

Ordinance Governing M.B.B.S. Degree Programme

Phase III : Clinical Subjects

2006



Rajiv Gandhi University of Health Sciences, Karnataka

4th 'T' Block, Jayanagar, Bangalore - 560 041



Rajiv Gandhi University of Health Sciences, Karnataka
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Ref.: US/Misc-47/2005-2006

Date : 22/03/2006

NOTIFICATION

Subject : Ordinance Governing MBBS course Phase III Clinical Subjects.

References :

1. Medical Council of India Regulations on Graduate medical Education - 1997.
2. University Notification No.ACA/BOS-27/1997-98 dated 24.03.1998 for Revised Ordinance Governing MBBS Degree Program Phase I.
3. University Notification No.ACA/BOS-27/1997-98 dated 20.03.1999 for Revised Ordinance Governing MBBS Degree Program Phase II.
4. University Notification of even number dated 28.08.2000 forwarding the syllabus of III MBBS Degree Program in Clinical Subjects.
5. University Notification No.UA/MBBS/ORD-3/2000-2001 dated 25.01.2001 for Revised Ordinance Governing MBBS Degree Program Phase III.
6. University Notification No.ACA/BOS-27/97-98 dated 25.09.2004 regarding Revised Ordinance Governing MBBS Degree Course - Phase I and Phase II subjects - 2004.
7. Amendment to the Regulations on Graduate Medical Education notified by Government of India from time to time Viz:
 - (i) Gazette Notification dated 29.05.1999,
 - (ii) Notification No.MCI-26(3)2003/Med-18503 dated 26.09.2003
 - (iii) Notification No.MCI-26(3)2003/Med-20958 dated 15.10.2003
8. Copy of letter DO. KSPCB/ BIO-MEDI/EO/DEO/AEO-1/2001-02/43 dated 06.04.2002. written by Chairperson of Karnataka State Pollution Control Board to the Vice Chancellor of RGLUHS regarding inclusion of Biomedical Waste in the MBBS curriculum.
9. Copy of letter written by Directorate of Medical Education, Bangalore addressed to Secretary Medical Council of India, New Delhi, vide No.SRO (2) / 18 / 2003-04 dated 28.06.2003 regarding implementation of Supreme Court directions of Mental Health programme - High Court Order on Writ Petition No.18741/96 (GM) and No.NCDP/HC/6/2003-04 dated 31.05.2003.
10. Minutes of the meetings of the Syndicate held on 25.02.2006.

PREAMBLE:

Ordinance Governing MBBS Phase III - Clinical Subjects was notified by RGUHS on 25.01.2001. It came into force for the batch of students admitted during academic year 1997-98 and onwards. The amendments made by Medical Council of India from time to time and additions of certain topics to the syllabi have been incorporated and the Ordinance is reprinted.

ORDINANCE:

In exercise of the powers conferred in section 35(1) of RGUHS, Act 1994, the syndicate in its meeting held on 25.02.2006 has approved the Ordinance Governing MBBS Programme Phase III - Clinical Subjects - 2006 as given in the schedule here to annexed. The Ordinance as above cited shall be applicable to the MBBS Phase III students from the academic session 2005-06 and onwards.

By Order
Sd/-
REGISTRAR

To,

The Principals of all Medical Colleges affiliated to Rajiv Gandhi University of Health Sciences,
Karrataka, Bangalore.

Copy to :-

1. The Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore-560 001, Secretary to Governor, Raj Bhavan, Bangalore - 560 001.
2. The Secretary to Government Department of Health and Family Welfare, Medical Education, Vikasa Soudha, Bangalore - 560 001.
3. All members of Syndicate / Senate / Academic Council of RGUHS.
4. PA to VC/Registrar / Registrar (Evaluation)/Finance officer.
5. Programmer, Computer Section for Notification in the University Home Page on the internet, for general information of all interested.
6. Consultant, CDC / DR Affiliation / DR Administration.
7. Guard File / Office Copy.

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INTRODUCTION

Medical Council of India (MCI) revised the M.B.B.S. curriculum. It came into effect from May 1997 (*Ref 1*). It was implemented by Rajiv Gandhi University of Health Sciences from the academic year of 1997-98 and onwards. In view of the new regulations, the University restructured the M.B.B.S. course and issued ordinance regarding Phase I and Phase II subjects (*Ref 2,3& 6*). Syllabi for Phase III subjects - Part I and II - of the course were notified in 2001 (*Ref 5*). The present volume is published incorporating the amendments made by Medical Council of India to the Regulations of MBBS course (*Ref.7*), and addition of certain topics to the syllabi (*Ref 8 & 9*). This Ordinance should be read with Revised Ordinance Governing MBBS Degree Course and Curriculum of Phase I and II subjects – 2004 (*Ref 6*).

The Part I subjects of Phase III consist of Ophthalmology, Otorhinolaryngology and continuation of Community Medicine from Phase II. The Part II subjects are Medicine and allied subjects, Surgery and allied subjects, Pediatrics and Obstetrics & Gynecology. The course description of Community Medicine has been given in the volume containing Phase II - Para Clinical subjects also. It has been repeated in this volume with revised scheme of examination.

In the Section I of this volume Goals of MBBS education is given. The Section II gives General objectives specified by MCI Regulations on Graduate Medical Education (1997). In the Section III, the duration of the course, recommendations regarding attendance, internal assessment, distribution of marks for professional examination subjects and criteria for pass for Phase III are given. The revised course contents, teaching schedule and scheme of examination of Phase III - Part I and Part II subjects - are detailed in Section IV. The section V contains the topics recommended for teaching of Medical Ethics.

SECTION I

Goals of M.B.B.S. Course

- (1) That the medical curriculum should be oriented towards educating students to take up the responsibilities of physicians of first contact. The medical graduate should be capable of functioning independently in both urban and rural environment.
- (2) Every effort should be made to provide educational experience that allow hands-on-experience both in hospital as well as in community setting. For this purpose, a comprehensive list of clinical skills that a graduate must acquire at the end of the course including internship has been prepared.
- (3) That maximum efforts be made to encourage integrated teaching and every attempt be made to be-emphasize compartmentalization of disciplines so as to achieve horizontal and vertical integration in different phases.

- (4) That educational experience should emphasis health rather than only disease, and community orientation also instead of only hospital orientation. Population control and family planning should also be given due emphasis.
- (5) Due importance to be given to teaching common problems of health and disease and to the national programmes.
- (6) That every effort should be made to use learner oriented methods which would encourage cultivation of logical thinking, clarity of expression, independence of judgement, scientific habits, problems solving abilities, self initiated and self-directed learning.
- (7) Reduction of didactic lectures (not more than 1/3 of total teaching hours) and increasing use of active methods of learning such as group discussions, seminars, role play, field visits, demonstration, peer interactions etc. which would enable students to develop personality, communication skills and other qualities which are necessary.
- (8) Examinations be designed with a view to assess not merely the knowledge but also practical and clinical skills, habits and values which are necessary for a graduate to carry out professional day to day work competently.
- (9) Regular periodic assessment be done throughout the course for internal assessment. The assessment need not be limited to written tests. It should relate to other items such as maintenance of records, participation in seminars and group discussions, clinical case study, proficiency in carrying out practical or clinical skill or participation in project and assignments (even) during vacation. These be evaluated objectively and recorded.
- (10) That every medical institution should evolve institutional objectives, which would be in consonance with the national goals (See Section II), and health policy. The institutional objectives should describe the attributes of their product.
- (11) Shift in the role of medical teachers from mere imparting knowledge to that of a facilitator and motivator of student learning.
- (12) That every medical college establishes a medical education unit for faculty development, preparation of learning resource materials and improved evaluation methods.
- (13) Doctors and other health professionals are confronted with many ethical issues and problems. With advances in science and technology, these problems are on the increase. It is necessary for every doctor to be aware of these problems. The doctors should also be trained to analyze the ethical problem as they arise and deal with them in an acceptable manner. It is therefore recommended that teaching of medical ethics be introduced in Phase-I and continued throughout the course including the internship period.

Rajiv Gandhi University of Health Sciences endorses these goals. It strongly desires that affiliated colleges should implement these while conducting the MBBS course.

SECTION II

OBJECTIVES OF MEDICAL GRADUATE TRAINING PROGRAMME (MCI Regulations, 1997)

The MCI has stated the goals and general objectives of graduate medical education in the new regulations. They are given in this section. It is desired that in consonance with these national goals, each medical college should evolve institutional objectives.

(1) National Goals

At the end of undergraduate programme, the medical student shall endeavour to be able to:

- (a) Recognize 'health for all' as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realisation of this goal:
- (b) Learn every aspect of National policies on health and devote himself/herself to its practical implementation:
- (c) Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases:
- (d) Develop scientific temper, acquire educational experience for proficiency in profession and promote health living:
- (e) Become exemplary citizen by observation of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations:

(2) Institutional Goals

The undergraduate students coming out a medical institution should:

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

- (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:
- (g) Acquire basic management skill in the area of human resources, materials and resources management related to health care delivery;
- (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 attitude required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.
- (l) All efforts must be made to equip the medical graduate to acquire the detailed in Appendix B of Medical Council of Indian Regulations on Medical Education, 1997. (Please see Annexure-II)

SECTION III

COURSE OF STUDY, SCHEME OF EXAMINATION INCLUDING DISTRIBUTION OF MARKS OF PHASE-III OF THE REVISED MBBS

PHASE III CLINICAL SUBJECTS

COURSE OF STUDY, ATTENDANCE AND SCHEME OF EXAMINATION

1. Course of Study

i) Every student shall undergo a period of certified study extending over 4 ½ academic years from the date of commencement of his study for the subject comprising the medical curriculum to the date of completion of the examination followed by one year compulsory rotating Internship. The 4-½ year course has been divided into three phases, Phase – I - 1 year, consisting of two terms of 6 months each, and Phase – II- 1 ½ years, consisting of three terms of 6 months each.

ii) Phase III – consists of 7 terms after Phase I. It runs concurrently with Phase II, and during Phase II, para clinical and clinical subjects shall be taught concurrently. Phase III is divided into two parts – Part I and Part II. The subjects of Part I are: Community Medicine, Ophthalmology and Otorhinolaryngology (ENT). Medicine and allied subjects, Surgery and allied subjects, Obstetrics and Gynecology would be taught concurrently.

The subjects of Part II are: Medicine and its allied specialities which include, General Medicine, Paediatrics, Tuberculosis and Chest diseases, Dermatology and Sexually Transmitted Diseases, Psychiatry, Radio-diagnosis, Infectious diseases etc. The Surgery and its allied specialities include General Surgery, Orthopaedic Surgery including Physiotherapy and Rehabilitation, Ophthalmology, Otorhinolaryngology, Anaesthesia, Dentistry, Radio-therapy, Obstetrics & Gynaecology including family medicine, family welfare planning. The time distribution is given in Table 1 and 2, under Teaching Hours.

2. 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 examination. (vide Medical Council of India Notification on Graduate Medical Education (Amendment) Regulations 2003, published in the Gazette of India Part III, Section 4, Extraordinary issued on 15th October 2003)

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

A candidate lacking in the prescribed attendance and progress in any subject(s) in theory or practical/clinical in the first appearance should not be permitted to appear for the examination in that subject(s).

3. Teaching Hours and Hospital Postings

No. of teaching hours allotted for various subjects are as under:

Table 1:- Theory Lectures, Demonstrations and Seminars etc.

| <u>Subjects</u> | | <u>Hours</u> | |
|------------------------------------|---|--------------|---|
| General Medicine | - | 300 | hours |
| Pediatrics | - | 100 | “ |
| Tuberculosis and Chest diseases | - | 20 | “ |
| Psychiatry | - | 20 | “ |
| Skin & STD | - | 30 | “ |
| Community Medicine | - | 50 | “ |
| Anaesthesia | - | 20 | “ |
| General Surgery | - | 300 | “ |
| Orthopedics | - | 100 | “ |
| Ophthalmology | - | 100 | “ |
| Oto-Rhino-Laryngology | - | 70 | “ |
| Radiology | - | 20 | “ (includes Radio-diagnosis & Imaging and Radiotherapy) |
| Dentistry | - | 10 | “ |
| Obstetrics & Gynaecology | - | 300 | “ |

Clinical Course : Hospital Postings.

During third to ninth terms, clinical postings of three hours duration daily as specified in the Table is suggested for various departments, after introductory course in Clinical Methods in Medicine and Surgery of two weeks each for the whole class at the start of 3rd term.

Table 2: Hospital postings

| Subject | Weeks | | | | | | | | Total |
|-----------------------------------|---------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------|
| | Terms - | 3 rd | 4 th | 5 th | 6 th | 7 th | 8 th | 9 th | |
| Gen. Medicine ^(a) | | 6 | - | 4 | - | 4 | 6 | 6 | 26 |
| Paediatrics | | - | 2 | - | 2 | 2 | 4 | - | 10 |
| TB & Chest Diseases | | - | 2 | - | - | - | - | - | 02 |
| SKIN & STD | | - | 2 | - | 2 | - | 2 | - | 06 |
| Psychiatry | | - | - | 2 | - | - | - | - | 02 |
| Radiology ^(b) | | - | - | - | - | 2 | - | - | 02 |
| Gen. Surgery ^(c) | | 6 | - | 4 | - | 4 | 6 | 6 | 26 |
| Orthopaedics ^(d) | | - | - | 4 | 4 | - | - | 2 | 10 |
| Ophthalmology | | - | 4 | - | 4 | 2 | - | - | 10 |
| Otorhinolaryngology | | - | 4 | - | 4 | - | - | - | 08 |
| OBGY including FWP ^(e) | | 2 | 4 | 4 | - | 4 | 4 | 6 | 24 |
| Com. Medicine | | 4 | 4 | - | 4 | - | - | - | 12 |
| Casualty | | - | - | - | 2 | - | - | - | 02 |
| Dentistry | | - | - | - | - | 2 | - | - | 02 |
| Total | | 18 | 22 | 18 | 22 | 20 | 22 | 20 | 142 |

- (a) This posting includes exposure to atory medicine and infectious diseases.
- (b) This posting includes training in Radio-diagnosis and Radiotherapy where existent.
- (c) This posting includes exposure to dressing and Anesthesia.
- (d) This posting includes exposure to Rehabilitation and Physiotherapy.
- (e) This includes maternity training and the 3rd semester posting shall be in Family Welfare Planning.

4. Scheme of Examination

4.1 Internal Assessment

It shall be based on evaluation of assignment, presentation of seminar, clinical presentation etc., (see Annex – I for examples). Regular periodic examinations should be conducted throughout the course. Although the question of number of examinations is left to the institution, there should be a minimum of atleast three (3) sessional examinations during the course and average of best two examination marks should be taken into consideration while calculating the marks of the internal assessment. Day – to – day records should be given importance in the internal assessment.

Proper record of the work should be maintained, which will be the basis of internal assessment of all students and should be available for scrutiny.

Weightage for internal assessment shall be 20% of total marks in the subject.

A student must secure at least 35% of total marks fixed for internal assessment in a particular subject in order to be eligible to appear in the University Examination of that subject. (*vide Medical Council of India Notification on Graduate Medical Education (Amendment) Regulations 2003, published in the Gazette of India Part III, Section 4, Extraordinary issued on 15th October 2003*).

Assistant Professor and above or lecturer with five years of teaching experience can conduct internal assessment examination.

Theory

Minimum of three examinations is recommended. The examination preceding the University examination may be similar to the University examination. The marks allotted for internal assessment for different subjects is shown in Table 3 and 4. Average marks of best of two notified internal examinations should be reduced to the marks allotted for internal assessment for each subject and should be sent to the University.

Practical / Clinical

A minimum of one clinical test may be conducted at the end of each ward postings in all the clinical subjects. At least two ward leaving tests in Ophthalmology and Otorhinolaryngology and three ward leaving tests in Medicine, Surgery and Obstetrics and Gynecology are recommended. Average of best two examination marks should be taken into consideration while calculating the marks of the internal assessment.

A student must secure atleast 35% of total marks fixed for internal assessment in a particular subject in order to be eligible to appear in University Examination

Assistant Professor and above or lecturer with five years of teaching experience can conduct internal assessment examination.

The internal assessment marks of both theory and practical obtained by the candidates should be sent to the University atleast fifteen days prior to the commencement of theory examination

4.2 University Examination – Subjects and Marks

Third Professional examination - Part I: In the Seventh term of Phase III, in the subjects of Ophthalmology, Otorhinolaryngology and Community Medicine.

Third Professional examination - Part II: (Final Professional) – At the end of Phase III, in the subjects of Medicine, Surgery, Obstetrics & Gynecology and Paediatrics.

The distribution of marks for theory and practical / clinical examination for various subjects of Phase III, Part – I and Part – II are shown in Tables – 3 and 4.

4.3 Eligibility to appear in Phase III Examination

- a) A student who fails in the II professional examination shall not be allowed to appear in III professional part I examination unless he passes all subjects of II professional examination.
- b) Passing in III Professional - Part I examination is not compulsory before entering for 8th and 9th term training, however passing of III Professional - Part I examination is compulsory for being eligible for III Professional Part II examination.

4.4 Criteria for Pass

For declaration of pass at the University examination, a candidate shall pass both in Theory and Practical/Clinical Examinations separately in the same examination, and as stipulated below:
A candidate must obtain 50% in aggregate with a minimum of 50% in Theory including orals and minimum of 50% in Practical / Clinicals, in each of the subjects.

4.5 Declaration of Class

- a) A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of grand total marks prescribed will be declared to have passed the examination with distinction.
- b) A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of grand total marks prescribed will be declared to have passed the examination in First Class.
- c) A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 35% of marks or more but less than 65% of grand total marks prescribed will be declared to have passed the examination in Second Class.
- d) A candidate passing a university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by him/her in the examination.

[Please note fraction of marks should not be rounded off for clauses (a), (b) and (c)]

Table – 3: Distribution of Marks for University Examination of Part - I Subjects

| Subject | Community Medicine | Ophthalmology | Otorhinolaryngology |
|--|--------------------|---------------|---------------------|
| A. Theory | | | |
| 1. Written Paper. No. of Papers & Maximum marks for each paper | 2 x 100 = 200 | 1 x 100 = 100 | 1 x 100 = 100 |
| 2. Viva-Voce (Oral Examination) | 40 | 20 | 20 |
| 3. Internal Assessment (Theory) | 60 | 30 | 30 |
| Total Theory | 300 | 150 | 150 |
| B. Practical / Clinical | | | |
| 1. Practical / Clinical | 80 | 80 | 80 |
| 2. Internal Assessment (Practical) | 20 | 20 | 20 |
| Total Practical / Clinical | 100 | 100 | 100 |
| Grand Total | 400 | 250 | 250 |

Table – 4: Distribution of Marks for University Examination of Part – II Subjects

| | Pediatrics | Medicine | Surgery | Obstetrics & Gynaecology |
|---|---------------|---------------|---------------|--------------------------|
| A. Theory | | | | |
| 1. Written Paper No. of Papers & Maximum marks for each paper | 1 x 100 = 100 | 2 x 100 = 200 | 2 x 100 = 200 | 2 x 100 = 200 |
| 2. Viva-Voce (Oral Examination) | 20 | 40 | 40 | 40 |
| 3. Internal Assessment (Theory) | 30 | 60 | 60* | 60 |
| Total Theory | 150 | 300 | 300 | 300 |
| B. Practical / Clinical | | | | |
| 1. Practical / Clinical | 80 | 160 | 160 | 160 |
| 2. Internal Assessment (Practical) | 20 | 40 | 40* | 40 |
| Total Practical / Clinical | 100 | 200 | 200 | 200 |
| Grand Total | 250 | 500 | 500 | 500 |

Note: The Internal Assessment for Surgery shall consist of 45 marks for General Surgery and 15 marks for Orthopaedics in Theory component and 30 marks for General Surgery and 10 marks for Orthopaedics in clinical component.

