# Ordinance Governing Third Professional Year Part II of M.B.B.S. Degree Course Revised Syllabus / Curriculum 2022 - 23



Accredited 'A+' Grade by NAAC (3<sup>rd</sup> Cycle) Placed in Category 'A' Grade by MoE (GoI)

## KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH

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#### VISION

To be an outstanding KAHER of excellence ever in pursuit of newer horizons to build self reliant global citizens through assured quality educational programs.

#### MISSION

- To promote sustainable development of higher education consistent with statutory and regulatory requirements.
- To plan continuously provide necessary infrastructure, learning resources required for quality education and innovations.
- To stimulate to extend the frontiers of knowledge, through faculty development and continuing education programs.
- To make research a significant activity involving staff, students and society.
- To promote industry / organization, interaction/collaborations with regional/national / international bodies.
- To establish healthy systems for communication among all stakeholders for vision oriented growth.
- To fulfill the national obligation through rural health missions.

#### OBJECTIVES

The objectives are to realize the following at KAHER and its constituent institutions:

- To implement effectively the programs through creativity and innovation in teaching, learning and evaluation.
- To make existing programs more careers oriented through effective system of review and redesign of curriculum.
- To impart spirit of enquiry and scientific temperament among students through research oriented activities.
- To enhance reading and learning capabilities among faculty and students and inculcate sense of life long learning.
- To promulgate process for effective, continuous, objective oriented student performance evaluation.
- To ordinate periodic performance evaluation of the faculty.
- To incorporate themes to build values, Civic responsibilities & sense of national integrity.
- To ensure that the academic, career and personal counseling are in-built into the system of curriculum delivery.
- To strengthen, develop and implement staff and student welfare programs.
- To adopt and implement principles of participation, transparency and accountability in governance of academic and administrative activities.
- To constantly display sensitivity and respond to changing educational, social, and community demands.
- To promote public-private partnership.

#### INSIGNIA



The Emblem of the KAHER is a Philosophical statement in Symbolic.

#### The Emblem...

A close look at the emblem unveils a pillar, a symbol of the "KAHER of Excellence" built on strong values & principles.

#### The Palm and the Seven Stars...

The Palm is the palm of the teacher- the hand that acts, promises & guides the students to reach for the Seven Stars...

The Seven Stars signify the 'Saptarishi Dnyanamandal", the Great Bear-a constellation made of Seven Stars in the sky, each signifying a particular Domain. Our culture says: The true objective of human birth is to master these Knowledge Domains.

The Seven Stars also represent the Saptarishis, the founders of KLE Society whose selfless service and intense desire for "Dnyana Dasoha" laid the foundation for creating the knowledge called KLE Society.

Hence another significance of the raised palm is our tribute to these great Souls for making this KAHER a possibility.

#### Empowering Professionals...

'Empowering Professionals', inscription at the base of the Emblem conveys that out Organization with its strength, maturity and wisdom forever strive to empower the student community to become globally competent professionals. It has been a guiding force for many student generations in the past, and will continue to inspire many forth coming generations.



### KLE Academy of Higher Education & Research

#### (Formerly known as KLE UNIVERSITY)

[Established under Section 3 of the UGC Act, 1956 vide Government of India Notification No. F. 9-19/2000-U.3(A)]
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Ref. No. KAHER/AC/22-23/D-28112246

10<sup>th</sup> November, 2022

#### NOTIFICATION

Sub: Ordinance governing the Competency Based Under-Graduate Curriculum for MBBS Phase-III (Part II)

Ref : Minutes of the meeting of the Academic Council of the KAHER held on 18<sup>th</sup> October, 2022.

In exercise of the powers conferred under Rule A-04 (i) of the Memorandum of Association of the KAHER, the Academic Council of the KAHER in its meeting held on **18<sup>th</sup> October, 2022** has approved the Ordinance governing the syllabus / curriculum of **Competency Based Under-Graduate Curriculum for the MBBS Phase-III (Part II)** 

The Ordinance shall be effective for the students admitted to **Competency Based Under-Graduate Curriculum for the MBBS Phase-III (Part II)** under the **Faculty of Medicine** in the constituent college of the KAHER viz. J. N. Medical College, Belagavi and **Jagadguru Gangadhar Mahaswamigalu Moorusavirmath Medical College, Hubballi** from the academic session **2019-20** onwards.

By Order Keller REGISTRAR

То

The Dean Faculty of Medicine, KAHER, BELAGAVI.

