- a) b) c) d) e)

Journal of Paediatrics

College Logo	NAME OF THE COLLEGE DEPARTMENT OF PAEDIATRICS	MUHS,Nasi kLogo
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Journal of Paediatrics

Name of the Student: - _____
Batch Year: - _____
Roll No. :- _____
Phase: II (Year-)
Phase: III-I (Year-)
Phase: III-II (Year-)

College Logo	NAME OF THE COLLEGE DEPARTMENT OF PAEDIATRICS	MUHS,Nasi kLogo
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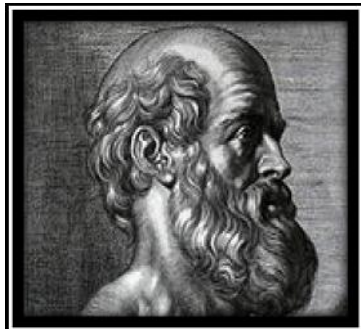
POSTING CERTIFICATE

Date- / /

Term	From	To	Absent days	Case- Histories Written	Skills achieved	Remark	Signature of Unit Head
Phase: II (2 weeks)							
Phase: III-I (4 weeks)							
Phase: III-II (4 weeks)							
Date- Name of college- Seal-				- Signature- Professor and Head Department of Paediatrics.			

Note-

- Students must get the signature of the Unit In charge when posting is completed.
- This certificate must be submitted before every Internal assessment and Preliminary examination.
- Completed Record is Mandatory for appearing for the Final Examination.



HIPPOCRATIC OATH

“I swear by Apollo, the healer, Asclepius, Hygieia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment, the following Oath and agreement:

To consider dear to me, as my parents, him who taught me this art; to live in common with him and, if necessary, to share my goods with him; To look upon his children as my own brothers, to teach them this art; and that by my teaching, I will impart a knowledge of this art to my own sons, and to my teacher's sons, and to disciples bound by an indenture and oath according to the medical laws, and no others.

I will prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone.

I will give no deadly medicine to any one if asked, nor suggest any such counsel; and similarly I will not give a woman a pessary to cause an abortion.

But I will preserve the purity of my life and my arts.

I will not cut for stone, even for patients in whom the disease is manifest; I will leave this operation to be performed by practitioners, specialists in this art.

In every house where I come I will enter only for the good of my patients, keeping myself far from all intentional ill-doing and all seduction and especially from the pleasures of love with women or men, be they free or slaves.

All that may come to my knowledge in the exercise of my profession or in daily commerce with men, whom ought not to be spread abroad, I will keep secret and will never reveal.

If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all humanity and in all times; but if I swerve from it or violate it, may the reverse be my life.



MEDICAL STUDENT

“The medical student must exhibit a calm and generous disposition, besides being virtuous and of noble mind.

He must be tolerant of others and exhibit patience and perseverance in his academic pursuits.

Although of sharp intellect, he must be both rotational and modest.

He should possess a pleasant appearance and good looks, well-proportioned body which should free from physical defect or obvious diseases.

Above all, he must be compassionate.

He must exhibit deep interest in the art and science of healing.

He must use his intelligence to discuss facts about the disease and to understand the clinical significance of symptoms.

Such knowledge he must use not only for his own intellectual enrichment, but also for acquiring requisite skills in practical management.

He must be humble and loyal to his teachers and instructors.

He should be free from any addictions, greed, arrogance, and intolerance.”

- Charaka Samhita (1000 BC)

Sequence of workbook

No	Topic	Page no.
	Hippocratic Oath	-
	Medical Students	-
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2	Index	08
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E.	Emergency Cases Observed	24
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GENERAL INSTRUCTIONS

1. This Journal is a record of the academic activities of the designated student, who would be responsible for maintaining his/her Journal.
 2. The student is responsible for getting the entries in the Journal verified by the Faculty in charge regularly.
 3. Entries in the Journal will reflect the activities undertaken in the department and have to be scrutinized by the Head of the concerned department.
 4. The Journal is a record of various activities by the student like:
 - Overall participation and performance
 - Attendance
 - Participation in sessions
 - Record of completion of pre-determined activities.
 - Acquisition of selected competencies.
 5. The Journal is the record of work done by the candidate in that department / specialty and should be verified by the college before submitting the application of the students for the University examination.
 6. Proposed number of cases records should be mentioned in the journal:-
 - Phase: II- first clinical posting (Two weeks)-
 - Phase: III-I-second clinical posting in Third Minor (Four weeks)-
 - Phase: III-II Third Clinical posting in Third Major (Four weeks)-
-