SECTION IV
COURSE OF STUDY AND SCHEME OF EXAMINATION
PHASE III, PART I
OPHTHALMOLOGY

Course Description

a) Goals and Objectives:

MBBS Student at the end of training in Ophthalmology will be able to :

- Identify the abnormal conditions of the eye.
- Recognise and give medical treatment for those conditions, which are unlikely to cause blindness.
- Recognise and give immediate first aid treatment and arrange for immediate referral in those conditions threatening to produce blindness.
- Describe the national objectives in the prevention of blindness, and be an active participant in the implementation of National Programme for Control and Prevention of Blindness. (NPCB).

b) Course contents:

Theory

I) Introduction

II) Basic Sciences

1) Anatomy: Development of the eye.

Coats of the eye

Blood supply, Nerve supply of the eye.

Pupillary pathways, visual pathways.

Extra-ocular muscles. Ocular motor nerves.

2) Physiology: Physiology of vision.

Tear film.

Aqueous humor formation.

3) Pharmacology: Ophthalmic preparation and routes of administration.

Antibiotics, Antivirals and Anti-fungal drugs.

Cycloplegics, antiglaucoma drugs.

4) Pathology: Histopathology of Retinoblastoma, Malignant melanoma, squamous cell carcinoma, basal cell carcinoma etc.,

5) Elementary Optics: Reflection, refraction, Optical system of Normal eye, Reduced eye, Strum's conoid, Estimation of Refraction.

III) Diseases of the Eye

1) **CONJUNCTIVA**

MUST KNOW

Acute infective conjunctivitis: Bacterial conjunctivitis - purulent conjunctivitis, Ophthalmia neonatorum ; Membranous conjunctivitis.

Chlamydial conjunctivitis - Trachoma.

Viral conjunctivitis.

Allergic conjunctivitis : Simple, Phlyctenular, Vernal. Conjunctival Degenerations : terygium, Pinguecula, Concretions.

DESIRABLE TO KNOW :

Chronic conjunctivitis, Inclusion conjunctivitis, Pseudomembraneous conjunctivitis, Mucocutaneous diseases affecting conjunctiva. Conjunctival tumours.

2) **CORNEA**

MUST KNOW

Corneal ulcer : Etiology, clinical features, complications and treatment of bacterial, viral and fungal corneal ulcers. Vitamin A deficiency and keratomalacia. Exposure keratitis, Neuroparalytic keratitis, Interstitial keratitis: Aetiology, clinical features and treatment. Basics of Eye donation and Keratoplasty.

DESIRABLE TO KNOW

Other forms of deep keratitis.

Degenerations and dystrophies of cornea, Keratoconus.

Kerato-refractive surgery.

3) **SCLERA**

MUST KNOW

Clinical features and differential diagnosis, investigations and treatment of Episcleritis and Scleritis.

DESIRABLE TO KNOW :

Scleromalacia perforans, Blue sclera.

4) **UVEAL TRACT**

MUST KNOW

Classification of Uveitis.

Acute anterior uveitis - aetiology, clinical features, complications differential diagnosis and management.

Purulent uveitis : Endophthalmitis, Pan-Ophthalmritis.

DESIRABLE TO KNOW

Association of systemic diseases in uveitis, Chronic uveitis, Cyclitis, Posterior uveitis
Degenerative changes in the uveal tract. Congenital anomalies - Coloboma of Iris and Choroid.

5) LENS

MUST KNOW

Classification of cataract

Senile cataract : Aetiology, clinical features and evaluation. Differential diagnosis from open angle glaucoma. Surgical management of cataract, and complications of cataract surgery.

Aphakic corrections Intra-ocular lens implantation, Congenital cataract - types. Awareness of Amblyopia, assessment and early reference.

Degeneration and opacities

DESIRABLE TO KNOW

Other forms of cataract - Complicated, Traumatic, Metabolic, Toxic and After cataract.

Recent advances in cataract surgery-phacoemulsification

6) VITREOUS

Vitreous detachment, Asteroid hyalosis, Synchysis Scintillans,

Vitreous haemorrhage - causes and treatment.

7) GLAUCOMA

MUST KNOW

Classification

Angle closure glaucoma : Risk factors, mechanism, clinical features and management.

Open angle glaucoma : Risk factors, cardinal signs, medical and surgical treatment.

Congenital glaucoma : Differential diagnosis from cataract.

Congenital glaucoma : Clinical features and management.

DESIRABLE TO KNOW

Secondary glaucomas - Lens induced, Inflammatory, Neovascular, Traumatic, Intra-ocular tumours, Steroid induced.

8) RETINA

MUST KNOW

Fundus changes in: Diabetes mellitus, Hypertension, Toxaemia of pregnancy, Renal diseases, Haematological diseases, AIDS, Myopia.

Diabetic Retinopathy - Risk factors, assessment and treatment, role of Laser photo-coagulation.

Retinal vascular diseases - CRAO, CRVO, Eale's disease.

Retinal detachment : Risk factors, clinical features, treatment.

DESIRABLE TO KNOW

Retinal degeneration - Retinitis pigmentosa, Familial lipid degenerations.

Retinal infections - Toxoplasma, Toxocara, CMV.

Other: Phacomatosis.

9) OPTIC NERVE

MUST KNOW

Papilloedema :Aetiology and fundus picture differential diagnosis from Papillitis

Papillitis: Aetiology and fundus picture, Retrobulbar neuritis.

Optic atrophy - Primary, Secondary, Vascular, Glaucomatous.

DESIRABLE TO KNOW

Toxic amblyopia, Optic nerve coloboma.

10) INTRA-OCULAR TUMOURS

Retinoblastoma - Clinical features and treatment, differential diagnosis of leucocoria

Malignant melanoma - Clinical features and treatment.

11) SQUINT

Classification

Differentiation of paralytic and non-paralytic squint, types, aetiology, assessment and principles of management of concomitant squint.

Awareness of Amblyopia, assessment & early reference.

12) ORBIT

Causes of proptosis

Clinical features and treatment of Orbital cellulitis and cavernous sinus thrombosis.

Common tumours of the orbit.

13) LACRIMAL SYSTEM

Causes of Epiphora

Aetiology, Clinical features, Complications and Management of congenital and acquired acute and chronic Dacryocystitis.

Dry Eye - Diagnosis and management.

14) LIDS

Inflammations - Blepharitis, Hordeolum

Anomalies in the position - Trichiasis, Entropion, Ectropion, Symblepharon, Ankyloblepharon, Lagophthalmos, Ptosis, Tumours of the lids.

15) REFRACTIVE ERRORS

MUST KNOW

Types, clinical presentation & optical correction of Myopia, Hypermetropia, Astigmatism, Presbyopia, Aphakia.

DESIRABLE TO KNOW -

Anisometropia, Anisokonia, Anomalies of Accommodation & Convergence.

16) INJURIES

MUST KNOW

Perforating injuries: Mechanical effects, immediate and late complications including Sympathetic ophthalmitis and Endophthalmitis. Immediate management and referral.

Contusion injuries: Mechanical effects, delayed complications and referral, Chemical burns, Immediate first-aid, assessment and referral.

DESIRABLE TO KNOW

Other forms of injuries, industrial, retained intraocular foreignbody. Medico Legal Aspects of Injuries.

17) OPHTHALMIC SURGERY

Cataract surgery

Anti-glaucoma operations.

Enucleation, Evisceration, Exentiation, Dacryocystectomy. DCR

18) COMMUNITY OPHTHALMOLOGY

Definition and types of blindness.

Causes of blindness.

Objectives of NPCB and Trachoma control project.

Organisation of Ophthalmic screening and cataract surgery camps.

19) MISCELLANEOUS

Symptomatic disturbance of vision.

Hemianopia, Amblyopia, Amaurosis, Night blindness, Colour blindness, Word-blindness, Malingering.

Ocular emergencies- trauma, chemical burns, acute congestive glaucoma, endophthalmitis, sudden loss of vision. Investigative Ophthalmology - Ophthalmic ultrasound, computerised visual field testing, ERG, VEP, CT Scan.

Recent advances - types and uses of lasers in Ophthalmology.

20) BIO-MEDICAL WASTE: Types, potential risks and their safe management. (See Annexure 3)

Skills

i) Clinical Examination Skills

1. Visual acuity test. Use of pinhole.
2. Colour vision test.
3. Confrontation visual field test.
4. Cover test.
5. Ocular motility test.
6. Assessment of Corneal sensation - Wick test
Corneal surface - Placido's disc.
Corneal ulcer - Fluorescein staining.
7. Assessment of AC depth.
8. Pupillary size and reaction.
9. Distant Direct Ophthalmoscopy for lens opacities.
10. Direct Ophthalmoscopy.

ii) Procedures

1. Instillation of eye drops
2. Irrigation of conjunctival sac.
3. Ophthalmic patch and bandage.
4. Epilation of eye lashes.
5. Eversion of upper eye-lid.
6. Use of Lid retractors to examine infant's eyes *
7. Lacrimal syringing test *
8. Digital tonometry
9. Use of Schiottz tonometer *
10. Removal of extraocular foreignbody *
11. Sub-conjunctival injection *

*** These procedures are for observation only.**

c) Teaching Schedule

Suggested distribution of period according to the topics to be taught.

| | |
|-------------------------------|------------------|
| * Period of Clinical postings | 10 weeks |
| During II Phase | 6 weeks |
| During III Phase - I term | 4 weeks |

* Total hours of theory teaching 100 hours

Didactic lectures (1 hour duration) twice a week during phase-III, I term . . . 28 “
 Small group discussion (session of 3 hrs) afternoon session during Phase-III I term. 72 “

| Sl. No | Topics | Lectures (28 hrs.) | Tutorials (72 hrs) | Clinics (180 hrs) |
|--------|--|--------------------|-----------------------------|------------------------------|
| 1. | Basic Sciences | .. 2 hrs. | 1 session | 4 sessions |
| 2. | Diseases of conjunctiva | .. 2 “ | 2 “ | 4 “ |
| 3. | Diseases of cornea and sclera | .. 2 “ | 2 “ | 6 “ |
| 4. | Diseases of Uvea | .. 2 “ | 2 “ | 4 “ |
| 5. | Diseases of Lens | .. 2 “ | 2 “ | 6 “ |
| 6. | Glaucoma | .. 2 “ | 2 “ | 6 “ |
| 7. | Diseases of Retina and Vitreous | .. 2 “ | 1 “ | 2 “ |
| 8. | Diseases of Optic Nerve | .. 1 “ | 1 “ | 2 “ |
| 9. | Squint and neuro-ophthal mology | .. 2 “ | 1 “ | 2 “ |
| 10. | Diseases of Orbit | .. 1 “ | 1 “ | 2 “ |
| 11. | Diseases of eye-lids | .. 1 “ | 1 “ | 6 “ |
| 12. | Diseases of lacrimal apparatus | .. 1 “ | 1 “ | 2 “ |
| 13. | Refractive errors & Presbyopia | .. 1 “ | 2 “ | 2 “ |
| 14. | Ocular injuries | .. 1 “ | 1 “ | 2 “ |
| 15. | Community Ophthalmology | .. 2 “ | 1 “ | 2 “ |
| 16. | Miscellaneous | .. 4 “ | 3 “ | 8 “ |
| | a) Ocular neoplasms. | | | |
| | b) Ocular emergencies | | | |
| | c) Ocular Pharmacology. | | | |
| | d) Ocular surgeries | | | |
| | e) Recent Advances. | | | |
| | f) Systemic diseases (T.B., Syphilis, Leprosy) | | | |
| | g) D/D of red eye etc. | | | |
| | Total | .. 28 hrs | 24 sessions (24 x 3= 72hrs) | 60 sessions (60 x 3 =180hrs) |

d) Scheme of Examination

Internal Assessment

Theory: 30 marks

There shall be at least two theory examination. The marks obtained should be reduced to 30 and sent to the university.

Clinical: 20 marks

Clinical examination which shall be held at the end of each clinical posting The marks obtained for clinical examination should be reduced to 20 and sent to the university.

University Examination

i) Written Paper

Theory one paper. Duration = 3 hours. Maximum marks = 100

The type of questions and distribution of marks shall be :

| | | | | | |
|---|-------|--------------|---|-------------------|----|
| Q. I - Long Essay questions | | 2 x 10 marks | = | 20 | |
| Q. II - Short Essay questions | | 10 x 5 marks | = | 50 | |
| Q. III - Short answer type of questions | | 10 x 3 marks | = | _____ | 30 |
| | | Total | | <u>100</u> | |

ii) Clinical Examination

Clinical Examination of 2 cases 80 Marks

iii) Viva-voce 20 marks

Total .. 100 marks _____

Recommended Books

1. Stephen JH Miller, Parson's Diseases of the Eye, 18th Edition, Churchill Livingstone Pvt. Ltd., 1990 (Reprint 1994), Rs. 500/-
2. Keith Lyle, May & Worth's Manual of Diseases of the Eye, 13th Edition, CBS Publishers & Distributors, New Delhi.
3. Khurana AK, Ophthalmology, 1st Edition, 2000, New Age International (P) Ltd., New Delhi, Rs. 250/-.
4. Khurana AK, Practical Ophthalmology, 1st Edition, 1996, New Age International (P) Ltd., New Delhi, Rs. 150/-.
5. Vasudev Aanand Rao, Text Book of Diseases of the Eye, 3rd Edition, 1999, All India Publishers and Distributors, Chennai, Rs. 195/-.
6. Chatterjee BM, Handbook of Ophthalmology, 4th Edition, 1995, CBS Publishers and Distributors, New Delhi, Rs. 100/-.
7. Agarwal ML, Gupta LC, Sanjeev Agarwal, Ophthalmology for Undergraduate Students, 1st Edition, 1996, Jaypee Brothers, New Delhi, Rs. 150/-.
8. J Kanaski, Clinical Ophthalmology, 4th Edition, 1999, Reed Education & Professional Publishing, Rs. 2,800/-.
9. Gupta AK, Usha K Raina, Alope Gupta, TextBook of Ophthalmology, 1st Edition, 1998, B. I. Churchill Livingston , New Delhi, Rs. 275/-.

OTORHINOLARYNGOLOGY

Course Description

a) Goals

The goal of training in this subject is to make the candidate familiar with common problems. He should be competent enough to diagnose and treat routine problems. He should be in a position to identify the cases, which require specialist care and identify the deaf individuals at the earliest and refer them for proper rehabilitation.

b) Objectives

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

Knowledge

1. Describe surgical anatomy and physiology of Ear, Nose and Throat and Head and Neck
2. Describe basic Patho-Physiology of common ear, nose and throat diseases and emergencies.
3. Suggest common investigative procedure and their interpretation.
4. Describe common infective conditions of ENT and treat them.
5. Identify congenital deafness as early as possible.

Skills

1. Examine and diagnose common disorders of the Ear, Nose and Throat region and manage at first level of care.
2. Recognize premalignant and malignant cases of head and neck region at an early stage.
3. Remove foreign bodies in the ear and nose.
4. Perform life saving surgical procedures like tracheostomy.
5. Should be familiar with drainage of intra oral and neck abscesses.
6. Able to do anterior and posterior nasal packing to control epistaxis.

Integration

Neurosurgery – Knowledge of intracranial complications caused by diseases of ENT region (meningitis, intracranial abscess, cavernous sinus thrombophlebitis)

Ophthalmology – Knowledge of orbital complications of sinonasal disease.

General Surgery – General principal of surgical management like wound healing, acid base balance, blood transfusion and sterilization.

c) Course Contents

Diseases of the Ear

Surgical anatomy: external, middle and inner ear.

Physiology of hearing and vestibular function.

Examination of the Ear: Tuning Fork tests; hearing assessment in children – broad outline, referred pain in the ear, otalgia, tinnitus.

Deafness: Types and causes

Diseases of the external ear: perichondritis, otitis externa, cerumen, foreign body, furunculosis, keratosis.

Diseases of middle ear : Acute and Chronic suppurative otitis media, Obturans, Otitis media with effusion, Otosclerosis, Cholesteatoma.

Audiometry – pure tone

Functional examination of inner ear (vestibule): caloric test, positional nystagmus test

Deaf mutism.

Meniere's disease.

Complications of otitis media: Mastoiditis (acute and chronic), lateral Sinus thrombosis, labyrinthitis, otogenic brain abscess.

Mastoidectomy- principles.

Tumours of the ear- Glomus, Acoustic neuroma.

Diseases of Nose and Para nasal sinuses (PNS)

Surgical anatomy and physiology of nose and P.N.S including olfaction.

Congenital diseases of the Nose, Cleft lip and Palate and Choanal Atresia.

Diseases of external nose – furunculosis, vestibulitis, Rhinophyma, rodent ulcer.

Trauma, nose & PNS - fracture of nasal bones, blowout fracture of orbit, fracture of maxilla with Leforte's classification.

Foreign body in the nose – Classification of foreign bodies & management of animate and inanimate foreign bodies, Rhinolith.

Causes of epistaxis and management.

Diseases of nasal septum – Haematoma, abscess, DNS, perforation.

Diseases of nasal cavity – Acute rhinitis, Nasal Diphtheria, Granulomatous conditions of the nose, allergic rhinitis, vasomotor rhinitis, atrophic rhinitis, fungal infections of nose and paranasal sinuses.

Diseases of PNS: Acute and Chronic sinusitis. Complications of sinusitis and management.

Sino nasal polyposis – Diagnosis and management.

Basic principles of FESS (Functional Endoscopic Sinus Surgery)

Tumours of the nose and PNS – Benign tumours like papilloma, inverted papilloma, fibrous dysplasia. Malignant tumours like squamous cell carcinoma, Melanoma, Olfactory neuroblastoma.

Diseases of the Nasopharynx

Surgical anatomy and physiology of nasopharynx.

Nasopharyngeal carcinoma –diagnosis and management.

Adenoid –diagnosis and management.

Juvenile angiofibroma: Diagnosis and management

Diseases of the Pharynx

Surgical anatomy and physiology of oral cavity, oropharynx, tonsils, Waldeyer's ring, Anatomy of retropharyngeal and parapharyngeal spaces.

Physiology of mastication.

Diseases of the tonsils: acute and chronic tonsillitis, Vincent's angina, Diphtheriatic tonsillitis - diagnosis and management.

Neck space infections and abscess – Retropharyngeal, parapharyngeal abscess, peritonsillar abscess, Ludwig's angina.

Surgical anatomy and physiology of salivary glands, submandibular Sialadenitis, Salivary calculi, Parotitis, tumours of salivary glands.

Diseases of the Larynx

Surgical anatomy and Physiology of Larynx with reference to phonation and respiration.

Acute infection of the larynx – Acute laryngitis, LTB, Diphtheretic laryngitis, Acute epiglottitis.
Stridor – Causes of stridor and management.

Hoarseness of voice – History taking, causes, management.

Chronic infections of Larynx – Chronic nonspecific and specific laryngitis, granulomatous conditions of larynx.

Neurological infections of larynx – Cord palsy - Diagnosis and management.
Tumours of larynx – Diagnosis of laryngeal tumours and management.

Diseases of Trachea

Surgical anatomy of trachea, stridor, tracheostomy in detail.

Oesophagus

Surgical anatomy, physiology of deglutition.

Causes of dysphagia, diagnosis and management.

Diseases such as congenital atresia, injuries (traumatic and chemical),

Foreign body, Oesophagoscopy Neurological problems and oncology.

Bronchoscopy – Indication, contraindication and complications of foreign body in bronchus.

BIO-MEDICAL WASTE: Types, potential risks and their safe management. (See Annexure 3)

c) **Teaching hours**

Theory: 70 hours. Clinical: 8 weeks as per chart.

d) Scheme of Examination

Internal Assessment

Theory: 30 marks

There shall be at least two theory examination one at the end of VI term and another during VII term. The marks obtained should be reduced to 30 and sent to the university.

Clinical: 20 marks

It should be based on: Log book in which records of at least 10 case are maintained for which 5 marks be allotted and Clinical examination which shall be held at the end of each posting The marks obtained for clinical examination and log book should be reduced to 20 and sent to the university.