CC to :

- 1. The PA to Hon. Chancellor, KAHER, Belagavi.
- 2. The Special Officer to Hon, Vice-Chancellor, KAHER, Belagavi.
- 3. The Principal, J.N. Medical College, Belagavi.
- 4. The Principal, JGMMMC, Hubballi.
- 5. The Controller of Examinations, KAHER, Belagavi.
- 6. The Director, Academic Affairs, KAHER, Belagavi.
- 7. The Secretary, University Grants Commission, New Delhi,

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### Curriculum for Third Professional Year Part II of MBBS Degree course

#### **Preamble**

The National Medical Commission visualized that the Indian Medical Graduate, at the end of the undergraduate training program, should be able to recognize "health for all" as a national goal and should be able to fulfill his/her societal obligations towards the realization of this goal. To fulfill the mandate of the undergraduate medical curriculum which is to produce a clinician, who understands and is able to provide preventive, promotive, curative, palliative and holistic care to his patients, the curriculum must enunciate clearly the competencies the student must be imparted and must have learnt, with clearly defined teaching-learning strategies and effective methods of assessment.

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

As per the NMC recommendations, the thrust in the new regulations is continuation and evolution of the thought in medical education making it more learner-centric, patient-centric, gender sensitive, outcome -oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends.

The learners in the III/II Professional year will be learning about the diseases related to General Medicine and allied Subjects (Psychiatry, Dermatology venereology and leprosy, Respiratory medicine) General Surgery and allied Subjects (Orthopaedics ,Radiology and Anaesthesiology), Obstetrics and Gynaecology and Paediatrics, the clinical examinations skills, diagnosis and planning management.

They will be posted to clinical wards, OPDs, OT, other hospital settings to understand and acquire clinical skills along with basic administrative policies. Like previous professional years, emphasis will be made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment.

Skill acquisition is an indispensable component of the learning process in medicine. Since the learners are in Clinical postings, a significant attempt has been made in the curriculum with reinforcement on certification of certain essential skills, As per the recommendations in CBME booklet, various factors have been considered like, in patient availability, access, consent, number of students in a class etc. in suggesting skill acquisition and assessment methods; use of skills labs, simulated and guided environments are encouraged.

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

Electives are placed after completion of Year III Part I. These are posting of 15 days each in two blocks. These are opportunity to work in clinical setting, laboratory, research and in community

Apart from these, due importance is given to co-curricular, and Sports and Extra-curricular activities as well for the overall development of students. In addition to the above, Formative and internal assessments have been planned and aligned to achieve the objectives of the curriculum with minor tweaks to the summative assessment.

All the attempts have been made to make the curriculum student centered, providing opportunities for learners to learn in a safe and conducive environment, including all the aspects of Integration, skill acquisition, AETCOM competencies and Assessment, for the effective implementation of the new curriculum.

The syllabus/curriculum shall be effective for the students admitted to the MBBS degree course in the constituent college of the KLE Academy of Higher Education and Research (KAHER) ( Deemed to be University), J. N. Medical College, Belagavi, from academic session 2019-20 onwards, entering into Professional Year III/II, in academic session 2022-23 onwards.

### **Graduate Medical Education Regulation 2019 (GMER)**

#### Amendment Notification November 2019 (Ref No. MCI-34(41)/2019-Med./161726)

In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956 (102 of 1956), the Board of Governors in super-session of Medical Council of India with the previous sanction of the Central Government, made the following Regulations to further amend the "Regulations on Graduate Medical Education , 1997", namely:-

- (i) These Regulations may be called the "Regulations on Graduate Medical Education (Amendment),2019.
- (ii) They shall come into force from the date of their publication in the Official Gazette.

The provisions contained in Part II of these Regulations shall apply to the MBBS course starting from academic year 2019-20 onwards

#### Indian Medical Graduate Training Programme

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

#### National Goals

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

- (a) Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his/ her social obligations towards realization of this goal.
- (b) Learn every aspect of National policies on health and devote her/him to its practical implementation.

- (c) Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- (d) Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- (e) Become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

#### **Institutional Goals**

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

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

- (f) be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:
- (i) Family Welfare and Maternal and Child Health(MCH)
- (ii) Sanitation and water supply
- (iii) Prevention and control of communicable and non-communicable diseases
- (iv) Immunization
- (v) Health Education
- (vi) Indian Public Health Standards (IPHS), at various levels of service delivery
- (vii) Bio-medical waste disposal
- (viii) Organizational and/or institutional arrangements.
- (g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, hospital management, inventory skills and counselling.
- (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.
- be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
- (j) be competent to work in a variety of health care settings.
- (k) have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the Certifiable procedural skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate.

#### Goals and Roles for the Learner

In order to fulfil the goal of the IMG training programme, the medical graduate must be able to function in the following roles appropriately and effectively:-

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

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

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

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

- Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioural and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
- Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.
- Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission

(NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.

- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
  - Disease prevention,
  - Health promotion and cure,
  - Pain and distress alleviation, and
  - Rehabilitation.

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

#### Leader and member of the health care team and system

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

#### Communicator with patients, families, colleagues and community

Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care out comes.

- Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trust worthy.
- Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.
- Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making.