INDEX

1. Long Cases:

Sr. No.	Date	Name of Patient	Diagnosis	Page No.	Sign of Teacher
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

2. Short Cases:

Sr. No.	Date	Name of Patient	Diagnosis	Page No.	Sign of Teacher
1					
2					
3					
4					
5					
6					

3. New Born Cases:

Sr. No.	Date	Name of Patient / New Born	Diagnosis	Page No.	Sign of Teacher
1					
2					
3					
4					
5					
6					

4. Immunization O.P.D. attended:

Sr. No.	Date	Immunization Attended	Sign of Teacher
1			
2			
3			
4			
5			

5. Procedures observed:

Sr. No.	Date	Name of Procedure Observed	Sign of Teacher
1			
2			
3			
4			
5			

6. Emergencies attended:

Sr. No.	Date	Name of Patient	Diagnosis	Sign of Teacher
1				
2				
3				
4				
5				

7. Drug information:

Sr. No.	Date	Name of Drugs	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

8. Nutrition-

Sr. No.	Date	Name of food item	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

9. X-Ray

Sr. No.	Date	Diagnosis of X-Ray	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

10. Instruments-

Sr. No.	Date	Name of Drugs	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Template for Clinical Cases of Paediatrics

A. LONG CASE-

Informant-

Reliability – Good/Bad, consistent/ non consistent

OPD/IPD no.-

Name of the child-

Birth date- / /

Age -

Gender - M/F

Religion and caste.

Address-

Date of admission- / /

Date of examination- / /

- **Chief Complaints** – (in chronological order)

1)

2)

- **History of Present Illness** –

- **Past History** –

- **Personal History** -

Bladder-

Bowel-

Sleep-

Appetite-

Addictions-

Habits-

Menstrual cycle-

Relation with friends-

Sports participation-

- **Family history- Pedigree chart:**

- **Birth History-**

- Antenatal history -

- Age of mother at marriage-
- Age of mother at pregnancy-
- Registration of pregnancy.
- Medication taken like iron, folic acid and calcium-
- Drug intake during pregnancy -
- Immunization of mother –
- History of trauma.
- Any illness or infection-
- Radiation exposure-
- Hospitals stay during pregnancy.
- History of smoking, drinking alcohol, any other-

- Natal history –

- Gestational age-
- Duration of Labor-

- Place of delivery- Home/ Hospital
- Person conducting the delivery-
- Mode of delivery-
- Babies cry immediately after birth-
- Birth weight of the baby-
- Date and time of birth-
- Any congenital malformation noted
- Post-natal history
- Neonatal history -
 - Time of first breast feeding-
 - Top feeds given-
 - Any feeding difficulty-
 - Prelacteal feeds given-
 - NICU stay-
 - Time of passage of first meconium- urine-
 - History of neonatal convulsions or jaundice-

• **Developmental history-**

- 1) Motor milestones-
 - ✓ Gross motormilestones
 - ✓ Finemotormilestones
- 2) Adoptive milestones-
- 3) Social milestones
- 4) Language milestones-

• **Immunization History –**

BCG- given/ not, Scar- present/absent	OPV 0, 1,2, 3, booster
DPT- 1,2 3, booster	Measles
Vitamin-A	MMR-
Other vaccines-	

• **Dietary History-**

Protein intake– Actual-----Expected-----
 Calorie intake- Actual-----Expected-----

• **Socioeconomic History -**

Total no. of members in the family-
 Floor space area-
 Per capita income-
 Education of the Father ----- Mother-----
 Occupation of the Father ----- Mother-----
 Housing type- kaccha/pakka
 Ventilation- Water supply-
 Sanitation – toilet facilities / open air defecation.
 Socio economic status.-

b. Hair-

Colour- Texture Pigmentation-
Luster - Hair line –Low/normal/high

c. Face-

d. Eyes-

- Eyelids- Intercanthal distance-
- Eyebrows- Eyelashes-
- Conjunctiva- Cornea –
- Lens- Sclera-
- Fundus Conjunctiva -

e. Ear-

- Setting of ears –Low/normal Ear tag –
- Large prominent ear- Pinna –
- External auditory canal- Tympanic membrane