University Examination

i) *Written Paper*

There shall be one theory paper of three hours duration carrying 100 marks. It shall have three types of questions :

1. Long Essay Questions – 2 questions x 10 marks each = 20
2. Short Essay Questions – 10 questions x 5 marks each = 50
3. Short Answer Questions – 10 question x 3 marks each = 30

ii) *Clinical Examination*

Clinical examination - Two cases (40 marks for each case): 80 Marks

- | | | |
|-----------------------|---|----------|
| iii) <i>Viva-Voce</i> | : | 20 Marks |
| a) Instruments + Viva | : | 10 Marks |
| b) X-Rays + Viva | : | 10 Marks |

Recommended Books

1. Logan and Turner's Diseases of the ENT, edited by AGB Maran (Wright), 10 Ed, Butter worth. K. M. Verghese & Co, Bombay, Rs 425.
2. Ramalingam KK, A Short Practice of Otolaryngology, 2nd Ed, All India Publishers and Distributors, Chennai.
3. Mohd Maqbool, Textbook of ENT Diseases, 8th Ed. Jaypee Publishers.
4. SK De Fundamentals of Ear, Nose and Throat, 6th Ed. The New Book Stall, Rs 100.
5. Ramanjaneyulu P, Diseases of Ear Nose & Throat , Paras Publishing.
6. Dhingra P. L. Diseases of Ear Nose & Throat 2nd Ed. Churchill Livingston.
7. Bhargava, Text book of ENT, 5th ed. Usha Publications, Mumbai, Rs 155.
8. Boies, Fundamentals of Otolaryngology.

References

1. Ballyntyne Groove - Synopsis of Otolaryngology
2. Ballenger - Text Book of Otorhinolaryngology
3. Saunders - Text Book of E.N.T.

Community Medicine

The Goals, Objectives, Course Contents (theory and practical), Teaching hours and Scheme of Examination have been given in RGUHS Ordinance Governing MBBS Degree Programme Phase II: Para-clinical subjects, 1997. However, it is repeated here.

The Scheme of Examination was revised by the Board of Studies taking into consideration the Medical Council of India Regulations on Graduate Medical Education, 1997, in which two theory papers have been recommended. The revised scheme of examination is given in this volume.

Course Description

a. Goals

The aim of teaching by the department of Community Medicine is directed towards preparation of the medical student to function as community and primary care physician. Towards this end, by completion of training the MBBS student must be

1. Aware of the physical, social, psychological, economic and environmental aspect of health and disease.
2. Able to apply the clinical skills to recognize and manage common health problems including their physical, emotional and social aspects at the individual, family and community levels and deal with public health emergencies.
3. Able to define and manage the health problems of the community he/she serves.

b. Objectives

To achieve this he/she will be able to :

- a. Organize elementary epidemiological studies to assess the health problems in the area. For this he should be able to design a study collect data, analyze it with statistical tests, make a report and be able to participate in a health information systems.
- b. Priorities the most important problems and help formulate a plan of action to manage them under National Health Programme guidelines including population control and family welfare program. (He should be able to assess and allocate resources, implement and evaluate the programmes).
- c. Demonstrate knowledge of principles of organizing prevention and control of communicable and non-communicable diseases.
- d. Organize health care service for special groups like mother infants, under five children and school children, handicapped, adolescents and geriatric, rural tribal and urban slum dwellers.
- e. Organize health care in case of calamities.
- f. Inculcate values like compassion, empathy to poor, rationale and ethical practice, honesty sincerity integrity to ensure quality professional practice.
- g. Able to work as an effective leader of the health team within the primary health care set-up.
- h. Able to coordinate with and supervise other members of the health team and maintain liaison with various agencies. (Government, non-government and voluntary organizations).
- i. Able to plan and implement health education programmes.

- j. Able to perform administrative functions of health centers.
- k. Able to promote community participation especially in areas of disease control, health education and implementation of national programmes.
- l. Aware of national priorities and the goal to be achieved to implement primary health care including health for all.

c. Course Contents

THEORY

I EVOLUTION OF PUBLIC HEALTH AND CONCEPTS OF HEALTH

Must know

- 1. Evolution of Public Health.
- 2. Definition of health; holistic concept of health, appreciation of health as a relative concept, determinants of health.
- 3. Characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease.
- 4. Understanding the Natural history of disease and application, interventions at various levels of prevention with appropriate examples.
- 5. Indices used in measurement of health.
- 6. Health profile in India.

II ENVIRONMENT AND HEALTH

Must know

- 1. Water
 - a. The concept of safe and wholesome water.
 - b. The requirements of sanitary sources of water.
 - d. Understanding the methods of purification of water on small scale and large scale.
 - e. Various biological standards, including WHO guidelines for third world countries.
 - f. Principles and methods for assessing quality of water.
- 2. Sources, health hazards and control of environmental pollution
- 3. Problems in the disposal of refuse, sullage, human excreta and sewage and its remedies.
- 4. Awareness of standards of housing and the effect of poor housing on health.
- 5. Role of vectors in the causation of diseases.
- 6. Identifying features of and mode of transmission of vector borne diseases.

Desirable to know

- 1. Methods of vector control with advantages and limitations of each.
- 2. Mode of action, does and application cycle of commonly used insecticides and rodenticides.

III HEALTH EDUCATION (INFORMATION, EDUCATION, COMMUNICATION)

Must know

1. Communicate effectively with individuals, family and community using tools and techniques of information, education, and communication. To do so, the students should know :
 - a. Principles of communication, methods and evaluation of health education and understand and apply adult education methods.
 - b. Appreciate barriers to effective communication.
 - c. List various methods of health education with their advantages and disadvantages.
 - d. Select and use of appropriate media (simple audio-visual) for effective health education.
 - e. Practice of Health Education.
2. Use every opportunity for health education of the individual, family and the community.

IV NUTRITION AND DIETETICS

Must know

1. Common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological condition.
2. Nutritional assessment of individual, families and the community by selection and using appropriate methods such as : anthropometry, clinical, dietary atory techniques.
3. Plan and recommend a suitable diet for the individuals and families bearing mind the local availability of foods economic status, etc.
4. Common nutritional disorders protein energy malnutrition. Vitamin A deficiency anemia, iodine deficiency diseases fluorosis, food toxin diseases and the control and management.
5. National programmes in nutrition.
6. Nutritional surveillance education and rehabilitation.

V OCCUPATIONAL HEALTH

Must know

1. Relate the history of symptoms with the specific occupation including agriculture.
2. Employees State insurance Scheme.
3. Identification of the physical, chemical biological and social hazards to which workers are exposed to while working in a specific occupational environment.
4. Influence of physical factors like heat, humidity, cold, radiation and noise on the health of the individual and community.
5. General preventive measures against these diseases including accident prevention.

Desirable to know

1. Various legislation in relation to occupational health.

VI MEDICAL SOCIOLOGY AND COMMUNITY MENTAL HEALTH

Must know

1. Conduct of a clinico-social evaluation of the individual in relation to social, economic and cultural aspects, educational and residential background; attitude to health, disease and to health services, the individuals, family's and community's
2. Assessment of barriers to good health, recovery from sickness and to lead a socially and economically productive life.
3. Development of good doctor-patient and community relationship.
4. Identification of socio-cultural factors related to health and disease in the context of urban and rural societies.
5. Impact of urbanization of health and disease.
6. National mental health program.

Desirable to know

1. Community psychiatry.

VII FUNDAMENTALS OF BIO-STATISTICS

Must know

1.
 - a. The scope and uses of bio-statistics
 - b. Collection of data, common sampling techniques, simple statistical method for the analysis, classification interpretation and presentation of data, frequency distribution, measures of central tendency, measures of variability, laws probability.
 - c. Analyze and interpret data.
2. Obtaining health information, computing indices (rates and ratio) and making comparisons.

Desirable to know

1. Apply statistical methods in designing of studies.
 - a. Choosing of appropriate controls.
 - b. Applying tests of significance (large sampling tests)
 - c. Use of statistical tables.

VIII BASIC EPIDEMIOLOGY

Must know

1. Epidemiology : definition, concept and role in health and disease.
2. Use of basic epidemiological tools to make a community diagnosis of the health situation in orders to formulate appropriate intervention measures.
3. Definition of the terms used in describing disease transmission and control.

4. Modes of transmission and measures for prevention and control of communicable and non-communicable diseases.
5. Principal sources of epidemiological data.
6. Definition, calculation and interpretation of the measures of frequency of diseases and mortality.
7. Need and uses of screening tests.
8. Accuracy and clinical value of diagnostic and screening test (sensitivity, specificity, predictive values).
9. Planning, collecting, analyzing and interpreting data with community participation to reach a community diagnosis.
10. General principles of epidemiology of communicable and non-communicable diseases of public health importance and their control.
11. Awareness of programmes for control of non-communicable diseases.
12.
 - a. Planning and investigation of an epidemic of communicable disease in a community setting.
 - b. Institution of control measures and evaluation of the effectiveness of these measures.

Desirable to know

13. The derivation of normal values and the criteria for intervention in case of abnormal values.
14. Applications of computers in epidemiology.

IX EPIDEMIOLOGY OF SPECIFIC DISEASES COMMUNICABLE & NON-COMMUNICABLE DISEASE

Must know

The specific objectives of selected communicable and non-communicable diseases of public health importance for which National Disease control/Eradication Programmes have been formulated are described here. For other diseases, the individual teacher would formulate the objectives while drawing the lesson plans. The idea of formulation objectives for a few diseases here is to highlight their importance and emphasize certain learning outcomes.

Communicable Diseases :

Intestinal infection : Poliomyelitis, viral hepatitis, Diarrhoeal disease, Cholera, Helminthiasis including Dracunculiasis.

Respiratory infections : Acute Respiratory infections, measles, Diphtheria, Whooping cough, Tuberculosis.

Vector-borne infections : Malaria, Filariasis, Kala Azar, Dengue.

Surface Infections : Sexually Transmitted Diseases, HIV & AIDS, Tetanus, Leprosy

Zoonosis : Rabies, Japanese encephalitis, Plague, Kyasanur Forest Disease

Non-communicable diseases : Coronary heart diseases Hypertension, Rheumatic heart disease, Cancers, Diabetes, Blindness & accidents.

1. Extent of the problem, epidemiology and natural history of the disease.
2. Relative public health importance of particular disease in a given area.
3. Influence of social, cultural and ecological factors on the epidemiology of the disease.
4. Prevention and control of communicable and non-communicable disease by :
 - a. Diagnosing and treating a case and in doing so demonstrate skills in :
 - i. Clinical methods.
 - ii. Use of essential atory techniques.
 - iii. Selection of appropriate treatment regimes.
 - iv. Follow-up of cases.
 - b. Principles of planning, implementing and evaluating prevention and control measures for the disease at the community level bearing in mind the relative importance of the disease.
5. Institution of programmes for the education of individuals and communities.
6. Investigating the disease epidemic and the principles of measures o control the disease epidemic.
7. Awareness of National Disease Control Programmes.

Desirable to know

1. Level of awareness of causation and prevention of disease amongst individuals and communities.
2. Control of communicable and non-communicable diseases by diagnosing and treating a case and in doing so demonstrate skills in :
 - i. Instituting measures, where necessary, for preventing disabilities / deformities.
 - ii. Rehabilitation of the patient.

X DEMOGRAPHY

Must know

1. Definition of demography and family welfare program.
2. Stages of the demographic cycle and their impact on the population, concept of demographic gap and population explosion.
3. Definition, calculation and interpretation of demographic indices like birth rate, death rate, fertility rates.
4. Reasons for rapid population growth in India and population dynamics.
5. Need for population control measures and the National Population Policy.

XI REPRODUCTIVE AND CHILD HEALTH

Must know

1. Need for specialized services for these groups.
2. Magnitude of morbidity and mortality in these groups in the local area and different regions.
3. Local customs and practices during pregnancy, childbirth and lactation and complementary feeding.

4. Concepts of Reproductive child health (RCH) components, including child survival and safe motherhood, Universal Immunization Programme integrated child development and other existing programmes.
5. Handicapped child.
6. Organization, implementation and evaluation of reproductive child health program components.
7. Identify and describe the different family planning methods and their advantages and shortcomings.
8. Demonstrate skills in motivating a couple for selecting an appropriate family planning method.
9. Medical Termination of Pregnancy Act, (MTP).

Desirable to know

1. Organizations, technical and operational aspects of the National Family Welfare Programme and participate in the implementation of the programme.

XII SCHOOL HEALTH

Must know

1. Objectives of the School Health Programme.
2. Activities of the Programmes like :
 - a. Carrying out periodic medical examination of the children and the teachers.
 - b. Immunization of the children in the school.
 - c. Health education.
 - d. Mid-day meals.

Desirable to know

1. Obtaining participation of the teachers in the school health programmes including maintenance of record; refining healthy practices; early detection of abnormalities, national school health programmes.

XIII URBAN HEALTH

Must know

1. Common health problems (Medical, Social Environmental, Economical, Psychological) of urban slum dwellers.
2. Organization of health services for slum dwellers.
3. Organization of health services in urban areas.

XIV HEALTH SYSTEM IN INDIA

XV HEALTH PLANNING & MANAGEMENT INCLUDING DISASTER MANAGEMENT

1. Awareness regarding important health legislation in India such as Birth and Death registration act, Prevention of Food Adulteration (PFA) act, and MTP act.

2. Awareness regarding important health legislation in India such as Child Labor act, Consumer protection act, Prenatal diagnostics act, Human organ transplant act, etc.

XVI INTERNATIONAL HEALTH

XVII GERIATRICS

XVIII BIO-MEDICAL WASTE: Types, potential risks and their safe management. (See Annexure 3)

SKILLS

PART – 1 : General Skills.

The student should be able to :

1. Elicit clinico-social history to describe the agent, host an environment factor that determine and influence health.
2. Recognize and assist in management of common health problems of the community.
3. Apply elementary principles of epidemiology in carrying out simple epidemiological studies in the community.
4. Work as a team member in rendering health care.
5. Carry out health education effectively for the community.

PART – II : Skills in Relation to Specific Topic

1. **Communication**
The student should be able to communicate effectively with family members at home, patients at clinics or at homes; individuals, family or a group for health education peers at scientific forums.
2. **Team activity**
Work as a member of the health team; in planning and carrying our field work like school health.
3. **Environmental sanitation**
Collect water and stool samples for microbiological evaluation.
4. **Communicable and non-communicable diseases (including social problems)**
 - a. Eliciting clinico-social history and examining the patient for diagnosis and treatment.
 - b. Assessing the severity and/or classifying dehydration in diarrhoea, upper respiratory tract infection, dog-bite, leprosy.
 - c. Adequate and appropriate treatment and follow-up of leprosy, malaria, filariasis, rabies, upper respiratory tract infections, diarrhoea and dehydration.
 - d. Advise on the prevention and prophylaxis of common diseases like vaccine preventable diseases, tetanus, malaria, filariasis, rabies, cholera, typhoid, intestinal parasites.
5. **Maternal and Child Health**
 - a. Antenatal-examination of the mother; application of the risk approach in antenatal care.
 - b. Postnatal – assessment of the mother and new born, advice on appropriate family planning method; promotion of breast-feeding; advice on weaning.
 - c. Assessment of growth and development of the child – use of the road to health, immunization to the child; identifying high-risk infants.

- d. Skills in Vaccine management.
6. Statistics
 - a. Simple random sampling technique.
 - b. Apply appropriate (large sample) tests of significance to make a correct inference.
 - c. Sample analysis and presentation of data.
 - d. Calculation of various health indices.
 - e. Calculation of relative and attributable risks.
 - f. Calculation of sensitivity, specificity and predictive values of screening test.
7. Nutrition
 - a. Conducting a diet survey.
 - b. Community survey and clinical diagnosis of nutritional deficiencies : vitamin A deficiency, iodine deficiency, malnutrition.
 - c. Making recommendation regarding diet.
8. Occupational Health
 - a. Inspection of work sites.
 - b. Recommendation in improving work sites.
 - c. Supervision of workers and programmes.
9. Health Management
 - a. Be an effective team leader.
 - b. Guide and train workers.
 - c. Supervision of workers and programmes.
10. Managerial :
 - a. Organize antenatal and under – five clinic.
 - b. To conduct meetings
 - c. Review of records &
 - d. Principles of supervision.

FIELD VISITS :

Minimum field visits – 5

Mandatory visits to

1. Primary Health Centre
2. Sub centre
3. Anganwadi
4. Industrial visit
5. Water purification works
6. Clinico-social posting
7. Family Health Advisory program.

d. Teaching Hours

THEORY

PHASE – I (PRE-CLINICAL) :

I & II TERM

| | Topic | No. of Hours |
|----|---|---------------------|
| 1. | Introduction to Community Medicine, Evaluation of Community Medicine | 02 |
| 2. | Villages in India; Indian cultural heritage; Indian systems of Medicine | 12 |

| | | |
|----|--|----------------|
| 3. | Environment and sustainable development | 12 |
| 4. | Social Factors in Health & Disease | 12 |
| 5. | Introduction to Basic Statistics; | 06 |
| 6. | Demography and Family Welfare (including Integrated teaching along with Anatomy, Physiology and Obst. & Gynaecology) | 04 |
| 7. | Field visits to practice field area | 03 |
| 8. | Demonstration visits to Hospital and Urban health centre | 03 |
| | Total | 60 Hrs. |

PHASE – II

TERM – III

1. Concepts in Health and Disease including Medical Sociology
2. Environment and Health
3. Occupational Health including Social Security
4. Genetics and Health

Total No. of Hours – 20

TERM – IV

1. Nutrition and Health including Food Hygiene and Legislation's Related.
 2. Principles and Methods in Epidemiology
 3. Principles of Basic and Applied Medical and Health Statistics
 4. Principles, Methods and Practice of Health Education
- Lecture: 40 Hours
Practical: 20 Hours
Field visit: .60 Hours (Comm. Postings)

TERM – V

Specific Epidemiology

- A. Communicable Diseases including Zoonosis.
- B. Non-Communicable Diseases

Total No. of Hours L.40 Hours

PHASE – III :

PART – I

1. M.C.H. Demography and Family Welfare.
2. School Health Services
3. National Health Programmes
4. Mental Health Care and Geriatrics
5. Health Planning and Management including Disaster Management
6. Health Information System
7. Health Care in the Community, Rational Drug Management and Voluntary and Non-Governmental organization.
8. International Health

Total No. of Hours : Lect. 60 : P-40, C/S : 60

Practical

PRACTICALS / CLINICO-SOCIAL

1. Spotters from nutrition, environmental health and entomology, helminthes and Parasites, Occupational health, Immunization, MCH & FP Devices, etc.
2. Problem solving exercises including epidemiology and biostatistics.
3. Clinico-Social case studies of common communicable diseases, non-communicable conditions and MCH & FP beneficiaries.

e. Scheme of Examination

Internal Assessment : Total marks: 80, (Theory 60 and Practical 20)

Theory: 60 Marks

Minimum of three theory examinations are recommended in II and III phases. The 7th term examination preceding the University examination may be similar to the pattern of University examination. Average of any two best marks obtained in the notified internal examination be taken into consideration for calculating internal assessment. Thirty marks are allotted for theory examinations. The other 30 marks are allotted for day to day activities such as Block postings (10 marks), Family care programme (10 marks) and 10 marks for participation in seminars, assignments, projects and other activities. The total marks be reduced to 60 and sent to the University.

Practical: 20 Marks

A minimum of two practical tests is to be conducted. Average of the two tests and marks obtained for records shall be reduced to 15 marks. Five marks may be allotted for records. The marks obtained for practical should be sent to the university.

The internal assessment marks both theory and practical obtained by the candidates should be sent to the University at least fifteen days prior to the commencement of theory examination. Note that a student shall secure at least 35% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination.