## Lifelong learner committed to continuous improvement of skills and knowledge

- Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
- Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
- Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.
- Demonstrate ability to search (including through electronic means), and critically evaluate the medical literature and apply the information in the care of the patient.
- Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

## Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession

- Practice selflessness, integrity, responsibility, accountability and respect.
- Respect and maintain professional boundaries between patients, colleagues and society.
- Demonstrate ability to recognize and manage ethical and professional conflicts.
- Abide by prescribed ethical and legal codes of conduct and practice.

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

#### Broad Outline on training format

In order to ensure that training is in alignment with the goals and competencies

There shall be a "Foundation Course" to orient medical learners to MBBS programme, and provide them with requisite medical knowledge, Good communication (including electronic), technical and language skills.

The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible in order to enhance learner's interest and eliminate redundancy and overlap.

Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case based learning.

Clinical training shall emphasize early clinical exposure, skill acquisition, certification in essential skills; community/primary/secondary care-based learning experiences and emergencies.

Training shall primarily focus on preventive and community based approaches to health and disease, with specific emphasis on national health priorities such as family welfare, communicable and non- communicable diseases including cancer, epidemics and disaster management.

Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories.

The development of ethical values and overall professional growth as integral part of curriculum shall be emphasized through a structured longitudinal and dedicated programme on professional development including attitude, ethics and communication.

Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Logs of skill-based training shall be also maintained.

Appropriate Faculty Development Programmes shall be conducted regularly by institutions to facilitate medical teachers at all levels to continuously update their

professional and teaching skills, and align their teaching skills to curricular objectives.

**Professional Year III part I (12 months)**: will consist of Para-clinical subjects namely Community Medicine, Forensic Medicine and Toxicology; clinical subjects Ophthalmology, Otorhinolaryngology (ENT) & Professional development including Attitude, Ethics & Communication (AETCOM) module and Pandemic module.

**Electives**: Electives are placed after completion of Year III Part I. These are posting of 15 days each in two blocks. These are opportunity to work in clinical setting, laboratory, research and in community to experience invaluable lessons that will have a long lasting effect on their professional life.

The electives are in two blocks. Block I provides basic science postings, offered by pre and para clinical subjects. Block II gives clinical experience. The electives list will be made available to the students at the beginning of Year III. The students can opt for two electives one in each block. The posting will be 15days each with 75% attendance minimum in each posting for the candidate to appear for examination of Year III Part II.

**Professional Year III Part II (13 months)]:** will consist of General Medicine, Pediatrics, General Surgery, Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties, Clinical postings/subjects and Attitude, Ethics & Communication Module (AETCOM)

Dedicated teaching hours are prescribed for all subjects which includes lectures, Small group learning (Tutorials / Seminars)/Integrated learning, Self- Directed learning, Clinical postings.

Didactic lectures shall not exceed one third of the schedule; two third of the schedule shall include interactive sessions, practicals, clinical or/and group discussions. The learning process should include clinical experiences, problem oriented approach, case studies and community health care activities.

The clinical exposure to learners will be in the form of **Learner -doctor method** of clinical training in all phases. The objective is to provide learners with experience in longitudinal patient care, being part of the health care team with hands-on care of patients in outpatient and inpatient setting .The emphasis will be on primary, preventive and comprehensive health care. A part of training during clinical postings

should take place at the *primary level* of health care. It is desirable to provide learning experiences in secondary health care, wherever possible. This will involve:

- Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,
- > Involvement in patient care as a team member,
- Involvement in patient management and performance of basic procedures.

Professional Development including Attitude, Ethics and Communication will be done through a modular approach (AETCOM Module) spread through out the year.

### Teaching Hours : For Third Professional Year Part I MBBS Course

#### Table No 1

Subjects	Teaching Hours	Tutorials/Seminars/ Integrated Teaching (hours)	Self- Directed Learning (hours)	Total (hours)
General Medicine	25	35	5	65
General Surgery	25	35	5	65
Obstetrics and Gynecology	25	35	5	65
Pediatrics	20	30	5	55
Orthopedics	15	20	5	40
Forensic Medicine and Toxicology	25	45	5	75
Community Medicine	40	60	5	105
Dermatology, Venereology & Leprosy	20	5	5	30
Psychiatry	25	10	5	40
Respiratory Medicine	10	8	2	20
Otorhinolaryngology	25	40	5	70
Ophthalmology	30	60	10	100
Radiodiagnosis and Radiotherapy	10	8	2	20
Anesthesiology	8	10	2	20
Clinical Postings*	-	-	-	756
Attitude, Ethics & Communication Module (AETCOM)		19	06	25
Total	303	401	66	1551

Subjects	Teaching hours	Tutorials/Seminars/ Integrated Teaching (hours)	Self-Directed Learning (hours)	Total (hours)
General Medicine	70	125	15	210
General Surgery	70	125	15	210
Obstetrics and Gynaecology	70	125	15	210
Paediatrics	20	35	10	65
Orthopaediatrics	20	25	5	50
Clinical Postings				792
Attitude, Ethics & Communication Module (AETCOM)	28		16	43
Electives				200
Total	250	435	60	1780