f. Mouth-

- Oral cavity- Buccal mucosa-
- Dentition: Gums:
- Tongue : Examination of throat-
- Lips : Cyanosis- Philtrum- other-
- Tonsil- Uvula-
- Posterior pharyngeal wall-

g. Neck-

- Swelling of neck : Webbing of neck
- Enlarged distended neck veins- Short neck
- cervical group of lymph nodes- Thyroid gland-
- Position of trachea - Neck stiffness

h. Skin-

- Colour- Turgor- Infections - Rash
- Subcutaneous nodules- Xanthoma and xanthelasma- Stria-

i. Hand-

- Congenital malformation -
- Single Palmar crease -
- Finger – Clubbing- Nails-

j. External genital –

- Tanner staging sexual maturity score-
- Penile length:

k. Bones, Joints, Spine and Back-

l. Any Obvious Congenital Anomalies:

**Systemic Examination:
Provisional Diagnosis-**

- 1)
- 2)
- 3)
- 4)

Investigations-

Final Diagnosis-

Treatment-

Case Summary-

Date-

Signature of Teacher

B. SHORT CASE

- Informant-
- Reliability –
- Consistent/ non consistent
- OPD/IPD no.-
- Name of the child-
- Birth date- / / Age -
- Gender - M/F Religion and caste.
- Address –
- Date of admission- / / Date of examination- / /

Chief Complaints – (in chronological order)

- 1)
- 2)
- 3)

General Examination:

- **Anthropometry:**

No.	Parameter	Actual	Expected
1	Weight		
2	Height / Length:		
3	Head circumference:		
4	Chest circumference:		
5	Mid arm circumference:		
6	Upper segment: lower segment ratio:		
7	Body mass index-		
8	Arm span-		
9	Midpoint of stature-		

- **Vital Parameters: -**

1. Temperature: -----F/ -----C

2. Pulse –

- Rate- beats/min. Rhythm-Regular /Irregular
- Character- Volume-
- Radiofemoral Delay- Capillary refill-

3. Respiration- Rate---- - cycles/min

4. Blood pressure -

- Right upper limb- / mmHg Left upper limb- / mmHg
- Right lower limb- / mmHg Left lower limb- / mmHg

- Finger –Clubbing- Nails

j. External Genitale –
Tanner staging sexual maturity score-
Penile length:

k. Bones, Joints, Spine and Back-

l. Any Obvious Congenital Anomalies:

Systemic Examination-

Provisional Diagnosis-

- 1)
- 2)
- 3)
- 4)
- 5)

Investigations-

Final Diagnosis-

Treatment-

Case Summary-

Date-

Signature of Teacher

C. NEONATAL CASE

OPD/IPD NO. - _____ Date- _____
Name of mother- _____
Name of father- _____
Date of delivery- _____
Sex of baby- m/f _____ caste /religion- _____
Place of delivery- _____ date of examination- _____

Maternal History-

Antenatal history -

- Age at marriage- _____ Age at pregnancy- _____
- Registration of pregnancy- _____ P- _____ , G- _____ , L- _____ , A- _____
- Family history- _____
- Consanguinity- yes/no _____ grade- _____
- Medication taken like iron, folic acid and calcium supplements- _____
- Drug intake during pregnancy – _____
- Immunization status of mother – _____
- Any illness or infection during pregnancy – _____
- Radiation exposure- _____ Hospitals stay during pregnancy- _____
- History of smoking, drinking alcohol, any other.- _____
- History of trauma- _____

Natal history –

- Apgar score- _____
- Gestational age- _____ Duration of Labor- _____
- Place of delivery- Home/ Hospital _____
- Person conducting the delivery-Mode of delivery- _____
- Babies cried immediately after birth- _____
- Birth weight of the baby- _____
- Date and time of birth- _____
- Any congenital malformation noted- _____

Postnatal history –

Neonatal history -

- Time of first breast feeding- _____
- Top feeds given- _____
- Any feeding difficulty- _____
- Pre-lacteal feeds given- _____
- NICU stay- _____
- Time of passage of first meconium- _____ first urine- _____
- History of convulsions or jaundice- _____
- Inj. Vit. K given/not- _____
- Any other problems- _____

Feeding History -

Immunization History –

- BCG- OPV ‘0’ dose Any Other vaccines-

General Examination:

Anthropometry:

No.	Parameter	Actual	Expected
1	Weight		
2	Length		
3	Head circumference:		
4	Chest circumference:		