University Examination

Total marks: 320 (Theory 200, Viva-Voce 40 and Practical 80)

Theory (Written Paper)

There shall be two papers, each carrying 100 marks. Each paper shall be of 3 hours duration. The pattern of questions would be of three types:

- Long essay question - each question carrying 10 Marks
- Short essay question - each question carrying 5 Marks
- Short answer question - each question carrying 3 Marks

Distribution of subjects in Paper I and Paper II, for the University examination shall be as follows:

Paper I: (Evolution of public health and concepts of health, environment and health, health education, nutrition and dietetics, occupational health, medical sociology and community mental health, bio-statistics, basic epidemiology)

Paper II: (Epidemiology of specific diseases communicable & non-communicable diseases, demography, reproductive and child health, school health, geriatrics, urban health, health system in India, health planning & management including disaster management, international health)

Practical: 80 marks

The distribution of different components shall be:

| | |
|--|----------|
| Problem solving exercises | 35 marks |
| (Problems based on Epidemiology, Biostatistics, Demography, Environmental health, Nutrition and Health care of Community). | |
| Clinico-Social case presentation | 35 marks |
| Spotters | 10 marks |

Viva voce: 40 marks

Consists of oral questions on all aspects of syllabus.

f. Recommend Books

Theory

Level 1

1. K. Park (1997) Text Book of Preventive & Social Medicine, 15th Edition, Publication M/S Banarasidas Bhan, T. 1167, Premanagar, Jabalpur - 482001
2. B. K. Mahajan & M. Gupta (1995) Text Book of Preventive and Social Medicine, 2nd edition, Jaypee Brothers.
3. Sathya Swaroop, Introduction to Health Statistics. Latest edition - E & S Living Stone Ltd. Edinburg, London.
4. B. Sridhar Rao - TextBook of Social Medicine (1996) or Latest Print M/S Sudha Sridhar, A-4, J.N.M.C. Quarters, Belgaum.
5. B. Sridhar Rao, Principles of Community Medicine 1979 or Latest M/S Sudha Sridhar, Belgaum.

Practicals

1. G. K. Rathnaswamy, A HandBook of Medical Entomonology, Latest Edition.
2. K. Park, TextBook of Preventive & Social Medicine, 15th Edition, Publication M/S Banarasidas Bhan, Jabalpur.

3. Gopalan Etal., Nutritive Value of Indian Food Stuffs - NIN/ICMR, Hyderabad.

Level II

1. Suresh Chandra (1997) Essentials of Community Medicine, 1st edition, New Central Book Agency, 8/1, Chintamani, Daslane, Calcutta - 9
2. A.P.Kulkarni and J.P. Baride (1998) Text Book of Community Medicine, 1st edition, Vora Medical Publication, Bombay - 31
3. B.S.Nagaraj, Community Medicine without tears 1984, Print or Latest, Mysore Printers & Publishing House, Clock Tower Square, Mysore - 1.

Level III

1. Donald Hunter, 1978 the Disease of Occupations, 6th edition or latest. Hodder & Stoughton, London, Sydney, Auckland, Toronto.
2. International Labor Organisation (197) encyclopedia of Occupational Health & Safety, Volume 1 & 2, the edition, ILO, CH-1211, Geneva, Switzerland.
3. Jallifee, W.H.O., Clinical Nutrition.

PHASE III, PART II

PE DIATRICS

Pediatrics including Neonatology

a) Goals

The course includes systematic instructions in management of common diseases of infancy and childhood, evaluation of growth and development, nutritional needs, and immunization schedule in children, social pediatrics and counseling is also dealt in the course. The aim of teaching for undergraduate medical students is to impart appropriate knowledge and skills to optimally deal with major health problems and also to ensure optimal growth and development of children

b) Objectives

Knowledge

At the end of the course student will be able to:

1. Describe normal growth and development during foetal, neonatal, child and adolescence period.
2. Describe the common pediatric disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation.
3. State age related requirements of calories, nutrients, fluids, drugs etc. in health and disease.
4. Describe preventive strategies for common infectious disorders, poisonings, accidents and child abuse.
5. Outline national programmes relating to child health including immunization programmes.

Skills

At the end of the course, the student shall be able to:

1. Take a detailed pediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common atory investigation results and plan and institute therapy.
2. Distinguish between normal newborn babies and those requiring special care and institute early care to all newborn babies including care of preterm and low birth weight babies.
3. Take anthropometric measurements, resuscitate newborn infants at birth, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programmes, perform venesection, start an intravenous line and provide nasogastric feeding.
4. Would have observed procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap and ascitic tap.
5. Provide appropriate guidance and counseling in breast feeding.
6. Provide ambulatory care to all sick children, identify indications for specialized/inpatient care and ensure timely referral of those who require hospitalization.
7. Be aware and analyse ethical problems that arise during practice and deal with them in an acceptable manner following the code of ethics.

Integration

The training in pediatrics should prepare the student to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of a team in an integrated form with other disciplines eg. Anatomy, Physiology, Forensic medicine, Community Medicine and Physical Medicine and Rehabilitation.

c) Course Contents

VI TERM - 14 CLASSES

VITAL STATISTICS:

1. Introduction to age related disorders
IMR, PMR, EPMR,
Child Mortality and Morbidity.
2. Preventive pediatrics

Different National Programmes - ICDS, MCH, RCH, CSSM, Integrated Management of Neonatal & Childhood Illnesses (IMNCI).

NEONATOLOGY:

3. High risk pregnancy and high risk neonates.
4. Classification of newborn & Gestational age assessment.
5. Normal newborn & newborn care.

GROWTH & DEVELOPMENT:

6. Growth and development, parameters of growth, growth monitoring.
7. Developmental milestone and assessment of development.

NUTRITION:

8. Normal nutritional requirements of different age groups.
9. Breast feeding & lactation failure management.
10. Infant feeding.
11. Protein Energy malnutrition Part I.
12. Protein Energy malnutrition Part II.
13. Vitamin deficiencies – Fat soluble.
14. Vitamin deficiencies – Water soluble.

VII TERM

13 CLASSES

INFECTIONS:

1. Exanthematous illness: Measles, Rubella, chickenpox, Mumps etc.
2. Typhoid fever.
3. Tuberculosis part – 1.
4. Tuberculosis part - 2.
5. Parasitic infestations.
6. Acute central nervous system infections – bacterial.

7. Acute central nervous system infections – viral.
8. Malaria – symposium.

NEONATOLOGY

9. Respiratory distress in new born.
10. Birth Injuries
11. Low birth weight babies.
12. Congenital anomalies (Diaphragmatic hernia, Cleft palate, Cleft lip, Pyloric stenosis).

VIII TERM 19 CLASSES

NEONATOLOGY :

1. Neonatal jaundice.
2. Prolonged cholestatic jaundice.
3. Neonatal infection.

GENETICS:

4. Genetic terminology and definitions, Common genetic disorders (Down Syndrome).

PEDIATRIC EMERGENCIES:

5. Shock in children.
6. Poisoning in Children - Prevention/Management
7. Snake bite and Scorpion sting.

CENTRAL NERVOUS SYSTEM:

8. Cerebral palsy.
9. Mental retardation other than cerebral palsy.
10. Hydrocephalus.
11. Seizure disorders (including febrile seizures).

GASTROENTEROLOGY:

12. Viral Hepatitis.

13. Cirrhosis of liver.

NEPHROLOGY:

14. Nephritis.

15. Nephrotic syndrome.

16. Urinary tract infection.

CARDIOLOGY:

17. Rheumatic fever.

18. Cyanotic congenital heart diseases.

19. Acyanotic congenital heart diseases.

IX TERM

17 CLASSES

ENDOCRINOLOGY:

1. Common endocrinal disorders – hypothyroidism.

2. Juvenile diabetes.

3. Short stature-evaluation.

RESPIRATORY SYSTEM:

4. Acute upper respiratory tract infections including Croup syndrome.

5. Acute LRTI (Pneumonia & Bronchiolitis).

6. Foreign body and suppurative lung disease.

EMERGENCIES:

7. Fluid & Electrolyte disturbances.

HAEMATOLOGY:

8. Leukemia lympho-reticular malignancy.

9. Nutritional anaemia.

10. Hemolytic anaemia

NEONATOLOGY:

11. Neonatal seizures

INFECTIONS:

12. HIV infection (prenatal / perinatal / postnatal)

13. Dengue hemorrhagic fever.

BEHAVIOURAL PROBLEM

14. Pica, Enuresis, Breath holding attack.

MISCELLANEOUS:

15. JRA.

16. Communication skills and counseling the parents.

17. Ethical consideration in pediatric practice with case illustrations (2 cases).

18. **BIO-MEDICAL WASTE** : Types, potential risks and their safe management. (See Annexure 3)

The topics for integrated teaching involving other faculties. (Two hours each).

1. Bleeding & coagulation disorders.
2. Coma.
3. PUO.
4. Jaundice.
5. Anaemia.
6. High risk pregnancy and neonate (with Obstetrics and Gynecology).
7. Renal failure.
8. Rheumatic Heart Disease.
9. Portal hypertension.
10. Tuberculosis.
11. Malaria.
12. Fetal & postnatal development (with Obstetrics and Gynecology).
13. Cerebral palsy.

Demonstration:

1. Nutritional exhibition.
2. Immunisation:
Administration of vaccines, vaccine preventable diseases, National immunization programme, individual vaccines, Newer vaccines, pulse polio, cold chain.
3. Gastroenteritis, DTU.
4. Bronchial asthma including management of status asthmaticus.
5. Resuscitation of newborn.
6. Developmental assessment.

7. Pediatric procedures.
8. Pediatric Resuscitation

NOTE: The number of classes mentioned are suggestive.

d) Teaching hours

Theory: Total number of theory hours will be 100 hrs.

Clinical postings: Total No of weeks of clinical postings = 10 weeks.

6th / 7th term = 4 weeks.

8th / 9th term = 6 weeks

e) Scheme of Examination

Internal Assessment : Total marks: 50, (Theory 30 and Clinical 20)

Theory: 30 Marks

Minimum of three examinations are recommended. The 9th term examination preceding the University examination may be similar to the pattern of University examination. Average of any two best marks obtained in the notified internal examination be taken into consideration for calculating internal assessment. The total marks be reduced to 30 and sent to the University.

Clinical: 20 Marks

The clinical internal assessment will be conducted at the end of each postings, that is, 2 clinical internal assessment examinations. The marks obtained in the clinical examination shall be reduced to 20 marks and sent to the University.

The internal assessment marks both theory and practical obtained by the candidates should be sent to the University at least fifteen days prior to the commencement of theory examination. Note that a student shall secure at least 35% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination.

University Examination

Theory (Written Paper)

There shall be one paper of 3 hours duration, carrying 100 marks.

The pattern of questions would be of three types:

Long essay question - each question carrying 10 marks

Short essay question - each question carrying 5 Marks

Short answer question - each question carrying 3 Marks

Clinical

Clinical Total marks:80 marks. (Two cases, one Long case: 30 marks, one short case: 30 marks)

Suggested cases for clinical examination:

Kwashiorkor, Marasmus.

Meningitis/meningitic sequelae.

Cerebral palsy.

Hemiplegia.

Rheumatic heart disease – M.S., M.R, Carditis.

Congenital heart disease – VSD, PDA, TOF.

Pneumonia.

Empyema.

Suppurative lung disease.

Hepatosplenomegaly.

Cretinism.

Assessment of growth and development in a normal child.

Assessment of dehydration

Viva voce 20 marks, includes questions on:

1. Nutrition
2. X-rays
3. Drugs
4. Instruments

Text Books Recommended

1. Indian Association of Pediatrics (IAP), Textbook of Pediatrics, Reprint, Jaypee.
2. Ghai O.P., Textbook of Pediatrics, 5th edn., Interprint, 1996.
3. Meharban Singh, Textbook of Neonatology, 5th edn., Sagar Publications.
4. Meharban Singh, Clinical Methods, 12th edn., W B Saunders and Company Ltd., 2000.
5. Hutchison's Clinical Methods, 20th Ed. Reprinted 1996.

Books for Selected Reading

1. Behrman Richard E Vaughah Victor C, Nelson Textbook of Pediatrics, 18th edn., W.B.Saunders and Company.
2. Forfar & Arneil, Textbook of Pediatrics, 5th edn., Cambell & Meintosh.

2. MEDICINE & ITS ALLIED SPECIALTIES

Medicine and its allied specialties

- (a) Medicine
- (b) Psychiatry
- (c) Dermatology
- (d) Tuberculosis & Respiratory Diseases

a) MEDICINE

Course Description

As specified by Medical Council of India

a) Goal

The broad goal of teaching of undergraduate students in Medicine is to have the knowledge, skills and behavioral attributes to function effectively as the first contact physician.

b) Objectives

Knowledge

At the end of the course, the student shall be able to:

1. diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases.
2. outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications.
3. propose diagnostic and investigative procedures and ability to interpret them.
4. provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.
5. recognize geriatric disorders and their management.

Skills

At the end of the course, the student shall be able to:

- (1) develop clinical skills (history taking, clinical examination) to diagnose various common medical disorders and emergencies.
- (2) refer a patient to secondary and/or tertiary level of health care after having instituted primary care.
- (3) perform simple routine investigations like haemogram, stool, urine, sputum and biological fluid examinations.

- (4) assist the common bedside investigative procedures like pleural tap, lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.

Integration

- (1) With Community Medicine and Physical Medicine and Rehabilitation to have the knowledge and be able to manage important current national health programmes, also to be able to view the patient in his/her total physical, social and economic milieu.
- (2) With other relevant academic inputs which provide scientific basis of clinical medicine e.g. anatomy, physiology, biochemistry, microbiology, pathology and pharmacology.

Departmental Objectives

At the end of clinical postings in General Medicine, the medical student will:

- Be able to evaluate each patient as a person in society and not merely as a collection of organ systems.
- Have developed an interest in and care for all types of patients.
- Be able to discern the hopes and fears of patients, which inevitably underlie the symptom complexes and know how to handle these emotions, both in himself and in others.
- Possess adequate knowledge in the sciences of Medicines and be able to
- Elicit a good clinical history, and physical findings, elucidate the clinical problems based on these and discuss the means of solving the problems by the use of differential diagnosis.
- Requisition for relevant atory tests and perform common side lab procedures.
- Outline the principles of management of various diseases.
- Have an open attitude to the developments in medicine so as to be aware of the need to keep abreast of new knowledge.
- Learn to be adaptable to new ideas and new situations where resources may be limited.
- Possess knowledge of and perform certain procedures.
- Understand the ethical and legal implications of his medical decisions.

c) **Course Contents**

Knowledge

I. Clinical methods in the practice of medicine

1. Clinical approach to the patient: The art of medicine, doctor patient relationship, communication skill and doctor's responsibilities.
2. Clinical Approach to disease and care of patient; Diagnostic possibilities based on interpretation of history, physical findings and atory investigations and principles of rational management.

II. Common symptoms of disease

1. Pain: Pathophysiology, clinical types, assessment and management
2. Fever: Pathophysiology of heat regulation, its disturbances, clinical types, clinical assessment and management.
3. Cough, expectoration and hemoptysis.
4. Dyspnoea, tachypnea, and cyanosis.
5. Common urinary symptoms including dysuria, oliguria. nocturia, polyuria, incontinence and enuresis.
6. Edema and Anasarca.
7. Shock and cardiovascular collapse.
8. Cardiac murmurs: functional and organic.
9. Anorexia, nausea and vomiting.
10. Constipation and diarrhoea.
11. Hematemesis, melena and hematochezia.
12. Jaundice and hepatomegaly.
13. Abdominal swelling and ascites.
14. Weight loss and weight gain.
15. Fainting, syncope and seizures; headache, dizziness and vertigo.
16. Paralysis, movement disorders and disorders of gait,
17. Coma and other disturbances of consciousness.
18. Pallor and bleeding.

19. Enlargement of lymphnodes and spleen.
20. Joint pain, and pain in the extremities and back.

III. Nutrition/Exposure to Physical and Chemical Agents

1. Nutrition and dietary management.
 - i) Nutritional requirements.
 - ii) Protein calorie malnutrition in adults.
 - iii) Obesity.
 - iv) Vitamin deficiency and excess.
2. Fluid and electrolyte balance; acidosis and alkalosis in particular relevance to vomiting, diarrhoea, uremia and diabetic ketoacidosis.
3. Poisoning: phenobarbitone, organophosphorous compounds, sedative/hypnotic, and other common poisons in the locality.
4. Acute and chronic effects of alcohol and their management.
5. Venoms, stings, insect bites: poisonous snakes, insects and scorpions.
6. Disturbances of temperature: heat stroke, heat exhaustion and cold exposure.
7. Drowning, electrocution and radiation hazards.

IV. Infections

1. Approach to infectious diseases, diagnostic and therapeutic principles.
2. General principles of rational use of antibiotics and other chemotherapy against the following:
 - i) Common gram positive infections.
 - ii) Common gram negative infections.
 - iii) Enteric fever.
 - iv) Cholera, gastroenteritis, food poisoning and dysentery
 - v) Influenza and other common viral respiratory infections
 - vi) Rabies.
 - vii) Tetanus.
 - viii) Herpes simplex and herpes zoster.
 - ix) Amoebiasis and worm infestations.
 - x) Malaria, filariasis, leishmaniasis.

- xi) Common exanthemata.
- xii) HIV infections and infections in the immuno-compromised conditions.
- xiii) Common sexually transmitted diseases.
- xiv) Common fungal infections.
- xv) Viral encephalitis.
- xvi) Tuberculosis.
- xvii) Leprosy.
- xviii) Infectious mononucleosis
- xix) Brucellosis

V. Haematology

1. Definition, prevalence, etiological factor, pathophysiology, pathology, recognition, investigations and principles of treatment of:
 - i) Anemias: iron deficiency, megaloblastic and common haemolytic anemias (thalassemia, sickle cell and acquired hemolytic).
 - ii) Common bleeding disorders (thrombocytopenia and hemophilia).
 - iii) Agranulocytosis and aplastic anemia.
2. Leukemias.
3. Lymphomas.
4. Blood group and transfusion: Major blood group systems and histo compatibility complex, concepts of transfusion and component therapy; indications for transfusion therapy, precautions to be taken during blood transfusion, hazards of transfusion and safe handling of blood and blood products.

VI. Respiratory System

1. Physiology and diagnostic methods: Sputum examination, X-ray chest, pulmonary function tests and bronchoscopy.
2. Upper respiratory infections.
3. Pneumonias.
4. Bronchiectasis and lung abscess.
5. Bronchial asthma and tropical eosinophilia.
6. Chronic obstructive airway disease and cor pulmonale.

7. Acute and chronic respiratory failure.
8. Disease of pleura: effusion, empyema, pneumothorax.
9. Pulmonary tuberculosis.
10. Neoplasms of lung.
11. Common occupational lung diseases.

VII. Cardio vascular System

1. ECG, X-rays chest with reference to common cardiovascular diseases.
2. Coronary artery disease.
3. Rheumatic fever and rheumatic heart disease.
4. Infective endocarditis.
5. Hypertension and hypertensive heart disease.
6. Acute and chronic heart failure.
7. Common congenital heart disease in adolescents and adults: ASD, VSD, PDA, TOF and Coarctation of aorta.
8. Common cardiac arrhythmias.
9. Acute and chronic pericarditis, pericardial effusion and cardiac tamponade.
10. Common aortic diseases; peripheral vascular disease: arterial and venous.

VIII. Gastro-Intestinal, Tract

1. Stool examination, endoscopy in reference to common gastrointestinal diseases.
2. Acid peptic disease.
3. Malabsorption syndrome.
4. Inflammatory bowel disease and irritable bowel syndrome.
5. Acute and chronic hepatitis.
6. Cirrhosis of liver.
7. Abdominal tuberculosis.

IX. Emergency Medicine

1. Cardiopulmonary resuscitation.
2. Acute pulmonary oedema.

3. Hypertension emergencies.
4. Diabetic keto acidosis and hypoglycemia.
5. Status epilepticus.
6. Acute severe bronchial asthma.
7. Shock and anaphylaxis.
8. Acute myocardial infarction.
9. Upper GI bleeding and hepatic coma.
10. Diagnosis and management of comatose patient.
11. Management of unknown poisoning.