Table 2: Third Professional Part II Teaching Hours

SUBJECTS	Professional Year II	Professional Year III Part I	Professional Year III Part II	Total
General Medicine	25	65	210	300
General Surgery	25	65	210	300
Obstetrics and Gynaecology	25	65	210	300
Paediatrics		55	65	120
Orthopaedics		40	50	90
Dermatology, Venereology & Leprosy		30	-	30
Psychiatry		40	_	40
Respiratory Medicine		20		20
Radiodiagnosis		20		20
Anaesthesiology		20		20
AETCOM		25	43	68
Total	75	445	788	2096

Table 3; Total Number of Teaching Hours

#### **Clinical Course: Clinical Postings.**

During third to ninth terms, clinical postings of three hours duration daily as specified in the Table 4 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  $3^{rd}$  term.

	Period of training in weeks			
Subjects	II MBBS	III MBBS Part I	III MBBS Part II	weeks
Electives	-	-	8* (4 regular clinical posting)	4
General Medicine <sup>1</sup>	4	4	8+4	20
General Surgery	4	4	8+4	20
Obstetrics & Gynaecology <sup>2</sup>	4	4	8+4	20
Pediatrics	2	4	4	10
Community Medicine	4	6	-	10
Orthopedics-including Trauma <sup>3</sup>	Z	4	2	8
Otorhinolaryngology	4	4	-	8
Ophthalmology	4	4	-	8
Respiratory Medicine	2	-	-	2
Psychiatry	2	2	-	4
Radiodiagnosis <sup>₄</sup>	2	-	-	2
Dermatology, Venereology & Leprosy	2	2	2	6
Dentistry & Anaesthesia	-	2	-	2
Casualty	-	2	-	2
	36	42	48	126

#### Table 4 : Clinical postings

a) This posting includes exposure to laboratory medicine and infectious diseases.

- b) This posting includes training in Radio-diagnosis and Radiotherapy where existent.
- c) This posting includes exposure to Rehabilitation and Physiotherapy.
- d) This includes maternity training and the 3<sup>rd</sup> semester posting shall be in Family Welfare Planning..

**INTERNSHIP**: MBBS undergraduate students enter internship after successful completion of Phase III Part II Clinical Subjects. It is a compulsory one year period of rotatory training wherein a candidate is expected to do actual practice of medical and health care and acquire skills under supervision. It would enable him/her function independently as a unit of health and medical care system.

### Assessment

#### Eligibility to appear for Professional examinations

The performance in essential components of training are to be assessed, based on:

#### 1. Attendance

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

If an examination comprises more than one subject (for eg., General Surgery and Allied branches) the candidate must have 75% attendance in each subject in theory and 80% attendance in each clinical posting.

Learners who do not have at least 75% attendance in the electives and AETCOM will not be eligible for Third Professional Part-II examination.

#### 2 Eligibility to appear in Phase III/ II Examination

- a) Passing in II Professional Examination is not compulsory before entering for 6<sup>th</sup> term training; however passing of all subjects of II Professional Examination is compulsory for being eligible for III Professional Part I examination.
- b) Passing in III Professional Part I examination is not compulsory before entering for 8<sup>th</sup> and 9<sup>th</sup> term training, however passing of all subjects of III Phase - Part I examination is compulsory for being eligible, for III Phase Part II Examination
- **3 Internal Assessment**: Internal assessment shall be based on day-to-day assessment. It shall relate to different ways in which learners participate in learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/problem solving exercise, participation in project for health community, proficiency in carrying out a practical or a skill in small research project, a written test etc.

- a. Regular periodic examinations shall be conducted throughout the course. There shall be no less than three examinations in each clinical subject in III / II professional year. An end posting clinical assessment shall be conducted for each clinical posting in each professional year. When subjects are taught in more than one phase, the internal assessment must be done in each professional year not less than two examinations and must contribute proportionately to final assessment.
- b. The final internal assessment in a broad speciality shall comprise of marks from all the constituent specialities. The proportion of marks for each constituent speciality shall be determined by the time of instruction allotted to each.
- c. Theory : Minimum of three examinations is recommended. The examination preceding the university examination may be similar to the University (KAHER) examination. The marks allotted for internal assessment for different subjects is shown in Table 6 and 7 Average marks of all notified internal examinations should be reduced to the marks allotted for internal assessment for each subject and should be sent to the university in the given format(Table 5).
- d. Practical / Clinical : A minimum of one clinical test may be conducted at the end of each ward posting in all the clinical subjects. At least two ward leaving tests in Paediatrics, Orthopaedics, Ophthalmology and Otorhinolaryngology and three ward leaving tests in Medicine, Surgery and Obstetrics and Gynaecology are recommended. Second end posting test must include OSCE in addition to clinical test. Average of all examination marks should be taken into consideration while calculating the marks of the internal assessment.
- e. Day to **day records and log book** (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.
- f. Learners must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final

University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.