Vital Parameters: -

1. Temperature: -----F/ -----C

2. Pulse –

- Rate- beats/min.
- Rhythm-Regular /Irregular
- Character-
- Volume-
- Radio-femoral Delay-
- Capillary refill-

3. Respiration-Rate---- - cycles/min

4. Blood Pressure -

- Right upper limb- / mmHg
- Left upper limb- / mmHg
- Right upper limb- / mmHg
- Left upper limb- / mmHg

5.Pulse Oximetry- (Pre and Post Ductal Saturation)

Head to Toe Examination-

a) Head-

- Size- normal/ microcephaly/macrocephaly Shape-
- Cephalic index-
- Craniosynostosis- Bossing / prominence-
- Fontanel- anterior- open (size-)/closed
- Post. Frontanelle- (size-)/closed
- Scalp swelling - Transillumination of skull

b) Hair-

- Colour- Texture Pigmentation-
- Luster - Hair line –Low/normal/high

c) Face-

d) Eyes-

- Eyelids- Intercanthal distance-
- Eyebrows- Eyelashes-

- 14) Plantar & palmar grasp:
- 15) Crossed adductor reflex: :
- 16) Magnet reflex:
- 17) Asymmetric tonic neck reflex:-
- 18) Symmetric tonic neck reflex:-
- 19) Pull-to-sit-
- 20) Babinski or plantar reflex :-
- 21) Righting reflexes-

Systemic Examination—

Provisional Diagnosis-

1)

2)

Investigations-

Final Diagnosis-

Treatment-

Case Summary-

DateSignature of Teacher

D. IMMUNIZATION O.P.D. ATTENDED

Date-

Name of vaccine –

Dose-

Route-

Special precautions-

Indications-

Contraindications-

Side effects-

Storage-

Any other Details of vaccine-

Sign of vaccinator-

Paste picture of
vaccine

- Rate- beats/min. Rhythm-Regular /Irregular
- Character- Volume-
- Radio femoral Delay- Capillary refill-

3. Respiration-Rate---- - cycles/min

4. Blood Pressure -

- Right upper limb- / mmHg Left upper limb- / mmHg
- Right upper limb- / mmHg Left upper limb- / mmHg

5. Jugular Venous Pressure-

Head to Toe Examination- Any positive findings

Systemic Examination- positive findings only

Details of emergency attended

Final Diagnosis-

Treatment-

Case Summary-

Date-

Signature of Teacher

F. PAEDIATRIC PROCEDURES OBSERVED

Requires certification-

- Anthropometry
- Development assessment
- Breast feeding, observation and counseling
- BMI calculation
- Prescription of Immunizations schedule
- Naso-gastric tube passage in manikin
- IV line in manikin
- Interosseous insertion in manikin
- Airway management
- Oxygen administration
- Bag ventilation
- Monitoring of shock
- IV access
- Calculation of fluid requirements
- Monitoring of unconscious
- Dehydration assessment
- BLS in manikin
- Urine dipstick
- Identification of BCG scar
- Interpret Mantoux

Following procedures to be only observed-

- Lumbar Puncture
- Liver biopsy
- Renal biopsy
- Bone marrow
- Bladder Catheterization
- Peripheral IV Insertion
- Insertion of Umbilical Venous and Arterial Lines
- Insertion of Naso -Gastric Feeding Tubes/Ryles tube
- Neonatal Intubation
- Neonatal Resuscitation
- Pediatric Resuscitation
- Intramuscular, intra-dermal, subcutaneous injections
- Bag and mask use

Template-

Name of Procedure

- OPD/IPD no.-
- Name of the child-

G. COMMON DRUGS USED IN PAEDIATRICS

- **Name of drug-**
- **Class/ Group of Drug-**
- **Doses-**
- **Mechanism of action-**
- **Uses-**
- **Side effects-**
- **Contraindications-**
- **Any other-**

Paste picture of
drug here

Date-

Signature of Teacher

H. INSTRUMENTS USED IN PAEDIATRICS

Name of instrument-

Uses-

Precautions-

Describe procedure where it is used-

Any other –

Sign of Teacher

Photograph of
Instrument

I. NUTRITION RELATED TO PAEDIATRICS

Name of food item-

Class-

Photograph

Nutritive contents –

Nutritive values-

Medicinal use-

Contraindications

Any other details-

Sign of Teacher-

Annexure- 1.--

Course Content Phase II(October 2020)

Subject: PAEDIATRICS

Theory / Practical

(Based on National Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / 3.)