X. Neurological System

1. Cerebro vascular diseases.
2. Meningitis: viral, bacterial and tuberculous.
3. Peripheral neuropathy.
4. Epilepsy.
5. Extra pyramidal diseases.
6. Common compressive and non-compressive spinal cord syndromes.
7. Motor system disease, motor neuron disease.
8. Myasthenia gravis.
9. Common myopathies in India.
10. Degenerative, nutritional and metabolic diseases of the nervous system.

XI. Nephrology and Urinary System

1. Acute renal failure.
2. Chronic renal failure.
3. Glomerulo nephritides and nephrotic syndrome.
4. Urinary tract infections / pyelonephritis.
5. Tubulointerstitial diseases and toxic neuropathies.

XII. Connective Tissue Disorders

1. Rheumatoid arthritis.

2. Degenerative joint disease including cervical spondylosis.
3. Systemic lupus erythematosus, systemic sclerosis and other collagen vascular diseases.
4. Gout.

XIII. Endocrines

1. Diabetes mellitus.
2. Hypo and hyperthyroidism; Iodine deficiency disorders.
3. Cushing's syndrome and Addison's disease.
4. Pituitary disorders: Acromegaly and Sheehan's syndrome.
5. Calcium and phosphorus metabolism: parathyroid and metabolic bone disease.

XIV. Geriatrics

Geriatric medicine: general principles of dealings with health problems of the elderly.

XV. BIO-MEDICAL WASTE: Types, potential risks and their safe management. (See Annexure 3)

Skills

1. Obtain a proper relevant history, and perform a humane and thorough clinical examination including internal examinations (per-rectal and per-vaginal) and examinations of all organs/ systems.
2. Arrive at a logical working diagnosis after clinical examination.
3. Order appropriate investigations keeping in mind their relevance (need based) and cost effectiveness.
4. Plan and institute a line of treatment which is need based, cost effective and appropriate for common ailments taking into consideration:
 - i) Patient.
 - ii) Disease.
 - iii) Socio-economic status.
 - iv) Institutional/governmental guidelines.
5. Recognise situations, which call for urgent or early treatment at secondary, and tertiary centers and make a prompt referral of such patients after giving first aid or emergency treatment.
6. Assess and manage fluid/electrolyte and acid-base imbalance.

7. Interpret abnormal biochemical atory values of common diseases.
8. Interpret skiagrams of common diseases.
9. Identify irrational prescriptions and explain their irrationality.
10. Interpret serological tests such as VDRL, ASLO, Widal, HIV, Rheumatoid factor, Hepatitis and TORCH infections.
11. Demonstrate empathy and humane approach towards patients, relatives and attendants.
12. Demonstrate interpersonal and communication skills befitting a physician in order to discuss the illness and its outcome with patient and family.
13. Develop a proper attitude towards patients, colleagues and other staff.
14. Maintain an ethical behavior in all aspects of medical practice.
15. Develop a holistic attitude towards medicine taking in social and cultural factors in each case.
16. Obtain informed consent for any examination/procedure.
17. Appreciate patients right to privacy.
18. Write a complete case record with all necessary details.
19. Write a proper discharge summary with all relevant information.
20. Write a proper referral note to secondary or tertiary centers or to other physicians with all necessary details.
21. Assess the need for and issue proper medical certificates to patients for various purposes.
22. Adopt universal precautions for self protection against HIV and hepatitis and counsel patients.
23. Perform skin sensitivity tests for drugs and serum.
24. Record and interpret ECG and be able to identify common abnormalities like myocardial infarction and arrhythmias.
25. Start intravenous line and infusion.
26. Do venous cutdown.
27. Give intra dermal, subcutaneous, intra muscular, intra venous injections.

d) Teaching Hours

Teaching of Medicine and its allied specialities starts from 3rd term and extends to 9th term during phase II and III. Theory is taught for 300 hours starting from 4th term till 9th term as follows:

| Phase | Term | No. of classes per week | Total Hours |
|--------------|----------------------|--------------------------------|--------------------|
| Phase II | 4 th Term | 1 | 24 |
| Phase II | 5 th Term | 1 | 24 |
| Phase III | 6 th Term | 1 | 24 |
| Phase III | 7 th Term | 2 | 48 |
| Phase III | 8 th Term | 3 | 72 |
| Phase III | 9 th Term | 3 | 72 |
| Total | | | 264 |

Integrated Teaching: 36 hours for group discussions, seminars etc. involving multi-speciality teachers.

Clinical Posting: 26 weeks (See table 2)

b) PSYCHIATRY

Course Description

As specified by Medical council of India

a) Goal

The aim of teaching the undergraduate student in Psychiatry is to impart such knowledge and skills that may enable to diagnose and treat common Psychiatric disorders, handle Psychiatric emergencies and to refer complicated/unusual manifestations and refer Psychiatric disorders to the specialist.

b) Objectives

Knowledge

At the end of the course, the student shall be able to:

- (1) comprehend nature and development of different types of normal human behaviour like learning, memory, motivation, personality and intelligence;
- (2) recognise difference between normal and abnormal behaviour,
- (3) classify psychiatric disorders;
- (4) recognize clinical manifestations of the following common syndromes and plan their appropriate management: organic psychosis, functional psychosis, schizophrenia, affective disorders, neurotic disorders, personality disorders, psycho-physiological disorders, drug and alcohol dependence, psychiatric disorders of childhood and adolescence;
- (5) describe rational use of different modes of therapy in psychiatric disorders.

Skills

The student shall be able to

- (1) interview the patient and understand different methods of communications in patient-doctor relationship;
- (2) elicit detailed psychiatric case history and conduct clinical examination for assessment of mental status;
- (3) define, elicit and interpret psycho-pathological symptoms and signs;
- (4) diagnose and manage common psychiatric disorders;
- (5) identify and manage psychological reactions and psychiatric disorders in medical and surgical patients in clinical practice and in community setting.

Integration

Training in Psychiatry shall prepare the students to deliver preventive, promotive, curative and re-habilitative services for the care of patients both in the family and community and to refer advance cases to a specialised Psychiatry/Mental Hospital. Training should be integrated with the department of Medicine. Neuro-Anatomy, Behavioural Sciences and Forensic medicine.

Departmental Objectives

At the end of the course, the student will be able to Comprehend nature and development of different aspects of normal human behavior like learning, memory, motivation, personality, and intelligence.

Recognize difference between normal and abnormal behaviour.

Classify psychiatric disorders.

Recognize clinical manifestations of common syndromes, and plan their appropriate management.

Describe rational use of different modes of therapy in psychiatric disorders.

c) Course Contents

1. History aspects of the diagnosis and treatment of mental illness; concept of mental health v/s mental illness; classification system currently in use in psychiatry.

2. Eliciting a detailed psychiatric history and conduction of a mental status examination; defining, eliciting and interpreting psycho pathological symptoms and signs.
3. Concept of underlying normal and abnormal human behaviour; principles of learning, memory, personality and intelligence; psychopathology (cf. Behavioral sciences).
4. Classification of the different types of psychoses; differences between psychoses and neuroses; difference between functional and organic psychoses.
5. Clinical features, diagnosis and management of:
 - a. Schizophrenia.
 - b. Mania and depression.
 - c. Anxiety disorders and hysteria.
 - d. Dementia.
 - e. Alcoholism.
 - f. Drug abuse.
6. Clinical recognition and initial therapy of psychiatric emergencies.
7. Clinical features, diagnosis and management of psychiatric disorders of childhood and adolescence.
8. Use of questionnaires in psychology.
9. Use of intelligence tests.
10. Personality disorders.

Skills

Do psychiatric evaluation and recognise common psychiatric illnesses.

d) Teaching Hours

Theory: 20 Hours

Clinical Posting: 2 Weeks

c) **DERMATOLOGY AND SEXUALLY TRANSMITTED DISEASES**

Course Description

As specified by Medical Council of India

a) Goal

The aim of teaching the undergraduate student in Dermatology, Sexually Transmitted Diseases (STD) and Leprology is to impart such knowledge and skills that may enable him to diagnose and treat common ailment and to refer rare diseases or complications/unusual manifestations of common diseases, to the specialist.

b) Objectives

Knowledge

At the end of the course of Dermatology, Sexually Transmitted diseases and Leprology, the student shall be able to:

- (1) demonstrate sound knowledge of common diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis;
- (2) Demonstrate comprehensive knowledge of various modes of topical therapy;
- (3) Describe the mode of action of commonly used drugs, their doses, side-effects/toxicity, indications and contra-indications and interactions;
- (4) Describe commonly used modes of management including the medical and surgical procedures available for the treatment of various diseases and to offer a comprehensive plan of management for a given disorder.
- (5) Diagnose and manage emergencies specially recognizing the need for referral when appropriate and necessary.

Skills

The student shall be able to:

- (1) interview the patient, elicit relevant and correct information and describe the history in a chronological order;

- (2) conduct clinical examination, elicit and interpret physical findings and diagnose common disorders and emergencies;
- (3) perform simple, routine investigative and atory procedures required for making bedside diagnosis, especially for STD cases; examination of scraping for fungus, preparation of slit smears and AFB staining for leprosy patients.
- (4) take a skin biopsy for diagnostic purpose;
- (5) manage common diseases recognizing the need for referral for specialized care in case of inappropriateness of therapeutic response.

c) Course Contents

- I. Diseases caused by Nutritional and Environmental Factors
- II. Infective Disorders: Pyodermas, Common Viral, and Common Fungal.
- III. Melanocyte, Pigment Metaolism And Other Disorders of Pigmentation
 1. Vitiligo: diagnosis.
 2. Ichthyosis.
 3. Disorders of Pigmentation: Albinism and Chloasma.
- V. Allergic Disorders.
 1. Urticaria, Atopic dermatities, and Contact dermatitis.
- VII. Dermatitis and Eczema
- VIII. Vesiculobullous Diseases
 1. Pemphigus
 2. Vesiculobullous diseases: Pemphigoid and Dermatitis herpetiformis.
- IX. Alopecia and Hirsutism
- X. Structure and Functions of Sebaceous Glands and Diseases
 1. Acne.
 2. Seborrhoeic dermatitis.
 3. Other Diseases of sebaceous glands.
 4. Pityriasis capitis.
- XI. Structure, Functions And Diseases Of Sweat Glands
 1. Miliaria.
 2. Hyperhidrosis.
- XII. Leprosy

1. Pathology, Clinical features, Diagnosis, Reactions, Management, Deformities, and Control programme.

XIII. Psoriasis

XIV. Sexually transmitted diseases

1. Genital ulcerative diseases.
2. Genital discharge diseases.

XV. Dermatological therapy

XVI. Lichen Planus

Skills

1. Perform skin scrapings and do a KOH preparation for fungal infections.
2. Prepare slit skin and nasal smear for lepra bacilli.

d) Teaching hours

Theory: 20 hours

Clinical posting: six weeks

d) TUBERCULOSIS AND RESPIRATORY DISEASES

As specified by Medical Council of India

a) Goal

The aim of teaching the undergraduate student in Tuberculosis and Chest Diseases is to impart such knowledge and skills that may enable him/her to diagnose and manage common ailments affecting the chest with the special emphasis on management and prevention of Tuberculosis and National Tuberculosis Control Programme.

b) Objectives

Knowledge

At the end of the course of Tuberculosis and Chest-diseases, the student shall be able to:

- (1) demonstrate knowledge of common chest diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis;
- (2) demonstrate comprehensive knowledge of various modes of therapy used in treatment of respiratory diseases;
- (3) describe the mode of action of commonly used drugs, their doses, side-effects/toxicity, indications and contra-indications and interactions;
- (4) describe commonly used modes of management including medical and surgical procedures available for treatment of various diseases and to offer a comprehensive plan of management inclusive of National Tuberculosis Control programme.

Skills

The student shall be able to:

- (1) interview the patient, elicit relevant and correct information and describe the history in chronological order;

- (2) conduct clinical examination, elicit and interpret clinical findings and diagnose common respiratory disorders and emergencies;
- (3) perform simple, routine investigative and office procedures required for making the bed side diagnosis, especially sputum collection and examination for etiologic organisms especially acid fast bacilli (AFB), interpretation of the chest x-rays and respiratory function tests;
- (4) interpret and manage various blood gases and pH abnormalities in various respiratory diseases;
- (5) manage common diseases recognising need for referral for specialised care, in case of inappropriateness of therapeutic response;
- (6) assist in the performance of common procedures, like laryngoscopic examination, pleural aspiration, respiratory physiotherapy, laryngeal intubation and pneumo-thoracic drainage/aspiration.

Integration

The broad goal of effective teaching can be obtained through integration with departments of Medicine, Surgery, Microbiology, Pathology, Pharmacology and Preventive and Social Medicine.

c) Teaching hours

Theory: 20 hours

Clinical posting: Two weeks

e) **SCHEME OF EXAMINATION OF MEDICINE AND ITS ALLIED SPECIALITIES**

Internal Assessment : Total marks: 100, (Theory 60 and Clinical 40)

Theory: 60 Marks

Minimum of three examinations are recommended. The 9th term examination preceding the University examination may be similar to the pattern of University examination. Average of any two best marks obtained in the notified internal examination be taken into consideration for calculating internal assessment. The total marks be reduced to 60 and sent to the University.

Clinical: 40 Marks

There will be ward leaving examination at the end of each posting. Average of any two best marks obtained in the clinical examination shall be reduced to 40 marks and sent to the University.

The internal assessment marks both theory and practical obtained by the candidates should be sent to the University at least fifteen days prior to the commencement of theory examination. Note that a student shall secure at least 35% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination.

University Examination

Total marks: 400 (Theory 200, Viva-Voce 40 and Clinical 160)

Theory (Written Paper)

There shall be two papers, each carrying 100 marks. Each paper shall be of 3 hours duration.

The pattern of questions would be of three types:

Long essay question - each question carrying 10 Marks

Short essay question - each question carrying 5 Marks

Short answer question - each question carrying 3 Marks

Distribution of subjects in Paper I and Paper II, for the University examination shall be as follows:

Paper I - General Medicine

Paper II - General Medicine including Psychiatry (20 marks), Dermatology, STD, Tuberculosis and Respiratory Diseases.

(Shall contain one question on basic sciences and allied subjects)

Clinical

Clinical examination consists of one long case carrying 80 marks and two short cases of 40 marks each. Max marks - 160 marks

Viva voce

Consists of oral questions on all aspects of syllabus and also interpretations of X-ray, ECG, prescriptions, etc., specimens, and instruments. 40 marks

Recommended Books

1. Davidson's Principles and Practice of Medicine, 18th Ed., 1999, Churchill Livingstone, London.
2. API Text Book of Medicine 6th Ed 1999.
3. Swash M, Hutchison's Clinical Methods. 20th Ed Reprinted 1996.
4. Chamberlain's Symptoms and Signs in Clinical Medicine 12th Edition, ELBS, 1997.

Reference Books

1. Harrison's Principles of Internal Medicine 14th Ed 1998, Mc. Graw Hill.
2. Macleod's Clinical Examination ISE 9th Ed 1995.

3. SURGERY AND ITS ALLIED SPECIALITIES

- (a) General Surgery
- (b) Orthopedics
- (c) Radiodiagnosis
- (d) Radiotherapy

a) GENERAL SURGERY (including Pediatric Surgery)

Course Description

A. Specified by Medical Council of India

a) Goal

The broad goal of the teaching of undergraduate students in Surgery is to enable them capable of delivering efficient first contact surgical care.

b) Objectives

Knowledge

At the end of the course, the student shall be able to:

- (1) describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children;
- (2) define indications and methods for fluid and electrolyte replacement therapy including blood transfusion;
- (3) define asepsis, disinfection and sterilization and recommend judicious use of antibiotics;
- (4) describe common malignancies in the country and their management including prevention;
- (5) enumerate different types of anaesthetic agents, their indications, mode of administration, contra indications and side effects.

Skills

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

- (1) diagnose common surgical conditions both acute and chronic, in adult and children;
- (2) plan various atory tests for surgical conditions and interpret the results;
- (3) identify and manage patients of haemorrhagic, septicaemic and other types of shock,
- (4) be able to maintain patent air-way and resuscitate.
 - (i) a critically injured patient;
 - (ii) patient with cardio-respiratory failure;
 - (iii) a drowning case;

- (5) monitor patients of head, chest, spinal and abdominal injuries, both in adults and children;
- (6) provide primary care for a patient of burns;
- (7) In the situations identified in Sl. No: 3, 4, 5, and 6, calling for urgent or early surgical intervention, refer at the optimum time to appropriate centres;
- (8) acquire principles of operative surgery, including pre-operative, operative and post operative care and monitoring;
- (9) treat open wounds including preventive measures against tetanus and gas gangrene;
- (10) diagnose neonatal and paediatric surgical emergencies and provide sound primary care before referring the patient to secondary/tertiary centers;
- (11) identify congenital anomalies and refer them for appropriate management

In addition to the skills referred above in items (1) to (10), he shall have observed/assisted/performed the following:

- (a) Incision and drainage of abscess;
 - (b) Debridement and suturing open wound;
 - (c) Venesection;
 - (d) Excision;
 - (e) Biopsy of surface malignancy;
 - (f) Catheterisation and nasogastric intubation;
 - (g) Circumcision;
 - (h) Meatotomy;
 - (i) Vasectomy;
 - (j) Peritoneal and pleural aspirations;
 - (k) Diagnostic proctoscopy;
 - (l) Hydrocele operation;
 - (m) Endotracheal intubation;
 - (n) Tracheostomy and cricothyroidotomy;
 - (o) Chest tube insertion.
- (12) counsel and guide patients and relatives regarding need, implications and problems of surgery in the individual patient;
 - (13) develop adequate and right attitude in dealing with surgical problems of patients;
 - (14) organise and conduct relief measures in situations of mass casualties.
 - (15) effectively participate in the National Health Programmes especially the Family Welfare Programme.
 - (16) discharge effectively medico-legal and ethical responsibilities.

Integration

The undergraduate teaching in surgery shall be integrated at various stages with different pre and para and other clinical departments,

c) **Course Contents**

II Phase – 4th term

One class per week (24 Hours per term)

1. Introduction to Surgery, Historical background and progress made.
2. Haemorrhage and Shock:
 - a. Etiology b.Pathology c. Symptomatology, d. .Management
3. Fluid, Electrolyte and Acid Base Balance, Nutrition
 - a. Introduction to Physiology of fluids and Electrolytes
 - b. Dehydration and over hydration
 - c. Specific electrolyte losses and symptomatology and management.
 - i. Hypokalaemia ii. Hyponatraemia iii. Hypocalcaemia iv. Acidosis
 - v. Alkalosis vi. Acid Base balance
 - d. Electrolyte changes in specific diseases
 - i. Pyloric obstruction ii. Intestinal obstruction iii. Anuria
 - e. Various replacement fluids in Surgery, mode of administration and complications.
 - f. Blood grouping, Blood transfusion and its hazards
 - g. Nutrition - pre-operative, post-operative, intravenous alimentation.
4. Skin tumours, Burns, Skin Grafting
5. Arterial diseases:
 - a. Investigations
 - b. Assessment of a case of peripheral vascular disease
 - c. Thrombosis and Embolism
 - d. Thromboangitis obliterans
 - e. Arterio sclerosis
 - f. Atherosclerosis and Aneurysms
 - g. Gangrene
 - h. Conservative management of an ischaemic limb
 - i. Surgical management of an ischaemic limb – direct arterial surgery.
6. Venous diseases:
 - a. Varicose veins
 - b. Superficial and deep vein thrombosis
 - c. Chronic venous ulcers.
7. Lymphatics and Lymphnodes:
 - a. Lymphangitis and lymphatic obstruction (filariasis)
 - b. Diseases of lymphnodes
 - i. Acute inflammation
 - ii. Chronic inflammation
 - iii. The Reticulosis

II Phase – 5th term

One class per week (24 Hours per term)

1. Wounds, wound healing and wound management

2. Acute non-specific and specific infections
3. Chronic, specific infections
4. Tumours, Cysts, Ulcers and Sinuses and Fistulae
5. Infections of the hand and foot
6. Diseases of muscles, tendons, bursae and fascia.
7. Hernia : Inguinal hernia, b. Femoral hernia, c. Umbilical hernia d. Epigastric hernia
- e. Incisional Hernia- Complications and Management

8. Umbilical Granuloma
9. Umbilical Fistula
10. Umbilical adenoma or raspberry tumour
11. Abdominal wall – Anatomy, Incisions, Burst abdomen, Desmoid tumor.