- g. The results of internal assessment should be displayed on the notice board within 1-2 weeks of the test. University shall guide the college regarding formulating policies for remedial measures for students who are either not able to score qualifying marks or have missed on some assessments due to any reason.
- Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.
- i. The internal assessment marks of 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.

## Table 5: Final Internal assessment Scores Tabulation (Theory &Practical)

Internal Assessment (IA)	Theory Max.	Marks	Practical	Marks
	Marks	Obtained	Max. Marks	Obtained
IA -1	100		100	
IA-2	100		100	
IA-3	200		200	
Formative Assessment			1	
Part completion tests	Integrated	20		
	SGT	40		
	SDL	20		
Certifiable skills			70	
Other than certifiable skills			05	
AETCOM skills	10		10	
Participation in SGT	10			
Co-Curricular and other academic activities			05	
Practical Record Book			05	
Log Book			05	
Total Marks	500		500	
Total IA Obtained				
(Out of 100)				
Grand Total			1	
(Aggregate of Theory and Practical)			/ 200	
(Minimum Eligibility = 50%)				

#### 4 University (KAHER) Examinations for Professional year Third part II shall be held as under:

- a. Third Professional Part II (Final Professional) examination shall be at the end of training in the subjects of General Medicine, General Surgery, Obstetrics & Gynecology and Pediatrics. Third Professional part II clinical postings shall start no later than two weeks after the completion of the previous professional examination.
- b. Passing in third Professional (Part I) examination is not compulsory before starting part II training; however, passing of third Professional (Part I) is compulsory for being eligible for third Professional (Part II) examination.

- c. One month is provided at the end of every professional year for completion of examination and declaration of results.
- d. The distribution of marks for theory and practical /clinical examination for various subjects of Third Professional Part II are shown in the following table

## Table 6 :Distribution of Theory Marks for University Examination ofThird Professional Part II

Subjects
----------

Subjects	Pediatrics	General Medicine	General Surgery	OBG
<b>1</b> .Written Paper: No of Papers and Maxim um marks for each paper*	1x100 = 100	2x100 = 200	2x100 = 200	2x100 = 200
Total Theory	100	200	200	200

#### ONE short answer question (3 marks) should be included in each subject (Paediatrics, General Medicine, General Surgery & OBG) on knowledgecompetencies acquired during AETCOM modules.

#### Note:

- 1. In the discipline of Orthopaedics, Anesthesiology, Dentistry and Radiodiagnosis will constitute 25% of the total theory marks incorporated as a separate section in paper II of General Surgery.
- 2. The discipline of Psychiatry and Dermatology, Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis will constitute 25% of the total theory marks in General Medicine incorporated as a separate section in paper II of General Medicine.

3. Written theory paper of University examination (KAHER) should include MCQ section which carries 20% of the total marks for the theory paper

## Table 7: Distribution of Clinical Marks for University Examination ofPhase III Part II Subjects

Subj ects	Pediatrics	General Medicine	General Surgery	OBG
1. Practical/ Clinical	80	160	160	160
2. Viva -voce	20	40	40	40
Total Clinical	100	200	200	200
Grand Total (Theory + Clinical)	200	400	400	400

At least one component (10 marks) of clinical/practical and viva-voce should assess skills- competencies acquired on AETCOM modules in each subject (Paediatrics, General Medicine, General Surgery & OBG).

- e. Criteria for passing in a subject: A candidate shall obtain 50% marks in University conducted examination separately in Theory and Practical (practical includes: practical/ clinical and viva voce) in order to be declared as passed in that subject.
- **f.** In subjects that have two papers, the learner must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass in the said subject.

#### 5. Declaration of Class

#### a. Distinction

A candidate having appeared in all the subjects in the same examination and passes 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. First Class

A candidate having appeared in all the subjects in the same examination and passes that examination in the First Attempt and secures 65% marks or more but less than 75% of grand total marks prescribed will be declared to have passed the examination in First Class.

#### c. Second Class

A candidate having appeared in all the subjects in the same examination and passes that examination in the First Attempt and secures 50% 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. Pass Class

A candidate passing a KAHER 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 classes (a), (b) and (c)).

#### 6. Supplementary Examination

Supplementary examination will be conducted within 90 days after the declaration of the results of the main examination. The failed student will have to appear in the subsequent year.

#### A learner shall not be entitled to graduate after 10 years of his/ her joining of the first part of the MBBS course.

### SYLLABUS FOR MEDICINE

#### 1. Preamble:

The goal of competency based medical education is to train a student to become a competent Indian Medical Graduate (IMG).

IMG should possess requisite knowledge, skills, attitudes, values and responsiveness, so that he/ she may function appropriately and effectively as a physician of first contact of the community, while being globally relevant. To fulfil this, IMG should be able to perform the following roles: a clinician, communicator, a life long learner, a professional and a team leader.