1. Total Teaching hours:

A. Lectures(hours): **No**

B. Self-directed learning (hours):

C. Clinical Postings(hours):

- Weeks- 2 wks
- Hours per week-15
- Monday to Friday- 3 hours per day.

D. Small group teachings/tutorials/Integrated teaching/Practical(hours):No

Tentative Clinical posting schedule-

Day	Topic	Day	Topic
1	Round to Paediatric ward, Maternal ward, Kangaroo Mother Care, PICU, NICU, Labour room, OPD, Immunisation room etc.	6	Systemic examination of child- CVS
2	History taking in Paediatrics	7	Systemic examination of child- RS and PA
3	Assessment of growth and development	8	Neonatal examination
4	General examination of child.	9	Elicitation of neonatal reflexes
5	Systemic examination of child- CNS	10	Posting ending exam

Competency Nos.	Topics, Subtopics and Lectures

Annexure- 2.

Course Content Phase III-I(October 2020)

Subject: PAEDIATRICS (Theory / Practical)

(Based on National Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / 3.)

Total Teaching hours:

A. Lectures (hours): 20

B. Self-directed learning (hours): 5

C. Clinical Postings (hours):

- Weeks- 4
- Hours per week- 15
- Monday to Friday- 3 hours per day.

D. Small group teachings/tutorials/Integrated teaching/Practical (hours): **30**

Tentative Clinical posting schedule-

Day	Topic	Day	Topic
1	Round to Paediatric ward, Maternal ward, Kangaroo Mother Care, PICU, NICU, Labour room, OPD, Immunisation room etc.	11	Elicitation of neonatal reflexes
2	History taking in Paediatrics	12	Immunisation clinic
3	Assessment of growth and development	13	Immunisation clinic
4	General examination of child.	14	Immunisation clinic
5	Systemic examination of child- CNS	15	Immunisation clinic
6	Systemic examination of child- CNS	16	Paediatric Emergencies
7	Systemic examination of child- RS	17	Paediatric Emergencies
8	Systemic examination of child- Per Abdomen	18	Paediatric Emergencies
9	Systemic examination of child- CVS	19	Paediatric Emergencies
10	Neonatal case taking and examination.	20	Posting ending exam

Competency Nos.	Topics, Subtopics and Lectures

Annexure- 3.

Course Content Phase: III-II(October 2020)

Subject: PAEDIATRICS (Theory / Practical)

(Based on National Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / 3.)

Total Teaching hours:

A. Lectures (hours): 20

B. Self-directed learning (hours): 10

C. Clinical Postings (hours):

- Weeks- 4
- Hours per week- 15
- Monday to Friday- 3 hours per day.

D. Seminars/Small group teachings/tutorials/Integrated teaching/Practical (hours): 35

Tentative Clinical posting schedule-

Day	Topic	Day	Topic
1	History taking and General examination of child.	11	Neonatal case taking, examination and Elicitation of neonatal reflexes
2	Systemic examination of child- CNS	12	Demonstration of Common procedures related to Paediatrics
3	Systemic examination of child- CNS	13	Demonstration of Common procedures related to Paediatrics
4	Systemic examination of child- RS	14	Common Drugs used in Paediatrics
5	Systemic examination of child- Per Abdomen	15	Common Drugs used in Paediatrics
6	Systemic examination of child- CVS	16	Common Instruments used in Paediatrics
7	Systemic examination of child- CVS	17	X-Ray film reading related to Paediatrics.
8	Short case discussion	18	Nutrition
9	Neonatal case taking, examination and Elicitation of neonatal reflexes	19	Nutrition
10	Neonatal case taking, examination and Elicitation of neonatal reflexes	20	Posting ending exam

Competency Nos.	Topics, Subtopics and Lectures
-----------------	--------------------------------

Annexure- 4.
Exam Pattern – Paediatrics

Theory Paper (100 marks)

- Section A- MCQ:-
- Section B-
- Section C-

Practical exam (100 marks)

- Long case-
- Short case/ New born-
- Table viva- (Drugs, Instruments, Nutrition, Vaccines and X-Rays-
- OSCE-

Internal Assessment:

- 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University

University Examination

- Mandatory 50% marks separately in theory and practical (practical = practical/ clinical + viva)
-