III Phase 6th term

One class per week (24 Hours per term)

1. FACE:

- a. Development and Congenital anomalies
- b. Cleft lip and cleft palate
- c. Carcinoma lip
- d. Rodent ulcer
- e. Fascio-Maxillary injuries

2. TEETH:

- a. Dental Caries, Alveolar abscess

3. GUMS:

Gingivitis and pyorrhoea, tumours of the alveolus (epulis), odontomes, tumors of the jaw.

4. MOUTH:

- a. Ranula
- b. Cancrum Oris
- c. Lingual and Sublingual dermoids
- d. Carcinoma cheek

5. TONGUE:

- a. Hyperkeratosis and leukoplakia
- b. Carcinoma tongue

6. SALIVARY GLANDS:

- a. Inflammation
- b. Salivary calculi
- c. Neoplasm

7. NECK:

- a. Branchial cyst and fistula

- b. Cystic Hygroma and solitary lymphatic cyst
- c. Thoracic outlet syndrome
- d. Cervical lymphadenitis
- e. Differential diagnosis of swellings of the neck
- f. Sternomastoid tumor.

III Phase – 7th term

Two classes per week (48 Hours per term)

1. THYROID GLAND, THYROGLOSSAL TRACT AND ENDOCRINES

- a. Development, Anatomy, Physiology and Investigations
- b. Different Non-toxic goitre, Toxic goitre
- c. Single nodule in the thyroid gland
- d. Hashimoto's disease
- e. Riedel's thyroiditis
- f. Carcinoma of the thyroid
- g. Thyroglossal cyst and fistula
- h. Parathyroids and adrenals and thymus.

2. BREAST:

- a. Anatomy and lymphatic drainage
- b. Inflammation of the breast
- c. Benign breast diseases, nipple discharge
- d. Malignant tumors of the breast

3. SYMPATHETIC SYSTEM:

- a. Anatomy
- b. Indications for sympathectomy
- c. Cervical sympathectomy
- d. Lumbar sympathectomy

4. CRANIO – CEREBRAL INJURIES:

- a. Mechanism, Pathology and Investigations and Management
- b. Cerebral concussion, contusion and laceration
- c. Acute extradural haematoma
- d. Acute intracerebral and chronic subdural haematoma
- e. Acute intracerebral haematoma
- f. Fractures of the skull

5. DISEASES OF THE BRAIN:

- a. Intracranial abscesses
- b. Intracranial tumors
- c. Hydrocephalus

6. DISEASES OF THE NERVES:

- a. Injuries of nerves and nerve regeneration
- b. Facial nerve
- c. Radial, Ulnar and Median nerve, Lateral Popliteal nerve

III Phase – 8th term

3 Classes per week (72 Hours per term)

1. GENITO URINARY SYSTEM:

Symptomatology and investigations of a genito-urinary case

KIDNEYS AND URETER:

- a. Congenital anatomy – Polycystic kidney
- b. Trauma
- c. Anuria and dialysis
- d. Hydronephrosis
- e. Renal and Ureteric calculi
- f. Tuberculosis of kidney
- g. Neoplasms

2. URINARY BLADDER:

- a. Congenital anomaly – Ectopia vesicae
- b. Trauma – Rupture bladder
- c. Retention of urine and cystitis
- d. Vesical calculi

3. PROSTATE:

- a. Surgical anatomy
- b. Benign enlargement
- c. Carcinoma

4. URETHRA:

- a. Rupture
- b. Stricture and its complications

5. PENIS, TESTIS AND SCROTUM:

Penis: a. Phimosis, Paraphimosis, Pre-cancerous conditions of the penis, Carcinoma penis.

Testis: a. Undescended testis and testicular torsion
b. Varicocele
c. Hydrocele and Haematocele
d. Tubercular epididymitis and acute epididymo-orchitis
e. Neoplasms

Scrotum: Fournier's gangrene, Carcinoma-scrotum

VASECTOMY AND RECANALISATION:

- a. Indications
- b. Techniques
- c. Complications with special on family planning

III Phase 9th term

3 Classes per week (72 Hours per term)

1. CARDIOTHORACIC SYSTEM:

- a. Injuries to the thorax
- b. Infections: i. Empyema thoracis
ii. Suppurative conditions of the lungs and pleura
- c. Malignancy: i. Carcinoma of the lungs
ii. Miscellaneous

OESOPHAGUS:

- a. I) Investigations of G.I.tract-general
II) Dysphagia, differential diagnosis, investigations, management
- b. Achalasia cardia
- c. Reflux oesophagitis and hiatus hernia
- d. Carcinoma oesophagus

2. STOMACH AND DUODENUM:

- a. Congenital pyloric stenosis
- b. Acute dilatation of the stomach
- c. Peptic ulcer
- d. Complications of Peptic ulcer
- e. Malignancy

3. SPLEEN:

4. LIVER

- a. Trauma
- b. Liver abscess
- c. Portal hypertension
- d. Neoplasms of the liver
- e. Cysts of the liver

5. GALL BLADDER AND BILE DUCTS

- a. Anatomy and Physiology
- b. Investigations
- c. Cholelithiasis
- d. Cholecystitis
- e. Obstructive Jaundice

6. PANCREAS:

- a. Acute pancreatitis
- b. Chronic pancreatitis
- c. Pancreatic cysts
- d. Carcinoma pancreas.

7. PERITONEUM:

- a. Acute and chronic peritonitis
- b. Subphrenic abscess

- c. Mesenteric cyst
- d. Abdominal Tuberculosis

8. INTESTINES:

- a. Congenital deformities
- b. Surgical aspects of intestinal amoebiasis
- c. Crohn's disease
- d. Ulcerative colitis
- e. Large intestinal tumors

9. INTESTINAL OBSTRUCTION:

- a. Pathology
- b. Signs and symptoms
- c. Management

10. SPECIFIC OBSTRUCTIONS:

- a. Intussusception
- b. Volvulus of sigmoid and small bowel
- c. Paralytic ileus.

11. APPENDIX:

- a. Appendicitis
- b. Complications and Management

12. RECTUM AND ANAL CANAL:

- a. Anatomy
- b. Imperforate anus
- c. Ano-rectal abscess
- d. Haemorrhoids, Fissures, Fistulae
- e. Ano-Rectal carcinoma
- f. Rectal polyp
- g. Prolapse rectum

13. BIO-MEDICAL WASTE: Types, potential risks and their safe management. (See Annexure 3)

d) Teaching Hours of Surgery

- 1) Clinical Teaching – Students are posted to hospitals for clinical work every day for 3 hours.
- 2) Lecture Classes – Total number of lecture classes 300 hours.

| Phase | Term | No. of classes per week | Total Hours |
|-----------|----------------------|-------------------------|-------------|
| Phase II | 4 th Term | 1 | 24 |
| Phase II | 5 th Term | 1 | 24 |
| Phase III | 6 th Term | 1 | 24 |
| Phase III | 7 th Term | 2 | 48 |
| Phase III | 8 th Term | 3 | 72 |
| Phase III | 9 th Term | 3 | 72 |
| Sub total | | | 264 |

3) Demonstration of :

- (a) X-rays and slides
- (b) Pathological specimens
- (c) Operative Surgery 10 hrs.
- (d) Instruments -----

4) Integrated teaching

- (a) Jaundice, Thyroid, Diabetes etc,
- (b) Critically ill patients
- (c) Multiple system injury
- (d) Cardiothoracic resuscitation with 26 hrs.
departments of anesthesia & medicine
- (e) Common Surgical Emergencies _____

Grand total 300 hrs.

Recommended Books

1. Baily & Love, A Short Practice of Surgery, Ed. 23, (International Students Edition); 2000.
2. Das S, Clinical Methods in Surgery, Ed. 4, S Das 13 Old Mayors, Calcutta; 1996.

b) ORTHOPAEDICS

(Phase III - 7th, 8th & 9th Terms)

a) Objectives

Knowledge

The student shall be able to :

- 1) explain the principles of recognition of bone injuries and dislocations;
- 2) apply suitable methods to detect and manage common infections of bones and joints;
- 3) identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation;
- 4) recognize metabolic bone diseases as seen in this country;
- 5) explain etiology, pathogenesis, manifestations, diagnosis of neoplasm affecting bones.

Skills

At the end of the course, the student shall be able to:

- (1) detect sprains and deliver first aid measures for common fractures and sprains and manage uncomplicated fractures of clavicle, Colle's fracture, phalanges fractures;
- (2) use techniques of splinting, plaster, immobilization;
- (3) manage common bone infections;
- (4) describe indications for sequestrectomy, amputations and corrective measures for bone deformities;
- (5) advise aspects of rehabilitation for polio, cerebral palsy and amputation.

Application

Be able to perform certain orthopedic skills, provide sound advice of skeletal and related conditions at primary or secondary health care level.

Integration

Integration with anatomy, surgery, pathology, radiology and forensic medicine be done.

b) Course Contents

I. TRAUMATOLOGY:

Injuries of Bone and joint:

Fracture – general types – healing of fractures – principles and management – diagnosis – methods of reductions – immobilization – complications of fractures – management of open fractures – pathological fractures.

Injuries of shoulder – arm – forearm. Fracture clavicle, injuries of Acromio clavicular joints. Fracture scapula, upper end of humerus. Dislocation of shoulder – acute and recurrent. Fracture shaft humerus. Fractures around the elbow, radius, ulna. Monteggia fracture, dislocation – Injuries around the wrist. Fracture scaphoid bone. Dislocation of lunate.

Injuries of the hand: Incidence – closed injury – fracture – metacarpal – Bennett fracture & dislocation, open injuries – tidy injuries – tendon injuries

Pop slab application.

Injuries – Lower Extremity:

Dislocation of hip, Fracture neck of femur, trochantric fracture, fracture shaft femur. Injuries of knee – fracture tibia – fracture dislocation ankle – fracture calcaneum. Traction splintage – below knee slab and above knee slab.

Injuries of the Spine:

Incidence – mechanism, types, clinical features – cord injury – traumatic Paraplegia, Nerve injury : Anatomy of a peripheral nerve- pathology – classification – diagnosis – management – Radial, Ulnar, Median, Sciatic, Lateral Popliteal.

Vascular Injuries:

Types, sub fascial compression, Brachial artery injury, Popliteal artery injury, Tibial artery injury.

Amputations: General indications – levels, technique above knee amputation, below knee stump, Symes amputation – upper limb amputation, prosthesis.

COLD ORTHOPAEDICS:

I. Deformities: General – congenital – acquired – principles of management, splints, Club foot, CDM – Congenital skeletal limb deficiencies,

II. REGIONAL CONDITIONS:

Neck – Torticollis – Inter vertebral disc prolapse. Cervical rib

Shoulder, elbow – peri arthritis – painful arc syndrome, Tennis elbow, Cubitus Varus – Valgus.

Wrist and Hand: wrist drop – claw hand, ganglion. Dupuytren's contracture, deQuervain's disease, trigger thumb – Carpal tunnel syndrome

Spine: Backache – examination – Spondylolisthesis

Hip: Clinical Examination – Perthe's disease

Knee: Genu valgum , varum , recurvatum – recurrent dislocation of Patella

Semi membranous – Bursa.

Foot: Planter Fasciitis – Flat foot – Foot drop

III. NEURO MUSCULAR DISORDERS:

Cerebral Palsy: Clinical features, management

Anterior Poliomyelitis: Pathology; clinical features management, surgery.

Leprosy: Pathology – Orthopaedic problems – Claw hand, Foot drop – Wrist drop – Rehabilitation.

Infections: Pyogenic osteomyelitis – acute, chronic, subacute – Brodie's abscess – Mycotic infection – Syphilitic lesions.

Metabolic disorders: Rickets – Osteomalacia – Osteopetrosis, Scurvy – Gout

Miscellaneous: Paget disease – Bone cyst – Medullary deformities

Diseases of joints: Clinical examination – synovial fluid: normal, septic arthritis –

Rheumatic and Rheumatoid diseases, Haemophilic arthritis.

IV. BONE AND JOINT TUBERCULOSIS:

Aetio pathogenesis – clinical features – management. Tuberculosis of spine, Pott's paraplegia, Tuberculosis of hip, knee and other joints.

Tumours: benign and malignant bone tumours

Benign: Osteochondroma, Enchondroma

Malignant: Osteosarcoma, Osteoclastoma, Ewing's tumour, Multiple myeloma, secondaries

V. PHYSICAL MEDICINE AND REHABILITATION:

VI. BIO-MEDICAL WASTE: Types, potential risks and their safe management. (See Annexure 3)

c) Teaching Hours

Theory classes: 100 Hours, including 20 hours of integrated teaching.

Clinical posting: 10 weeks (See Table 2)

Scheme of examination: See section (d) under Surgery

d) Books recommended

1. Natarajan M., Textbook of Orthopaedics – Vol. I & II
2. Maheshwari, Textbook of Orthopaedics.
3. Crawford Adams, Outline of Orthopaedics – Fractures and dislocation, 9th edition, ELBS, 1987.
4. Crawford Adams, Outline of Orthopaedics, Ed. 11, ELBS; 1990.
5. Baily & Love, A Short Practice of Surgery, Ed. 23, (International Students Edition); 2000.
6. Graham Apley, System of Orthopaedics.
7. Das S, Clinical Methods in Surgery, Ed. 4, S Das 13 Old Mayors, Calcutta; 1996.

c) RADIO-DIAGNOSIS AND IMAGING

As specified by Medical Council of India

a) Goal

The broad goal of teaching the undergraduate medical students in the field of Radio diagnosis should be aimed at making the students realise the basic need of various radio diagnostic tools in medical practice. They shall be aware of the techniques to be undertaken in different situations for the diagnosis of various ailments as well as during prognostic estimations.

b) Objectives

Knowledge

The student shall be able to:

- (1) understand basic of x-rays production, its uses and hazards.
- (2) Appreciate and diagnose changes in bones – like fractures, infections, tumours and metabolic bone diseases;
- (3) identify and diagnose various radiological changes in disease conditions of chest and mediastinum, skeletal system, Gastro intestinal Tract, Hepatobiliary system and Genito Urinary (G.U) system;
- (4) learn about various imaging techniques, including isotopes Computerized Tomography (C.T), Ultrasound, Magnetic Resonance Imaging (M.R.I) and D.S.A.

Skills

At the end of the course the student shall be able to:

- (1) use basic protective techniques during various imaging procedures;
- (2) interpret common x-ray, radio-diagnostic techniques in various community situations;
- (3) advise appropriate diagnostic procedures in specialized circumstances to appropriate specialists.

Departmental Objectives

At the end of the course in Radiodiagnosis, the student should:

- (1) Be familiar with various imaging techniques, their advantages and disadvantages.
- (2) Be aware of indications for common x-ray investigations and view to be taken for various organs. Know the indications for C.T. Scan and Ultrasound.
- (3) Be aware of radiation hazards and protection with reference to self, patient and the public.

c) Course Contents

I. RESPIRATORY SYSTEM

1. Diagnosis of common conditions like tuberculosis, consolidation, pleural effusion, pneumothorax, lung abscess, collapse, bronchogenic carcinoma and mediastinal masses.
2. Differential diagnosis of mediastinal masses.
3. Indications for bronchography, tomography and CT scan.

II. CARDIOVASCULAR SYSTEM

1. Normal topography of heart, cardiomegaly.
2. Common rheumatic heart diseases and pericardial effusion.

III. GASTROINTESTINAL SYSTEM

1. Diagnosis of acute abdominal conditions like intestinal obstruction, perforation.
2. Indications and contraindications for Barium studies.
3. Differential diagnosis of calcification and stones on plain x-ray.
4. Diagnosis of gastric ulcer / duodenal ulcer / cancer stomach / oesophageal cancer on Barium studies.

IV. OBSTETRICS AND GYNAECOLOGY

1. Radiation hazards to a pregnant woman and child. Appropriate time to take x-rays during pregnancy and the number of views to be taken.

V. SKELETAL SYSTEM

1. Diagnosis of common fractures, caries spine, osteomyelitis of bones, nutritional deficiencies like rickets, and common bone tumours and diseases of joints.

VI. CENTRAL NERVOUS SYSTEM

1. Signs of raised intra cranial tension, ICT on plain x-rays of skull.

VII. EXCRETORY SYSTEM

1. Identification of renal calaculi.

Skill

1. Interpret skiagrams of common diseases.

d) RADIOTHERAPY

Course Description

A. Specified by Medical Council of India

a) Goal

The broad goal of teaching the undergraduate medical students in the field of Radiotherapy is to make the students understand the magnitude of the ever-increasing cancer problem in the country. The students must be made aware about steps required for the prevention and possible cure of cancers.

b) Objectives

Knowledge

The student shall be able to:

- (1) identify symptoms and signs of various cancers and their steps of investigations and management;
- (2) explain the effect of radiation therapy in human beings and the basic principles involved in it;
- (3) know about radioactive isotopes and their physical properties;
- (4) be aware of the advances made in radiotherapy in cancer management and knowledge of various radio therapeutic equipment while treating a patient.

Skills

At the completion of the training programme, the student shall be able to:

- (1) take a detailed clinical history of the case suspected of having a malignant disease;

- (2) assist various specialists in administration of anticancer drugs and in application and use of various radiotherapeutic equipment, while treating a patient.

Departmental Objectives

At the end of training in Radiotherapy, the student should be able to:

- (1) Exhibit awareness of the principles of radiotherapy, the radio-responsiveness of various tumours and management of common cancers like cervical, breast and oral cancers.
- (2) Refer for further consultation at appropriate time without delay.
- (3) State general complications of irradiation and their management.
- (4) List common chemo-therapeutic drugs and toxicity of the same.
- (5) Implement health education programmes regarding prevention and early diagnosis of tobacco related cancers, cervical cancers, and breast cancers.
- (6) Know the general outlines of use of radio-isotopes in diagnosis and therapy.

c) Course Contents

1. Physical principles of radiotherapy.
2. Principles of chemotherapy.
3. Prevention of cancer.
4. Early diagnosis of cancer.
5. Principles of nuclear medicine.
6. Radio responsiveness of various tumours and management.
7. Common radiation reactions and management.
8. Radiotherapy in some of the commonly seen cancers.
9. Chemotherapy in certain cancers like childhood tumours, leukemia and lymphomas.
10. Radio-isotopes in diagnosis and therapy.

d) Teaching Hours

Radiodiagnosis and Radiotherapy

Theory: 20 hours

Clinical Posting: 2 weeks

e) Anesthesia

Course Description

c) Objectives

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

Enumerate different types of anaesthetic agents, their indications, mode of admission, contradictions and side effects;

Perform cardio-pulmonary resuscitation with the available resources and transfer the patient to a bigger hospital for advanced life support.

Set up intravenous infusion.

Clear and maintain airway in an unconscious patient.

Perform endotracheal intubation.

Administer oxygen correctly.