CBME aims to train IMG, in effective solving of case based scenario, perform complete and relevant physical examination, elicit and record complete and relevant history from patient and relevant sources, choose the appropriate diagnostic test and interpret it, generate differential diagnosis and management plans, prescribe and administer appropriate therapies, be aware of national and regional health care policies, medico-legal, social and ethical problems.

#### 2. GOAL.

A MBBS Graduate at the end of the course:

- 1. Should become a competent Doctor who is able to handle common medical problems of adults in the community, as the first contact physician.
- 2. Should be aware of National Health Program, National Medical Commission, state Medical Council regulations, medical ethics and etiquettes.

#### 3. OBJECTIVES

#### A. Cognitive

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

1. Understand the patho-physiology, epidemiological profile, signs and symptoms of diseases, investigations and management.

- 2. Should be able to order Appropriate investigations and interpret laboratory tests.
- 3. Initiate appropriate cost-effective treatment based on understanding of the rational drug prescriptions, medical interventions and preventive measures.
- 4. Follow up of patients with medical problems and refer to specialists whenever needed.
- 5. Communicate effectively, educate and counsel the patient and family.
- 6. Manage common medical emergencies and promptly refer to higher centers when required.
- 7. Demonstrate basic usage of information technology in medicine.

#### **B] Psychomotor:**

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

- 1. Elicit proper history, perform physical examination and make a clinical diagnosis.
- 2. Demonstrate the skills to understand medical emergencies and offer timely referral to higher centers after having instituted primary care.
- 3. Independently perform basic bedside investigations like hemogram, peripheral smear, urine routine, stool examination, sputum examination for AFB, recording ECG and Blood sugar level.
- 4. Demonstrate basic skills in procedures like administration of all types of injections, setting up IV infusion and calculating drip rate, Blood transfusion, Ryle's tube insertion, Urinary catheterization, Basic life support.
- 5. Assist basic procedures like pleurocentesis, peritoneocentesis, lumbar puncture and bone marrow aspiration.

#### C] Attitude /Communication

At the end of the course the students will be able to

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

- 2. Respect and maintain professional boundaries between patients, colleagues and society
- 3. Demonstrate ability to recognize and manage ethical and professional conflicts.
- 4. Abide by prescribed ethical and legal codes of conduct and practice.
- 5. Demonstrate a commitment to the growth of the medical profession as a whole.

#### 4. Integration:

Department shall provide an integrated approach towards allied disciplines like pre and para clinical departments, to provide basic patho-physiology basis to practice clinical medicine, integration with community Medicine to enable the students to view the patients in his/ her total physical, social and economic milieu and also to have basic knowledge about important current national health programmes. Integration with clinical departments will enable the students to understand the timely referral to appropriate specialty for better patients care and teamwork.

#### 5. AETCOM

- The Student should be able to communicate and counsel the patients and their families about the treatment and prognosis of various medical conditions.
- Student should be able to interpret and communicate the results of various investigations in medical practice.
- The student should be able to obtain informed consent.
- **6. Competencies:** The student must demonstrate ability to do the following in relation to common medical problems of the adult in the community:
  - 1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
  - 2. Competently interview and examine an adult patient and make a clinical diagnosis,
  - 3. Appropriately order and interpret laboratory tests,

- 4. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,
- 5. Follow up of patients with medical problems and refer whenever required,
- 6. Communicate effectively, educate and counsel the patient and family,
- 7. Manage common medical emergencies and refer when required,
- 8. Independently perform common medical procedures safely and understand patient safety

#### 7. Course Contents:

#### **TEACHING METHODS & HOURS**

#### Table-1

	Morning Theory lasses	SGT Small Group Teaching/ Practical Tutorials	SDL	Total	Bedside Clinics
2 <sup>nd</sup> Prof Year	25 Hours			25. Hours	4 Week
3 <sup>rd</sup> Prof Year Part- I	25 Hours	35 Hours	05 Hours	65.Hours	4 Week
3 <sup>rd</sup> Prof Year Part- II	70 Hours	125 Hours	15 Hours	210	12 Week
				Hours	
Total	120 Hours	160 Hours	20 Hours	300 Hours	20 Weeks

#### **Clinical Posting:**

#### Table-2

#### Teaching Hours of Medicine, Clinical Posting: 20 weeks.

Term	II Professional	III Professional year	III Professional year
	year	Part I	Part II
Weeks	4	4	8+4
Total		20 weeks	I

#### Learner doctor of clinical posting:

#### Table-3

Year of	Focus of Learner- Doctor Programme
Curriculum	
Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

- Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case-based learning.
- Didactic lectures not to exceed one-third of the total teaching time.
- The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible.
- Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories. Use of skill lab to train undergraduates.
- Newer Teaching Learning (T-L) method like Learner-doctor method (Clinical clerkship) should be implemented, from 1st clinical postings itself. The goal of this type of T-L activity is to provide learners with experience in longitudinal patient care, being part of the health care team, and participate in hands-on care of patients in outpatient and inpatient setting. During the 1st clinical postings, the students are oriented to the working of the department. During the subsequent clinical postings the students are allotted patients, whom they follow-up through their stay in the hospital, participating in that patient's care including case work-up, following-up on investigations, presenting patient findings on rounds, observing procedures, if any, till patient is discharged.
## **COURSE CONTENT**