Annexure- 5
Distribution of journal marks
Total- 10 marks

Parameter	Total	Marks	Phase
Long cases	-	-	Phase: II (Second year)
	6 (CNS-2, RS-1, PA-1, CVS-2)	1	Phase: III-1 (Third Minor)
	66 (CNS-2, RS-1, PA-1, CVS-2)	1	Phase: III-II (Third Major)
Short cases	3	1/2	Phase: II (Second year)
	3	1/2	Phase: III-1 (Third Minor)
	3	1/2	Phase: III-II (Third Major)
Newborns	3	1/2	Phase: II (Second year)
	3	1/2	Phase: III-1 (Third Minor)
	3	1/2	Phase: III-II (Third Major)
Emergencies	5	1	Phase: III-1 (Third Minor)
Procedures	5	1	Phase: III-II (Third Major)
Vaccines	All vaccines as per Government of India.	1	Phase: III-I
Drugs	10	1	Phase: III-II
Instruments	10	1/2	Phase: III-II
Nutrition	10	1/2	Phase: III-II
Total- 10 marks			

Recommended books

Sr.no.	Author	Title of book/ Material	Publisher
1.	Vinod Paul, Arvind Bagga	Ghai Essential Pediatrics	CBS Publishers
2.	Meherban Singh	Pediatric Clinical Methods	CBS Publishers
3.	Michael Glynn William M Drake	Hutchison's Clinical Methods	Elsevier
4.	A Parthasarathy	IAP Colour Atlas of Pediatrics	Jaypee
5.	Tom Lissauer Will Carroll	Illustrated Textbook of Pediatrics	Elsevier
6.	Meherban Singh	Care of newborn	CBS Publishers

PEDIATRICS (CODE: PE) IN GENERAL

Competencies: The student must demonstrate:

1. Ability to assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal,
2. Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate,
3. Ability to perform procedures as indicated for children of all ages in the primary care setting,
4. Ability to recognize children with special needs and refer appropriately,
5. Ability to promote health and prevent diseases in children,
6. Ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy,
7. Ability to communicate appropriately and effectively.

Integration: The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for neonates, infants, children and adolescents based on a sound knowledge of growth, development, disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

Table 1: Time distribution of MBBS Programme & Examination Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
							Foundation Course	I MBBS			
I MBBS								Exam I MBBS	II MBBS		
II MBBS								Exam II MBBS	III MBBS		
III MBBS Part I									Exam III MBBS Part I	Electives & Skills	
III MBBS Part II											
Exam III MBBS Part II	Internship										
Internship											

- One month is provided at the end of every professional year for completion of examination and declaration of results.

Table 2: Distribution of subjects by Professional Phase

Phase & year of MBBS training	Subjects & New Teaching Elements	Duration#	University examination
First Professional MBBS	<ul style="list-style-type: none"> • Foundation Course (1 month) • Human Anatomy, Physiology & Biochemistry, introduction to Community Medicine, Humanities • Early Clinical Exposure 	1 + 13 months	I Professional
	<ul style="list-style-type: none"> • Attitude, Ethics, and Communication Module (AETCOM) 		
Second Professional MBBS	<ul style="list-style-type: none"> • Pathology, Microbiology, Pharmacology, Forensic Medicine and Toxicology, • Introduction to clinical subjects including Community Medicine • Clinical postings • Attitude, Ethics & Communication Module (AETCOM) 	12 months	II Professional
Third Professional MBBS Part I	<ul style="list-style-type: none"> • General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radiodiagnosis & Radiotherapy, Anesthesiology • Clinical subjects /postings • Attitude, Ethics & Communication Module (AETCOM) 	13 months	III Professional (Part I)
Electives	<ul style="list-style-type: none"> • Electives, Skills and assessment* 	2 months	
Third Professional MBBS Part II	<ul style="list-style-type: none"> • General Medicine, Pediatrics, General Surgery, Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties • Clinical postings/subjects • Attitude, Ethics & Communication Module (AETCOM) 	13 months	III Professional (Part II)

*Assessment of electives shall be included in Internal Assessment.

