TO BE CIRCULATED TO COLLEGES CONDUCTING PG COURSE
CURRICULUM

M. D. HUMAN PHYSILOGY

POST GRADUATE TEACHING / TRAINING COURSE FOR M.D.DEGREE

I. GOAL

The aim of the course is to prepare P.G. Student in the subject of Human Physiology who shall

1) Teach and train future under-graduate & Post-graduate medical students in Human Physiology in Medical Colleges and Research Institutions.

2) Carry out & guide research & contribute to advancement of the subject.

3) Organise & manage administrative responsibilities for routine day to day departmental work.

LEARNING OBJECTIVES

At the end of training course a P.G. student have thorough knowledge of the body with respect to

1) Cognitive domain

All the systems of the body should be studied with respect to –

a) Historical aspect
b) Evolution & development
c) Comparative physiology
d) Structure – gross & electron microscopic & functions at cellular level.
e) Qualitative & quantitive aspects
f) Regulating mechanisms.
g) Variations in physiological & pathological conditions
h) Applied physiology
i) Recent advances.

2) Psychomotor domain
P.G.Students should be able –
a) to perform human & animal experiments, Haematology experiments & experiments based on biophysical principles.
b) To acquire history taking & clinical examination skills.

3) Affective domain

a) The P.G.Students should develop communication skills to interact with students, colleagues, superiors & other staff members.
b) They should be able to work as a member of a team to carry out teaching as well as research activities.
c) They should have right attitude towards teaching profession.

II. COURSE DISCRIPTION

1) Eligibility M.B.B.S.
2) Selection shall be through a competitive written examination of the objective variety conducted by state entrance board.
3) Duration of course shall be of 3 Years.

COURSE CONTENT

Since the students would be working in the department for 3 years, the time plan & proposed division of course content will be on the following lines.

1st Year :

1) Theory :

- To attend the U.G. lectures and study in detail the following topics:

Topics – General physiology, Environmental physiology, Nerve, Muscle, Blood, Endorcrines, Reproduction, Alimentry system.

- To attend P.G. lectures at other P.G.Centres.

2) Practicals –

- To attend the practicals & demonstrations tought by senior teachers for U.G.Students.

1st term – Haematology, Nerve, Muscle, Heart.
2nd term – clinical examination.

- To learn basic techniques & instruments used for U.G. Practicals.
- Micro teaching sessions for practicals.

3) To learn evaluation techniques.

4) Research :

- To attend Jornal club / seminars.
- Vists to library to get aquainted with scientific journals.
- 2nd half of 1st year – review of literature for topic of thesis.

5) Exposure to Medical Education Technology Workshops.

2nd Year :

1) Theory :

- To attend the U.G. lectures and study in detail the following topics.

Topics – Renal physiology Cardio Vascular system.
Respiratory system, Exercise physiology, Special senses, Central Nervous System.

- To attend the P.G. lectures at other P.G.Centres.

2) Practicals :

- To perform amphibian & mammalian experiments, inclusive of basic techniques of handling of laboratory animals, anaesthia, dissection & instruments.

3) To learn in detail the teaching learning methods and the methods of evaluation in practicals & theory.

4) Teaching :

- Small group teaching in practicals / demonstrations.
- Should learn to use audiovisual aids.

5) Research :

- To carryout thesis work & to learn basic topics in statistics.

6) To attend meeting organised by clinical departments.
7) To attend local and national conferences.

3rd Year :

1) Research :

- Completion & submission of thesis in first 6 Months
- Writing articles for publication.

2) Teaching :

- To teach all practicals to U.G. Students.
- To conduct microteaching sessions for 1st year P.G. Students.
- To teach theory topics in small groups for U.G. Students.

3) Practicals :

- To carry animal experiments independently.

THEORY TOPICS :

In Addition to U.G. Syllabus

1) General Physiology :

- Biological membranes with details of membrane receptors.
- Physiology of growth & senescence.

2) Environmental Physiology :

- Physiology of deep sea diving.
- Space physiology
- High altitude physiology.
- Temp. regulation-Hypothermia, Hyperthermia.

3) Nerve :

- Experimental techniques to study bioelectrical phenomena (Voltage clamp technique, cathod ray oscilloscope, S.D.Curve, nerve, conduction studies)

4) Muscle :

- E. M. G. details.
- Smooth muscle.
- Pathophysiology of muscle disorders.

5) Blood :

- Immunity – details.
- Plasmin system
- Tissue typing.

6) Cardio Vascular System :

- Echocardigraphy & vector cardiography.
- Stress test.
- Cardiac catheterisation & other invasive procedures.
- Flowmeters.

7) Repiratory sustem :

- Lung function tests – details
- Blood Gas analysis.
- Hyperberic oxygen.

8) Endocrines :

- Radio immuno Eassay.

9) Reproductive System :

- Invitro Fertilization.
- Contraceptives – details
- Neonatal & Foetal physiology.

10) Alimentary System :

- Gastro intestinal hormones – details
- Gastro intestinal motility – details
- Absorption of nutrients.
- Renal Physiology :

- Artificial Kidney
- Acid – base balance – details
- Cystometry.

11) Central Nervous System :

- Higher function

(Speech, Memmory, Learning, Behavioural physiology, sleep & wakefulness.)

- Voluntary movements.
- Details of the following topics covering physiological anatomy, connection – Intrinsic, Extrinsic, Methods of study of functions with diagnostic techniques, functions.

i) Cerebral Cortex
ii) Basal ganglia
iii) Cerebellum
iv) Reticular formation.
v) Thalamus
vi) Hypothalamus
vii) A.N.S.
viii) Limbic System.

12) Special Senses :

- Audiometry
- Retinoscopy, Fundoscopy, Nystagmography
- Electrophysiology of retina, chochlea.

13) Exercise Physiology :

- Concept of health fitness
- Physical fitness, its components & evaluation.
- Adaptations due to prolonged conditioning.

14) Nutrition :

- Relationship of diet & diseases.

PRACTICALS :

In Addition to U.G. Syllabus

Mammalian experiments :

1) Recording of blood pressure & respiration in dog.

- Effects of Vagal stimulation and ablation.
- Effects of Asphyxia
- Actions of Adrenalin
- Actions of Acetylcholine
- Clamping of carotid arteries
- Circulatiory shock.

2) Perfusion of mammalian heart.

- Effects of Various factors.

3) Recording of smooth muscle activities & effects of various factors.

II. TEACHING LEARNING METHODS :

The teaching learning activities would consists of

1) Attending U.G. lectures.
2) Attending P.G. lectures.
3) Microteaching sessions.
4) Journal clubs moderated by teachers.
5) Seminars, symposia, panel discussion of suitable topics moderated by teachers.
6) Lectures & Practicals prepared & presented by students under supervision.
7) Attend & participate in conferences, workshops & share knowledge & experiences with others.
8) Visits to various clinical departments to gain the knowledge of various techniques used to study the functions of various systems.

Recommended reading :

Textbooks of physiology –

- Guyton
- Best & Taylor
- S. Wright
- Ganong
- Berne & Levy
- NMS Physiology
- Starling
- Monographs.

Journals –

- Annual review of physiology
- American J. of Phy.
- Physiological review
- Canadian J. of Phy. & Pharamcology
- Indian J. of Phy. & Pharm. & other related clinical Journals.

IV EVALUATION : (***As per Direction No. 01/2008 dtd. 26/05/2008 & practical scheme is as per revised practical marksheet.)***