Perform simple nerve block

b) Course Contents

| |
|---|
| 1. History and Scope of Anesthesia |
| 2. Anatomy of upper airway; |
| 3. Physiology of Respiration, O ₂ / Co ₂ Transport, Various methods of oxygen therapy and its indications. |
| 4. Pre-Operative Evaluation / Pre-Medication |
| 5. Inhalation Anaesthetic agents, Stages of Anaesthesia |
| 6. The principles and mechanism of administration of general anaesthetics, Balanced Anaesthesia |
| 7. IPPV, Endotracheal Intubation |
| 8. Muscle Relaxants |
| 9. Spinal / Epidural Anaesthesia |
| 10. Local Anaesthesia : The pharmacology of local anaesthetics, their use and how to perform simple nerve blocks like <ul style="list-style-type: none">- Infiltration anaesthesia,- Digital block,- Ankle block,- Pudendal and paracervical blocks, Management of complication of regional anaesthesia. |
| 11. Cardio pulmonary resuscitation (C P R) basic, including use of simple ventilators |
| 12. Monitoring |
| 13. ICU, Role of anaesthesiologists in ICU |
| 14. Shock |

| |
|--|
| 15. Blood Transfusion, and Fluid Electoral Balance (Basic) |
| 16. Sites of respiratory obstruction and management of airway in an unconscious patient. |
| 17. Poisoning |
| 18. Role of anaesthesiologists in acute and chronic pain relief. |

Teaching Hours

Theory: Twenty hours on topics mentioned above (during 7th term).

Practical: Clinical/Hospital work would be part of General Surgery posting.

Recommended Books

1. Dripps R.D. et.al., Introduction to Anaesthesia, W. B. Saunders, Philadelphia, 1972.
2. Lee J.A., Synopsis of AnaesthesiaLoyd-Lukee, London, 1972.
3. Wylie W.D., A Practice of Anaesthesia, Yearbook Medical Publishers, Chicago, 1962

e) SCHEME OF EXAMINATION OF SURGERY and its ALLIED SPECIALITIES

Internal Assessment : Total marks: 100, (Theory 60 and Clinical 40)

*Theory: 60 Marks**

Minimum of three examinations are recommended. The 9th term examination preceding the University examination may be similar to the pattern of University examination. Average of any two best marks obtained in the notified internal examination be taken into consideration for calculating internal assessment. The total marks be reduced to 60 and sent to the University.

*Clinical: 40 Marks**

There will be ward leaving examination at the end of each posting. Average of any two best marks obtained in the clinical examination shall be reduced to 40 marks and sent to the University.

The internal assessment marks both theory and practical obtained by the candidates should be sent to the University at least fifteen days prior to the commencement of theory examination. Note that a student shall secure at least 35% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination.

**Note: The Internal Assessment for Surgery shall consist of 45 marks for General Surgery and 15 marks for Orthopaedics in Theory component and 30 marks for General Surgery and 10 marks for Orthopaedics in clinical component.*

University Examination:

Total marks: 400 (Theory 200, Viva-Voce 40 and Clinical 160)

Theory (Written) :

There shall be two papers each carrying 100 marks. Each paper shall be of three hours duration. The pattern of questions would be of three types.

| | | |
|-----------------------|--------------------------|----------|
| Long essay question | - each question carrying | 10 Marks |
| Short essay question | - each question carrying | 5 Marks |
| Short answer question | - each question carrying | 3 Marks |

Distribution of subjects in Paper I and Paper II, for the University examination shall be as follows:

Paper – I

Max. Marks – 100 Time 3 hours.

Section A_(Gen. Surgery)

| | | | |
|----------------------------|-------------------|---|-----------------|
| 1. Long essay questions | 2 x 10 Marks each | - | 20 |
| 2. Short essay questions | 3 x 5 Marks each | - | 15 |
| 3. Short answers questions | 5 x 3 Marks each | - | <u>15</u> |
| | Total - | | <u>50</u> Marks |

Section B_(Orthopedics)

| | | | |
|------------------|-------------------|---|-----------------|
| 1. Long essay | 2 x 10 Marks each | - | 20 |
| 2. Short essay | 3 x 5 Marks each | - | 15 |
| 3. Short answers | 5 x 3 Marks each | - | <u>15</u> |
| | Total - | | <u>50</u> Marks |

Paper II

Max. Marks : 100.

Time 3 hrs.

(Gen. Surgery including Anesthesiology, Dental diseases, Radiology, Electrotherapeutics and their application in surgery).

| | | | | | |
|----|---------------|---|-------------------|---|------------------|
| 1) | Long essay | - | 2 x 10 marks each | - | 20 |
| 2) | Short essay | - | 10 x 5 marks each | - | 50 |
| 3) | Short answers | - | 10 x 3 marks each | - | <u>30</u> |
| | | | Total - | | <u>100</u> Marks |

Clinical Examination: 160 marks

Surgery: 120 marks (One long case of 60 marks and two short cases of 30 marks each)

Orthopedics: 40 marks (Two short cases, 20 marks each)

Viva-voce Examination: 40 marks

Surgery: 30 marks

Orthopedics: 10 marks

TEXT BOOKS RECOMMENDED:

1. A Short Practice of Surgery – Baily & Love
2. Das, Clinical Methods in Surgery.

4. OBSTETRICS AND GYNAECOLOGY

Course Description

As specified by Medical Council of India

Obstetrics and Gynaecology to include family welfare and family planning

a) Goal

The broad goal of the teaching of undergraduate students in Obstetrics and Gynaecology is that he/she shall acquire understanding of anatomy, physiology and pathophysiology of the reproductive system and gain the ability to optimally manage common conditions affecting it.

b) Objectives

Knowledge

At the end of the course, the student shall be able to:

- (1) outline the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it;
- (2) detect normal pregnancy, labor, puerperium and manage the problems he/she is likely to encounter therein;
- (3) list the leading causes of maternal and perinatal morbidity and mortality;
- (4) understand the principles of contraception and various techniques employed, methods of medical termination of pregnancy, sterilisation and their complications;
- (5) identify the use, abuse and side effects of drugs in pregnancy, pre menopausal and post-menopausal periods;
- (6) describe the national programme of maternal and child health and family welfare and their implementation at various levels;
- (7) identify common gynaecological diseases and describe principles of their management;
- (8) state the indications, techniques and complications of surgeries like Caesarean section, laprotomy, abdominal and vaginal hysterectomy, Fothergill's operation and vacuum aspiration for Medical Termination of Pregnancy (MTP).

Skills

At the end of the course, the student shall be able to:

- (1) examine a pregnant women, recognise high risk pregnancies and make appropriate referrals;
- (2) conduct a normal delivery, recognise complications and provide postnatal care;
- (3) resuscitate new born and recognise congenital anomalies;
- (4) advise a couple on the use of various available contraceptive devices and assist in insertion and removal of intra-uterine contraceptive devices;
- (5) perform pelvic examination, diagnose and manage common gynaecological problems including early detection of genital malignancies;
- (6) make a vaginal cytological smear; perform a post coital test and wet vaginal smear examination for *Trichomonas vaginalis*, *Monilia*, Gram's stain for Gonorrhoea;
- (7) interpret data of investigations like biochemical, histopathological radiological, ultrasound etc.

Integration

The student shall be able to integrate clinical skills with other disciplines and bring about coordination of family welfare programme for the national goal of population control.

Departmental Objectives

At the end of training in Obstetrics and Gynaecology, MBBS student will be able to:

Knowledge

1. Appreciate the socio-cultural, economic and demographic factors that influence the practice of Obstetrics and Gynaecology.
2. Appreciate the principles of reproductive anatomy and physiology.
3. Understand the preconception, antenatal, intranatal and postnatal factors including drugs that affect the mother and foetus.
4. Recognise the changes and adaptation that occur in the mother during pregnancy, labor and puerperium.
5. Impart antenatal care, detect deviations from normal pregnancy and refer risk cases appropriately.
6. Manage normal labor, recognise the factors that may lead to complications and refer such cases appropriately.
7. Institute primary treatment in Obstetrics and Gynaecology emergencies.
8. Resuscitate and take adequate care of the new born.
9. Assist couples with infertility and those requiring contraception.
10. Know the aetio-pathology and management of menstrual abnormalities.
11. Know about the benign and malignant tumors of the genital tract and appreciate the need for screening and prevention.
12. Recognise the importance of infection and other diseases of the genital tract know about the displacements of genital tract and injuries.
13. Understand the implications of medicolegal and ethical issues concerning the speciality.
14. Acquire communication, decision making and managerial skills.

General guidelines for training

- (1) Students shall attend of a maternity hospital or maternity wards of a general hospital including (i) antenatal care, (ii) the management of puerperium, and (iii) a minimum period of 5 months in the inpatient and outpatient sections including family welfare planning.
- (2) Of this period of clinical instruction, not less than one month shall be spent as a resident pupil in the labor room of a maternity ward or a general hospital. During this period, the student shall conduct at least 10 cases of under adequate supervision and assist in 10 other cases.
- (3) A certificate showing the number of cases of attended by the student in the maternity hospital and /or patient homes respectively, shall be signed by a responsible medical officer on the staff of the hospital and shall state;
 - (a) that the student has been present during the course of and personally conducted each case, making the necessary abdominal and other examinations under the supervision of the certifying officer who shall describe his official position
 - (b) that satisfactory written histories of the cases conducted including wherever possible antenatal and postnatal observations, were presented by the student and initiated by the supervising officer.

c) Course Contents

4th TERM

OBSTETRICS

OBSTETRICS : BROADER PERSPECTIVES

2 hours

1. Vital statistics, birth rate, maternal mortality, perinatal and neonatal mortality, live birth, still birth, abortion, period of viability including definition of all above

ANATOMY OF THE FEMALE REPRODUCTIVE TRACT

1. Basic Anatomy:

3 hours

Relationship to other pelvic organs. Applied anatomy as related to Obstetrics and Gynaecological surgery

PHYSIOLOGY OF CONCEPTION

2 hours

1. Ovulation, menstruation, fertilisation and implantation
2. Gametogenesis.

DEVELOPMENT OF FOETUS AND PLACENTA

3 hours

1. Basic embryology, factors influencing foetal growth and development, anatomy of placenta

2. Teratogenesis, placental barrier

DIAGNOSIS OF PREGNANCY

2 hours

1. Clinical features, differential diagnosis, principles underlying the pregnancy tests

2. Immunological tests and their interpretation, ultrasonogram
MATERNAL CHANGES IN PREGNANCY 2 hours

1. Genital tract, cardiovascular system and Haematology
2. Respiratory and gastrointestinal system.

ANTENATAL CARE 6 hours

1. Objectives of antenatal care; assessment of period of gestation, detection of abnormality with the help of gravidogram; clinical monitoring of maternal and foetal well-being; detection of normal foetal pelvic relation (obstetrical palpation); advise regarding nutrition; prescribing in pregnancy; immunisation against tetanus; basic investigations.
2. Foetal well-being; biophysical monitoring; pelvic assessment.

6th TERM

GYNAECOLOGY

- I. **PHYSIOLOGICAL VAGINAL DISCHARGE** 1 hour
 1. Clinical characteristics: Biology of vagina, cytology of vagina, natural defence mechanism against infections, bacterial flora of vagina.
- II. **PATHOLOGICAL VAGINAL DISCHARGE** 2 hours
 1. Aetiology, characteristics; clinical recognition; investigation, treatment of common causes; genital hygiene.
- III. **ABNORMAL AND EXCESSIVE MENSTRUAL BLEEDING** 1 hour
- IV. **AMENORRHOEA** 2 hours
 1. Primary and Secondary amenorrhoea; Causes, principles of management
- V. **DYSFUNCTIONAL UTERINE BLEEDING** 1 hour
 1. Aetiopathology, classification; clinical aspects and diagnosis, principles of investigation and management
 2. Hormone therapy, management options
- VI. **FERTILITY AND INFERTILITY** 2 hours
 1. Causes in male and female; Physical examination of both female and male partners; essential investigations and interpretation
 2. Management options; principles of Medically Assisted Reproductive Technology (MART)
- VII. **ENDOMETRIOSES AND ALLIED STATES** 1 hour
 1. Aetiopathology; clinical features; principles of investigation and management
 2. Implications in health and fertility
- VIII. **GENITAL INJURIES AND FISTULAE** 1 hour
 1. Injuries of female genital tract; Causes; prevention; clinical features; principles of management
 2. Diseases of Urinary system 2 hours
- IX. **GENITAL INFECTIONS INCLUDING STD, AIDS AND PELVIC TUBERCULOSIS, INFECTIONS AFFECTING INDIVIDUAL ORGANS**
 1. Aetiology, pathology, clinical features, differential diagnosis, principles of basic investigation and medical therapy 1 hour
 2. STD in the female
Tuberculosis of female genital tract 2 hours

3. Long term implications; surgical management.

- X. DISPLACEMENTS OF UTERUS, GENITAL PROLAPSE** 2 hours
1. Aetiology, clinical features; diagnosis principles of management; preventive aspects.
- X. BENIGN TUMOURS OF PELVIC ORGANS CERVICAL, UTERINE, OVARIAN**
2 hours
1. Aetiology, clinical features; diagnosis, principles of management; preventive aspects
- XI. TUMOURS OF PELVIC ORGANS CENTRAL, UTERINE, OVARIAN**
1. Aetiopathology, clinical features; differential diagnosis; principles of management

7th TERM

I. ABNORMAL OBSTETRICS

Complications of early pregnancy

1. Abortions: definition, types, causes 1 hours
Management of incomplete, inevitable abortion 1 hours
2. Recurrent abortions 1 hours
3. Induced abortion. 2 hours
Aetiopathology, impact on maternal and foetal health, principals of management
4. Ectopic pregnancy: Causes, clinical features, differential diagnosis of acute abdomen, and conservative management of ectopic pregnancy and Principles of surgical management. 2 hours
5. Trophoblastic diseases : Aetiopathology, clinical, features, differential diagnosis, principles of management, follow up. 2 hours
6. atory investigations and ultrasonography in 1st trimester of pregnancy.
7. Hyperemesis gravidarum: 1 hours
Definition, aetiology, clinical features and management.
8. Pregnancy induced hypertension: 2 hours
a) Definition; early detection; investigations; principles and management of pregnancy induced hypertension and eclampsia
b) Aetiopathology, differential diagnosis of convulsions in pregnancy, complications of eclampsia.
9. Anemia in pregnancy: 2 hours
Aetiology, classification, diagnosis, investigations, adverse effects in the mother and labor, management.
10. Other medical disorders like heart disease/diabetes mellitus and urinary tract infection 3 hours
a) Clinical features; early detection; effect of pregnancy on the disease and impact of the disease on pregnancy
b) Complications of the diseases
11. Gynaecological Disorders in Pregnancy: 2 hours
Fibroid in Pregnancy, ovarian tumour, Retroverted gravid uterus, Genital prolapse and pregnancy, Cancer cervix with pregnancy

II. NORMAL LABOR

Physiology, mechanism in occipito anterior presentation, monitoring, partogram; conduct of labor; pain relief.

III. NORMAL PUERPERIUM

8th Term

OBSTETRICS

- | | | |
|-----|--|---|
| 1. | (a) Antepartum haemorrhage, } Classification, aetiopathology, (b) Accidental haemorrhage, } clinical features, differential diagnosis, (c) Placenta previa: } Ultra- sonography, complications and management | 3 hours |
| 2. | Abnormal presentations, cord prolapse and contracted pelvis: causes, salient features, principles of management of occipito posterior, face and brow presentation, breech delivery. Obstructed labor: definition, clinical features, prevention, management | 6 hours |
| 3. | 3 | Multiple Pregnancies: complications, princip |
| 4. | Induction of Labor | 1 hour |
| 5. | Pre-term labor, P.R.O.M. Post maturity, Intra -uterine death | 1 hour |
| 6. | Complications of third stage of labor: Complications; predisposing factors, prevention; management of atonic PPH and management of injuries to the lower genital tract. | 2 hours |
| 7. | Uterine dysfunction: classification; recognition of uterine dysfunction; principles of induction and acceleration of labor | 2 hours |
| 8. | Foetal distress and foetal death: Clinical features; causes; diagnosis; principles of management prevention | 2 hours |
| 9. | Neonatal problems and resuscitation | |
| 10. | Haemolytic diseases including Rh isoimmunisation mechanism; prophylaxis, foetal complications. | 2 hours |
| 11. | Abnormal Puerperium Physiology, clinical features; complications; recognition and principles of management, prevention of puerperal sepsis. | 2 hours |

GYNAECOLOGY

- | | | |
|----|---|---------|
| 1. | Puberty | 2 hours |
| 2. | Malformations of genital tract | 2 hours |
| 3. | Harmones in gynaecology | 4 hours |
| 4. | Sex and intersexuality | 2 hours |
| 5. | Choriocarcinoma | 1 hour |
| 6. | P I D (Pelvic Inflammatory diseases) | 1 hour |
| 7. | Benign lesions of the cervix | 1 hour |
| 8. | Benign lesions of vulva and vagina | 1 hour |
| 9. | Diseases of broad ligament, fallopian tubes and parametrium | 1 hour |

| | |
|---|--------|
| 10. Precancerous lesions of genital tract | 1 hour |
| 11. Screening procedures in gynaecology | 1 hour |
| 12. Clinical aspects of menopause | 1 hour |
| 13. Low back ache | 1 hour |
| 14. Psychosomatic problems in gynaecology | 1 hour |

9th TERM

OBSTETRICS

| | |
|---|---------|
| 1. Breast feeding Physiology of lactation, care of breasts; counseling regarding breast feeding, mastitis and breast abscess | 1 hours |
| 2. Care of newborn Assessment of maturity, detect asphyxia, principles of resuscitation, common problems | 1 hours |
| 3. Medical termination of pregnancy 1. Legal aspects; indications, methods; complications 2. Management of complications. | 3 hours |
| 4. Family Planning and Contraception Various methods and devices; selection of patients; counseling of couples; side effects; failures and complications; Laparoscopic sterilisation, Vasectomy, Tubectomy | 8 hours |
| 5. Operative Obstetrics Indications; technique, and complications for episiotomy, vacuum extraction; low forceps, instrumental evacuation; menstrual regulation. Indications and steps of operation; caesarean section; assisted breech delivery, external cephalic version; cervical cerclage; intra-amniotic instillation, Destructive operations. | 6 hours |
| 6. Post-caesarean pregnancy Risk, identification of scar dehiscence. | 1 hours |
| 7. Pharmaco therapeutics in obstetrics Oxytocin, Antihypertensives, Tocolytics, anticonvulsants, maternal drug in take etc. | |
| 8. Safe motherhood, obstetrics care and the society. | |
| 9. Special topics in Obstetrics High Risk Pregnancy, Immunology in obstetrics, Intrapartum foetal monitoring, Foetal distress, Shock in obstetrics, Blood coagulation disorders in obstetrics. | |
| 10. Causes and prevention of Maternal morbidity and maternal mortality in hospital and community settings. | |
| 11. Medico legal aspects. | |

12. **Day care in obstetrics.**
13. **Reproductive and Child Health programme (RCH).**
14. **Current topics in obstetrics; Women's Health, Gender issues**

GYNAECOLOGY

- | | | |
|-----|---|----------|
| 1. | Carcinoma cervix | 2 hours |
| | Aetiopathology, clinical features; classification, screening procedures, investigations, diagnosis and principles of management | |
| 2. | Carcinoma of endometrium | 1 hour |
| 3. | Malignant ovarian tumors | 2 hour |
| 4. | Carcinoma vulva and miscellaneous | 1 hour |
| 5. | Radiotherapy in gynaecology | 1 hour |
| 6. | Chemotherapy in gynaecology | 1 hour |
| 7. | Imaging techniques in gynaecology | 1 hour |
| 8. | Endoscopy in gynaecology | 1 hour |
| 9. | Diseases of breast | 1 hour |
| 10. | Operative gynaecology | 10 hours |
| | Dilatation & Curettage in gynaecology and fractional curettage | |
| | Endometrial biopsy and tubal patency test | |
| | Electric cauterisation of cervix, cryosurgery, cervical biopsy | |
| | Amputation of cervix, trachelorrhaphy | |
| | Fothergill's operation, vaginal hysterectomy with pelvic floor repair | |
| | Abdominal hysterectomy | |
| | Laparotomy for ovarian tumours. | |