Table 6: Third Professional Part I teaching hours

Subjects	Teaching Hours	Tutorials/ Seminars /Integrated Teaching (hours)	Self- Directed Learning (hours)	Total (hours)
General Medicine	25	35	5	65
General Surgery	25	35	5	65
Obstetrics and Gynecology	25	35	5	65
Pediatrics	20	30	5	55
Orthopaedics	15	20	5	40
Forensic Medicine and Toxicology	25	45	5	75
Community Medicine	40	60	5	105
Dermatology	20	5	5	30
Psychiatry	25	10	5	40
Respiratory Medicine	10	8	2	20
Otorhinolaryngology	25	40	5	70
Ophthalmology	30	60	10	100
Radiodiagnosis and Radiotherapy	10	8	2	20
Anesthesiology	8	10	2	20
Clinical Postings*	-	-	-	756
Attitude, Ethics & Communication Module (AETCOM)		19	06	25
Total	303	401	66	1551

* The clinical postings in the third professional part I shall be 18 hours per week (3 hrs per day from Monday to Saturday).

Table 7: Third Professional Part II teaching hours

Subjects	Teaching Hours	Tutorials/Seminars / Integrated Teaching (hours)	Self - Directed Learning (hours)	Total* (hours)
General Medicine	70	125	15	210
General Surgery	70	125	15	210
Obstetrics and Gynecology	70	125	15	210
Pediatrics	20	35	10	65
Orthopaedics	20	25	5	50
Clinical Postings**				792
Attitude, Ethics & Communication Module (AETCOM)***	28		16	43
Electives				200
Total	250	435	60	1780

* 25% of allotted time of third professional shall be utilized for integrated learning with pre- and para- clinical subjects and shall be assessed during the clinical subjects examination. This allotted time will be utilized as integrated teaching by para-clinical subjects with clinical subjects (as Clinical Pathology, Clinical Pharmacology and Clinical Microbiology).

Table 8: Clinical postings

Subjects	Period of training in weeks			Total weeks
	II MBBS	III MBBS Part I	III MBBS Part II	
Electives	-	-	8* (4 regular clinical posting)	4
General Medicine ¹	4	4	8+4	20
General Surgery	4	4	8+4	20
Obstetrics & Gynaecology ²	4	4	8 +4	20
Pediatrics	2	4	4	10
Community Medicine	4	6	-	10
Orthopedics - including Trauma ³	2	4	2	8
Otorhinolaryngology	4	4	-	8
Ophthalmology	4	4	-	8
Respiratory Medicine	2	-	-	2
Psychiatry	2	2	-	4
Radiodiagnosis ⁴	2	-	-	2
Dermatology, Venereology & Leprosy	2	2	2	6
Dentistry & Anesthesia	-	2	-	2
Casualty	-	2	-	2
	36	42	48	126

* In four of the eight weeks of electives, regular clinical postings shall be accommodated.

Clinical postings may be adjusted within the time framework.

¹ This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I).


² This includes maternity training and family welfare (including Family Planning).

³ This posting includes Physical Medicine and Rehabilitation.

⁴ This posting includes Radiotherapy, where ver available.

List of abbreviations

A	Attitude
AETCOM	Attitude Ethics and Communication
Anat	Anatomy
Biochem	Biochemistry
Cardio	Cardiology
Com Med	Community Medicine
Derm	Dermatology
DOAP	Demonstrate Observe Assist Perform
ENT	ENT
Forensic	Forensic Medicine
Gastro	Gastroenterology
K	Knows
KH	Know How
S	Shows
C	Communication
Med	Gen Medicine
Micro	Microbiology
N	No
OBG	Obstetrics & Gynecology
Ophthal	Ophthalmology
OSCE	Objective Structured Clinical Examination
OSPE	Objective Structured Practical Examination
Psych	Psychiatry
PMR	Physical Medicine Rehabilitation
Path	Pathology
Physio	Physiology
Pharm	Pharmacology
SAQ	Short Answer Question
SGD	Small Group Discussion
Surg	Gen Surgery
RadioD	Radio diagnosis
Resp Med	Respiratory Medicine
Y	Yes

 Pages for all the phases will be added and color coded as follows-
 Phase II : yellow
 Phase III-I: Green
 Phase III-II: Brown.

**PAEDIATRIC LOGBOOK for MBBS STUDENTS AS PER COMPETENCY BASED
CURRICULUM
PHASE II to PHASE III/II MBBS**

Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize “**Health for all**” as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching learning strategies for the same. With this goal in mind, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency Based curriculum.