Heart	Failure	15 Hrs
1.	Heart failure [IM 1.1, 1.2, 1.4, 1.6, 1.7, 1.23, 1.24]	
2.	Rheumatic Fever [IM 1.3, 1.9, 1.27]	
3.	Rheumatic Heart Disease [IM 1.1]	
4.	Infective Endocarditis [IM 1.21]	
5.	Atrial fibrillation [IM 1.8]	
6.	Cardiomyopathies [IM 1.1]	
7.	Congenital heart disease in adults	
Муос	ardial Infarction and Ischemic Heart Diseases	8 Hrs
1.	Atherosclerosis [IM 2.1, 2.2, 2.3, 2.4]	
2.	Acute coronary syndromes [IM 2.5, 2.13, 2.14, 2.15, 2.16, 2.19, 2.20, 2.23]	
3.	Cardiac rehabilitation [IM 2.17]	
4.	Management of dyslipidemia [IM 2.18]	
Pneu	monia	6 Hrs
1.	Community acquired pneumonia [IM 3.1, 3.2, 3.3, 3.15,3.16, 3.17, 3.19]	
2.	Hospital acquired pneumonia [IM 3.1, 3.2,3.3, 3.15, 3.16, 3.19]	
Fever	and Febrile Syndromes	23 Hrs
1.	Acute febrile illnesses [IM 4.1,4.2,4.4, 4.5, 4.18]	
2.	Fever of unknown origin [IM 4.4.8,4.16]	
3.	Sepsis syndrome [IM 4.7]	
4.	Gram positive infections (staphylococcus, streptococcus, diphtheria, clostridium,	
	[IM 4.3, 25.2, 25.3, 25.8]	
5.	Gram Negative infections( salmonella, shigella, vibrio, E.coli, brucella,	
	pseudomonas, leptospira, treponoma pallidum [IM 4.3, 16.1, 16.11, 16.12, 16.14]	
6.	Viral infections (dengue, chikungunya, varicella, herpes, rabies,	
	mumps,influenza)[IM 4.3, 25.1,25.2,25.3,25.8,]	
7.	Miscellaneous Infections including SARS COV-2 [IM 4.3, 25.1, 25.2, 25.3, 25.8]	
8.	Malaria and parasitic infections(Amoebiasis, giardiasis, pneumocystis carinii,	
	toxoplasma, ascariasis, ankylostoma duodenale, enterobius, echinococcus,	

Liver	Diseases	18Hrs
1.	Bilirubin metabolism and interpretation of Liver function tests [5.1, 5.14]	
2.	Viral Hepatitis [IM 5.2, 5.3, 5.4]	
3.	Cirrhosis of Liver including alcoholic liver diseases. [IM 5.2,5.3,5.5, 5.6, 5.16]	
4.	Complications of Cirrhosis of Liver [IM 5.6, 5.16]	
5.	Cholecystitis and cholelithiasis [IM 5.8]	
6.	Drug induced Liver dysfunction [IM 5.7]	
7.	Radioimaging in hepatobiliary system [IM 5.13]	
8.	Hepatitis vaccination and Liver transplantation. [5.17, 5.18]	
HIV		6 Hrs
1.	Definition, Pathogenesis, clinical features and management of HIV [6.1, 6.2, 6.3,	
	6.5, 6.11,6.16]	
2.	Post-Exposure prophylaxis in HIV [IM 6.17]	
3.	Opportunistic infections in HIV [IM 6.4,6.6,6.11,6.12,6.13, 6.18]	
4.	HIV related malignancies [IM6.5,6.6,]	
Rheu	matological disorders	16 Hrs
1.	Introduction to autoimmune disorders [IM 7.1, 7.2,7.3,7.4, 7.9]	
2.	Approach to Arthritis [IM 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.10, 7.13, 7.14,	
	7.15]	
3.	Rheumatoid Arthritis [IM 7.4, 7.5, 7.6, 7.7, 7.8, 7.19]	
4.	Gout and Osteoarthritis [IM 7.4, 7.5, 7.6, 7.7, 7.8,7.21]	
Нуре	rtension	6 Hrs
1.	Primary hypertension [IM8.1, 8.2, 8.3, 8.4, 8.7,8.8,8.12,8.13,8.148.20]	
2.	Secondary hypertension [IM8.5,8.7,8.12,8.13,8.20]	
3.	Hypertensive emergency and urgency [IM 8.6]	
4.	Need for specialist consultation in hypertension [IM 8.20]	
Anem	ia	12 Hrs
1	Classification etiologies clinical features and approach to the anemias [IM 9.1	
	9.2, 9.12]	
2.	Iron deficiency anemia [IM 9.8]	
3.	Vitamin B12 deficiency anemia [IM9.2]	
4.	Hemolytic and aplastic anemia [IM 9.2]	