Note: The hours indicated are suggestive. Local adjustments may be made.

d) Teaching Hours:

Theory

Teaching of Obstetrics and Gynaecology extends from 4th term to 9th term, during II and III Phase of M.B.B.S. Total number of teaching hours would be 300 hours, out of which 40 hours are for integrated teaching.

| Phase | Term | No. of classes per week | No. of Hours |
|----------|----------------------|-------------------------|--------------|
| Phase II | 4 th term | 1 class | 20 |

| Phase | Term | No. of classes per week | No. of Hours |
|------------------------------|----------------------|----------------------------|--------------|
| Phase II | 6 th term | 1 class | 20 |
| Phase III | 7 th term | 1 class | 20 |
| Phase III | 8 th term | two theory classes of 1 hr | 40 |
| | | one seminar of 2 hrs | 40 |
| | | one tutorial of 2 hrs | 40 |
| Phase III | 9 th term | two theory classes of 1 hr | 40 |
| | | one seminar of 2 hrs | 40 |
| | | one tutorial of 2 hrs | 40 |
| Total No. of teaching hours* | | | 300 |

* Out of which 40 hours are for integrated teaching. Seminars/Tutorials may be used for integrated teaching

Integrated Teaching - 40 hours

Topics for integrated teaching with the other departments:

| Sl. No. | Topics | No. of hour(s) | Department |
|---------|--|----------------|--------------------|
| 1. | Family Planning | 4 | Post Partum Center |
| 2. | Embryology – Integrated foetal growth and development | 4 | Anatomy |
| 3. | Physiological changes in pregnancy with maternal adaptation. | 4 | Physiology |
| 4. | Rational use of drugs and Prescribing in pregnancy | 4 | Pharmacology |
| 5. | Nutrition and anaemia in pregnancy | 4 | Medicine |
| 6. | Urological problems in Obst. & Gynec. | 2 | Urology |

| Sl. No | Topics | No. of hour(s) | Department |
|--------|---|----------------|----------------------------|
| 7. | Acute abdomen – management & care of the abdomen | 4 | Surgery |
| 8. | Neonatal resuscitation | 4 | Pediatrics |
| 9. | Neonatal problems (Jaundice, Unbelical, Infection, Convulsions) | 2 | Pediatrics |
| 10. | Ultrasound in Obstetrics | 2 | Radiology/ Radio-diagnosis |
| 11. | Radiology in Obstetrics | 1 | Radiology/ Radio-diagnosis |
| 12. | Gynaecological malignancies | 2 | Pathology |
| 13. | MCH services: Objectives & Implementation | 2 | Community Medicine |
| 14. | Psychiatric problems related to Obst. Gync. | 1 | Psychiatry |

e) SCHEME OF EXAMINATION OBSTETRICS and GYNAECOLOGY

Internal Assessment : Total marks: 100, (Theory 60 and Clinical 40)

Theory: 60 marks

Minimum of three examinations are recommended. The 9th term examination preceding the University examination may be similar to the pattern of University examination. Average of any two best marks obtained in the notified internal examinations be taken into consideration for calculating internal assessment. The total marks be reduced to 60 and sent to the University.

Clinical: 40 marks

There will be ward leaving examinations at the end of each pointing. Average of any two best marks obtained in the clinical examinations shall be reduced to 40 marks and sent to the University.

The internal assessment marks both theory and practical obtained by the candidates should be sent to the University at least fifteen days prior to the commencement of theory examination. Note that a student shall secure at least 35% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination.

University Examination: Total marks: 400 (Theory 200, Viva-voce 40 and Clinical 160)

Theory (written paper):

There shall be two papers each carrying 100 marks. The pattern of questions would be of three types.

1. Long essay, 2 questions each question carrying 10 marks = 20 marks
2. Short essay questions. 10 x each question carrying 5 marks = 50 marks
3. Short answer questions, 10 x each question carrying 3 marks = 30 marks

Distribution of subjects in Paper I and Paper II, for the University examination shall be as follows:
Paper I – Obstetrics including social obstetrics
Paper II – Gynaecology, Family Planning and Demography
(Shall contain one question on basic sciences and allied subjects)

Clinical: 160 marks Two cases

One long case of Obstetrics and one long case of Gynaecology – 80 marks each.

Viva-voce: 40 marks

| Components are : | Instruments | 06 |
|--------------------------|--------------------|-----------|
| Specimen | 06 | |
| Dummy & Pelvis | 06 | |
| Family Planning | 06 | |
| X-ray, USG | 06 | |
| Record of delivery cases | 10 | |

f) Recommended Books

Obstetrics :

1. Mudaliar & Menon, Clinical Obstetrics, 9th edition, Orient Longman.
2. Dutta D.C., Text book of Obstetrics including Perinatology and Contraception, 4th edition, New central Book Agency (P) Ltd., New Delhi, 1998.
3. Dawn C.S., Text Book of Obstetrics and Neonatology, 14th edition, Dawn Books, Calcutta, 2000.
4. Holland and Brews, Textbook of Obstetrics, 16th Edition, B. I. Publication, New Delhi, 1998.
5. Shirish N. Daffery, Manual of Obstetrics, 16th edition, B I Churchill Livingstone, 1998.

Reference books:

1. Williams Obstetrics – Cunningham, Mc Donald & Gant, 20th edition
2. Dewhurst's Text book of Obstetrics & Gynaecology by whitfield C.R, 5th edition.

Gynaecology:

1. Padubidri VG and Shirish N Daffary, Shaw's A Text book of Gynaecology, 12th edition B. I. Churchill Livingstone, New Delhi, 1999. Rs. 290.
2. Dutta DC, Text book of Gynaecology, 2nd edition, 1997.
3. Dawn CS, Text book of Gynaecology & Contraception, 12th edition, Dawn Books Calcutta, 1995.

Reference books

1. Jeffcoate Principles of Gynaecology, by V.R. Trindall, 5th edition, Bullerworth Heinmans, 1997.

SECTION - V

TEACHING OF MEDICAL ETHICS IN M.B.B.S. COURSE

1. Introduction

Medical ethics is a systematic effort to work within the ethos of medicine, which has traditionally been service to sick.

There is now a shift from the traditional individual patient doctor relationship of medical care. With the advances in science and technology and the needs of patients, their families and the community, there is an increased concern with the health of the society. There is a shift to greater accountability to the society. Doctors and other health professionals are confronted with many ethical problems. It is, therefore, necessary to be prepared to deal with these problems.

In keeping with its goal to improve quality of education, Rajiv Gandhi University of Health Sciences recommends introduction of medical ethics in the regular teaching of M.B.B.S. course beginning from first year and continuing till the end of internship.

2. Objectives

The objectives of teaching medical ethics should be to enable the students develop the ability to:

1. Identify underlying ethical issues and problems in medical practice
2. Consider the alternatives under the given circumstances, and
3. Make decisions based on acceptable moral concepts and also traditions and practices

3. Course Contents (Syllabus)

1. Introduction to Medical Ethics

What is Ethics

What are values and norms

Relationship between being ethical and human fulfillment

How to form a value system in one's personal and professional life

Heteronomous Ethics and Autonomous Ethics

Freedom and Personal Responsibility.

2. *Definition of Medical Ethics*

Difference between medical ethics and bioethics

Major Principles of Medical Ethics-

Beneficence = fraternity

Justice = **equality**

Self determination (autonomy) = liberty

3. *Perspectives of Medical Ethics*

The Hippocratic oath
 The Declaration of Helsinki
 The WHO Declaration of Geneva
 International code of Medical Ethics (1983)
 Medical Council of India Code of Ethics.

4. Ethics of the Individual

The patient as a person
 The Right to be respected
 Truth and Confidentiality
The Autonomy of decision
 The concept of disease, health and healing
 The Right to health
 Ethics of Behaviour modification
 The Physician – Patient relationship
 Organ donation.

5. The Ethics of Human life

What is human life?
 Criteria for distinguishing the human and the non-human
 Reasons for respecting human life
 The beginning of human life
 Conception, Contraception
 Abortion
 Prenatal sex-determination
 In vitro Fertilisation (IVF),
 Artificial Insemination by Husband (AIH)
 Artificial Insemination by Donor (AID)
 Surrogate motherhood,
 Semen Intrafallopian Transfer (SIFT)
 Gamete Intrafallopian Transfer (GIFT),
 Zygote Intrafallopian Transfer (ZIFT)
 Genetic Engineering.

6. The Family and Society in Medical Ethics

The Ethics of human sexuality
 Family Planning perspectives
 Prolongation of life
 Advanced life directives – The Living Will
 Euthanasia
 Cancer and Terminal Care

4. Teaching / Learning Experience

Classroom teaching would focus on professional relationship, patient-doctor relationship, issues at the beginning and end of life, reproductive technologies, resource allocation and

7. Death and Dying

Use of life-support systems

 The moment of death
 Prolongation of life
 Ordinary and extraordinary life support
 Advanced life directives
 Euthanasia – passive and active
 Suicide – the ethical outlook
The right to die with dignity

8. Professional Ethics

Code of conduct
 Contract and confidentiality
 Charging of fees, Fee-splitting
 Prescription of drugs
 Over-investigating the patient
 Low – Cost drugs, vitamins and tonics
 Allocation of resources in health care

9. Research Ethics

Animal and experimental research/humanness
 Human experimentation
 Human volunteer research – Informed Consent
 Drug trails

10. Ethical work-up of cases

Gathering all scientific factors
 Gathering all human factors
 Gathering all value factors
 Identifying areas of value – conflict, setting of priorities
 Working our criteria towards decisions.

health policy. It will also deal with values, ethical concepts and principles. Clinical ethics must be taught as part of bedside teaching. Group discussions, case studies, problem analysing and problem solving exercises may also be employed.

The teacher involved in teaching ethics should show how the ethical principles are applied on a day-to-day and patient to patient basis by: Demonstrating by example, how to identify and resolve a particular problem Increasing the awareness and knowledge of students of the value dimensions of interactions with the patients, colleagues, relations and public. Fostering the development of skills of analysis, decisions making and judgement. Making the students aware of the need to respect the rights of the patient as also duties and responsibilities of the doctor.

Recommended distribution of Teaching hours in different phases of MBBS Course

Total Teaching Hours : 40

Phase I : Preclinical Period - 6 hours

2 hours each by Anatomy, Physiology, Biochemistry during the I year.

Phase II : Paraclinical Period - 6 hours

2 hours each from Pharmacology, Pathology and Microbiology.

Phase III: Community Medicine - 4 hours

2 hours each from Ophthalmology and ENT = 4 hours.

2 hours each in two terms from Medicine, Surgery, and OBG=12 hours

8 hours from other clinical departments.

N.B.: The teaching of Medical Jurisprudence by the department of Forensic Medicine will continue as before.

5. Evaluation

All major subjects should have at least one short answer question on Medical Ethics appropriate for the subject introduced in the University question paper, and a few questions may be asked during the viva voce examination eg., basic principle in informed consent, confidentiality, etc.

6. Recommended Reading

Francis C.M., Medical Ethics, I Ed, 1993, Jaypee Brothers, New Delhi, p189, Rs. 60/-

Different methods recommended for internal assessment

The Medical Council of India has given some examples of methods for internal assessment of students, which may be followed by the colleges. They are:

1. Credit for preparation and presentation of seminars by students.
2. Preparation of clinical case for presentation.
3. Clinical case study/problem solving exercises.
4. Participation in project for health care in the community.
5. Proficiency in conducting a small research project or assignment.
6. Multiple choice questions (MCQ) test after completion of a chapter / system.

Each item shall be objectively assessed and recorded. Some of the items can be assigned as home work / vacation work.

ANNEXURE - 2

A comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Graduate: (by Medical Council of India in Regulations on Graduate Medical Education, 1997)

I. Clinical evaluation

- a. To be able to take a proper and detailed history.
- b. To perform a complete and thorough physical examination and elicit clinical signs.
- c. To be able to properly use the Stethoscope, Blood pressure apparatus, Otoscope, Thermometer, Nasal speculum etc;
- d. To be able to perform internal examination – per rectum (PR), per vaginum (PV) etc;
- e. To arrive at a proper provisional clinical diagnosis.

II. Bed side diagnostic tests

- a. To do and interpret haemoglobin (Hb), total count (TC), erythrocyte sedimentation rate (ESR), blood smear for parasites, urine examination / albumin / sugar / ketones / microscopy;
- b. Stool exam for ova and cysts;
- c. To do Gram's stain and Ziehl-Neelsen stain for AFB;
- d. To do skin smear for lepra bacilli;
- e. To do and examine a wet film vaginal smear for Trichomonas;
- f. To do a skin scraping and Potassium hydroxide (KOH) stain for fungal infections;
- g. To perform and read Mantoux test.

III) Ability to carry out procedures

- a. To conduct CPR (Cardiopulmonary resuscitation) and First aid in newborns, children and adults.
- b. To give subcutaneous (SC) / Intramuscular (IM) / Intravenous (IV) injections and start Intravenous (IV) infusions.
- c. To pass a nasogastric tube and give gastric lavage.
- d. To administer oxygen – by mask / catheter.
- e. To administer enema.
- f. To pass a urinary catheter – male and female
- g. To insert flatus tube.
- h. To do pleural tap, ascitic tap and lumbar puncture.
- i. Insert intercostal tube to relieve tension pneumothorax.
- j. To relieve cardiac tamponade.
- k. To control external haemorrhage.

IV Anaesthetic Procedures

- a. Administer local anesthesia and nerve block
- b. Be able to secure airway patency, administer oxygen by Ambu bag.

V Surgical Procedure

- a. To apply splints, bandages and plaster of Paris (POP) slabs;
- b. To do incision and drainage of abscesses;
- c. To perform the management and suturing of superficial wounds;

- d. To carry out minor surgical procedures, e.g. excision of small cysts and nodules, circumcision, reduction of paraphimosis, debridement of wounds etc.,
- e. To perform vasectomy,
- f. To manage anal fissures and give injection for piles.

VI Obstetric Procedures

- a. To perform thorough antenatal examination and identify high risk pregnancies.
- b. To conduct normal delivery;
- c. To apply low forceps and perform and suture episiotomies;
- d. To insert and remove IUD's and to perform tubectomy.

VII Paediatrics

- a. To assess new born and recognize abnormalities and I.U. retardation;
- b. To perform immunization;
- c. To teach infant feeding to mothers;
- d. To monitor growth by the use of 'road to health chart' and to recognize development retardation;
- e. To assess dehydration and prepare and administer Oral Rehydration Therapy (ORT);
- f. To recognize ARI clinically;

VIII ENT Procedures

- a. To be able to remove foreign bodies;
- b. To perform nasal packing for epistaxis;
- c. To perform tracheostomy;

IX Ophthalmic Procedures

- a. To invert eyelids;
- b. To give subconjunctival injection;
- c. To perform epilation of eye-lashes;
- d. To measure the refractive error and advise correctional glasses;
- e. To perform nasolacrimal duct syringing for patency.

X Dental Procedures

- a. To perform dental extraction

XI Community Health

- a. To be able to supervise and motivate, community and para-professionals for corporate efforts for the health care;
- b. To be able to carry on managerial responsibilities, e.g. Management of stores, indenting, stock keeping and accounting;
- c. Planning and management of health camps;
- d. Implementation of national health programmes;
- e. To effect proper sanitation measures in the community, e.g. disposal of infected garbage, chlorination of drinking water;
- f. To identify and institute control measures for epidemics including its proper data collecting and reporting;

XII Forensic medicine including toxicology

- a. To be able to carry on proper medicolegal examination and documentation of injury and age reports.
- b. To be able to conduct examination for sexual offences and intoxication;
- c. To be able to preserve relevant ancillary materials for medico legal examination;
- d. To be able identify important post-mortem finding in common un-natural deaths.

XIII Management of emergencies

- a. To manage acute anaphylactic shock;
- b. To manage peripheral vascular failure and shock;
- c. To manage acute pulmonary oedema and LVF;
- d. Emergency management of drowning, poisoning and seizures;
- e. Emergency management of bronchial asthma and status asthmaticus;
- f. Emergency management of hyperpyrexia;
- g. Emergency management of comatose patients regarding airways, positioning prevention of aspiration and injuries;
- h. Assess and administer emergency management of burns.

SCHEDULE-I
(See Rule 5)
CATEGORIES OF BIO-MEDICAL WASTE

| **Waste Category No. | Waste Category **Type | Treatment & Disposal **Options |
|-----------------------------|---|--|
| Category No.1 | <u>Human Anatomical Waste</u> (human tissues, organs, body parts) | Incineration ^o /deep burial ^o |
| Category No.2 | <u>Animal Waste</u> (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal houses) | Incineration ^o /deep burial ^o |
| Category No.3 | <u>Microbiology & biotechnology Waste</u> (wastes from laboratory cultures, stocks or specimens of micro-organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biologicals, toxins, dishes and devices used for transfer of cultures) | Local autoclaving/micro-waving/incineration ^o |
| Category No.4 | <u>Waste sharps</u> (needles, syringes, scalpels, blades, glass, etc., that may cause puncture and cuts. This includes both used and unused sharps) | Disinfection (chemical treatment ^{oo} /auto claving/micro-waving and mutilation/ shredding ^{oo}) |
| Category No.5 | <u>Discarded Medicines and Cytotoxic drugs</u> (wastes comprising of outdated, contaminated and discarded medicines) | Incineration ^o /destruction and drugs disposal in secured landfills |
| Category No.6 | <u>**Soiled Waste</u> (items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, liners, beddings, other material contaminated with blood) | Incineration ^o autoclaving/micro-waving |
| Category No.7 | <u>Solid Waste</u> (wastes generated from disposable items other than the waste **sharps such as tubings, catheters, intravenous sets, etc.) | Disinfection by chemical treatment ^{oo} autoclaving/micro-waving and mutilation/ shredding ^{oo} |
| Category No.8 | <u>Liquid Waste</u> (waste generated from laboratory and washing, cleaning, housekeeping and disinfecting activities) | Disinfection by chemical treatment ^{oo} and discharge into drains |
| Category No.9 | <u>Incineration Ash</u> (ash from incineration of any bio-medical waste) | Disposal in municipal landfill |

**As per Bio-Medical Waste (Management & Handling) (Second Amendment) Rules, 2000, dated 2nd June, 2000.

| | | |
|----------------|--|--|
| Category No.10 | Chemical Waste (chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc) | Chemical treatment ^{cc} and discharge into drains for liquids and secured landfill for solids |
|----------------|--|--|

- ^{cc} Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.
- ^{ss} Mutilation/shredding must be such so as to prevent unauthorized reuse.
- ^o There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.
- ^{*} Deep burial shall be an option available only in towns with population less than five lakhs and in rural areas.

SCHEDULE-II
(See Rule 6)

**COLOUR CODING AND TYPE OF CONTAINER
FOR DISPOSAL OF BIO-MEDICAL WASTES**

| Colour Coding | Type of Container | Waste Category | Treatment options as per Schedule-I |
|------------------------|--------------------------------------|-------------------------------------|---|
| Yellow | Plastic bag | Cat.1, Cat.2, and Cat.3, Cat.6. | Incineration/deep burial. |
| Red | Disinfected container/plastic bag | Cat.3, Cat.6, Cat.7. | Autoclaving/Microwaving/Chemical Treatment. |
| Blue/White translucent | Plastic bag/puncture proof container | Cat.4, Cat.7. | Autoclaving/Microwaving/Chemical Treatment and destruction/shredding. |
| Black | Plastic bag. | Cat.5 and Cat.9 and Cat.10. (solid) | Disposal in secured landfill |

Notes:

1. Colour coding of waste categories with multiple treatment options as defined in Schedule-I, shall be selected depending on treatment option chosen, which shall be as specified in Schedule-I.
2. Waste collection bags for waste types needing incineration shall not be made of chlorinated plastics.
3. Categories 8 and 10 (liquid) do not require containers/bags.
4. Category 3 if disinfected locally need not be put in containers/bags.