Name of the College

Admission Year: _____

CERTIFICATE

This is to certify that,

Mr/Ms. _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for MBBS Competency Based Curriculum in the subject of PAEDIATRICS

Date: ___/___/_____

Place: _____

Teacher In charge

Professor and Head

Department of PAEDIATRICS

Instructions

- 1) This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for MBBS students in the subject of Paediatrics.
- 2) Students are instructed to keep their logbook entries up to date.
- 3) Students are expected to write minimum 2 reflections on any two activities each of Clinical Paediatrics skills & Self-Directed Learning (SDL).
- 4) Students also have to write reflections on AETCOM Module. Reflections should be structured using the following guiding questions:
 - What happened? (What did you learn from this experience)
 - So what? (What are the applications of this learning)
 - What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)
- 5) The logbook assessment will be based on multiple factors like
 - Attendance
 - Active participation in the sessions
 - Timely completions
 - Quality of write up of reflections
 - Overall presentation

INDEX

Sr. No	Description	Page No's	REMARK	Signature of Teacher
1	Clinical Paediatrics Skills			
2	Self-Directed Learning, Seminars, Projects, Quizzes			
3	AETCOM Module			
4	Attendance Records			
5	Records of Internal Assessment			

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

Record of Clinical Pediatrics Skills

Clinical skills can be assessed by case presentation, case based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

I) SECOND PHASE MBBS

Competency # addressed	Name of activity	Site WARD, skill lab, OPD, Casualty ,	Date completed	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	Method of assessment	SCORE

II) THIRD PHASE MBBS PART I

Competency # addressed	Name of activity	Site WARD, skill lab, opd casualty,	Date comple ted	Attempt at activity First (F) Repeat (R)	Sign of facult y	Sign of Learner	Method of assessment	SCORE

II) THIRD PHASE MBBS PART II

Competen cy # addressed	Name of activity	Site WARD, skill lab, OPD, casualty ,	Date complet ed	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	Method of assessment	SCOR E

Reflection on Clinical Paediatrics Skills

Topic:

Date:

Signature of Teacher-in- charge

Reflection on Clinical Paediatrics Skills

Topic:

Date:

Signature of Teacher-in- charge

Reflection on Clinical PAEDIATRICS Skills

Topic:

Date:

Signature of Teacher-in- charge

2. Self Directed Learning, Seminars, Tutorials, Projects, Quizzes

S.No	PHASE	Self Directed Learning, Seminars, Tutorials, Projects, Quizzes	Date	Signature of Teacher

Reflection on self directed learning activities

Topic:

Date:

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic:

Date:

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic:

Date:

Signature of Teacher-in- charge

3: AETCOM Module

Counselling for Investigation, Treatment, Prognosis, Blood donation, Breaking Bad news.
All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria	Phase II Score	Phase III/I Score	Phase III/II Score	
Builds relationship				
Opens the discussion				
Gathers information				
Understands the parent's perspective				
Shares information				
Manages flow				
Overall rating				
Signature of teacher				

Communication skills rating scale adapted from Kalamazoo consensus statement

Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

PHASE II- AETCOM (Two assessments)

Competency # addressed	Name of competency	Site WARD, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	Method of assessment	SCORE

PHASE III PART 1 (TWO ASSESSMENTS)

Competency # addressed	Name of Competency	Site WARD, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	Method of assessment	SCORE

PHASE III PART 2 (TWO ASSESSMENTS)

Competency # addressed	Name of Competency	Site WARD, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	Method of assessment	Score

Reflection on AETCOM module

Topic:

Date:

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic:

Date:

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic:

Date:

Signature of Teacher-in- charge

4A: Attendance Record of the Student

S. No	Term	Theory (%)	Practical (%)	Signature of the Student	Signature of the Teacher
A	II PHASE				
B	III PHASE PART 1				
C	III PHASE PART 2				
E	OVER ALL ATTENDANCE				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

SECTION 4B: Details of attending extra classes [For poor attendance (if any)]

S.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Section 5. Records of Internal Assessment Examinations

Records of Internal Assessment examinations

S.No	Exam	Theory	Practical including log book	Signature of student	Signature of Teacher
1	I Internal Assessment	/50	/ 50		
2	II Internal Assessment	/ 50	/ 50		
3	III Internal Assessment	/ 50	/ 50		
4	IV Internal Assessment (Prelim)	/100	/100		
4	Internal Assessment marks	/ 250	/ 250		
5	Converted marks	/25	/25		
	Total Converted marks	/50			

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.