5.	Blood transfusion [IM 9.17, 9.18]	
6.	Interpretation of hemogram and bone marrow findings [IM 9.7, 9.11, 9.21]	
Acute	Kidney Injury and Chronic Renal Failure	11 Hrs
1.	Acute kidney injury [IM 10.1, 10.2, 10.3,10.4,10.14, 10.15, 10.16, 10.17, 10.25]	
2.	Chronic renal failure [IM 10.5,10.6,10.7,10.10,10.11,10.18, 10.19, 10.20,10.26]	
3.	Renal Replacement therapy [IM 10.27, 10.28, 10.29, 10,30, 10.31]	
Diabe	etes Mellitus	8 Hrs
1.	Define, classify, etiopathogenesis of type 1 diabetes mellitus. [IM 11.1, 11.2, 11.10]	
2.	Type 2 Diabetes mellitus [IM 11.4, 11.16, 11.17, 11.18]	
3.	Complications of Diabetes mellitus [IM 11.5]	
4.	Diabetic Ketoacidosis [IM 11.23]	
5.	Diabetes emergencies [IM 11.6, 11.9, 11.15, 11.14, 11.22, 11.24]	
Thyro	id dysfunction	10 Hrs
1.	Physiology of thyroid hormones and hypothyroidism [IM 12.1, 12.2, 12.3, 12.12,	
	12.13]	
2.	Hyperthyroidism [IM 12.1, 12.2, 12.4, 12.15]	
Comm	non Malignancies	16 Hrs
Com	mon malignancies in India [IM 13.1,13.2,13.3,13.4, 13.12, 13.13, 13.14]	
1.	Lymphomas [IM 13.1,13.2,13.3,13.4]	
2.	Multiple myeloma [IM 13.1,13.2,13.3,13.4]	
3.	Leukemias [IM 13.1,13.2,13.3,13.4]	
4.	Curative and palliative care in cancer patient [IM 13.5, 13.6, 13.16, 13.17]	
Obesi	ty	14.Hrs
1.	Obesity [IM 14.1, 14.2,14.3,14.4, 14.5, 14.13, 14.14, 14.15]	
2.	Secondary causes of Obesity and investigations [IM 14.9, 14.10]	
Gastr	ointestinal bleeding	8.Hrs
1.	Upper GI bleeding [IM 15.1, 15.3, 15.10,15.11, 15.12, 15.14, 15.16]	
2.	Lower GI Bleed [IM 15. 1, 15.3, 15.10, 15.11, 15.16]	
3.	Acid-Peptic disorders and H.pylori infections [IM 15.9, 15.15, 15.17]	
4.	Radio imaging and surgical procedures in the management of Gastrointestinal Bleeding. [IM 15.10]	

Diarrl	nea disorders	6.Hrs
1.	Acute diarrhea [IM 16.1, 16.2, 16.6, 16.11, 16.14]	
2.	Chronic diarrhea [16.3, 16.12, 16.13]	
3.	Inflammatory Bowel Diseases [IM 16. 15, 16.16, 16.17]	
4.	Malabsorption syndromes [IM 16.3]	
Heada	ache	8.Hrs
1.	Headache [IM 17.1, 17.5,17.6, 17.10]	
2.	Migraine [IM 17.3, 17.11, 17.12]	
3.	Meningitis [IM 17.13,17.14]	
4.	Lumbar puncture [17.7,17.9]	
Cereb	rovascular Accidents	16.Hrs
1.	Functional and vascular anatomy of brain [IM 18.1]	
2.	Ischemic stroke [IM 18.11, 18.12, 18.13]	
3.	Hemorrhagic stroke [IM 18.11, 18.14, 18.15]	
4.	Stroke in young [IM 18.16]	
5.	Neurogenic Bladder [IM 18.8]	
Move	ment Disorders	8.Hrs
1.	Anatomy of locomotor system [IM 19.1]	
2.	Hyperkinetic movement disorder [IM 19.2, 19.9]	
3.	Parkinson and related diseases [IM19.3, 19.8]	
4.	Neuroimaging and diagnosis of movement disorders [IM 19.7]	
Enver	nomation	5 Hrs
1.	Snake Bite [IM 20.1, 20.3, 20.6, 20.7]	
2.	Scorpion Bite [IM 20.8]	
3.	Bee sting [20.8]	
Doico	ning	12 Ыкс
PUISU	Approach to patient of poisoning and stabilization [IM 21, 1]	12 115
1. 2		
2.		
3.	Corrosive poisoning [IM 21.3]	
4.	Drug over dosage [IM 21.4]	
5.	Other poisonings (Datura, paraquat, aluminum phosphide, heavy metal) [IM 21.2,	
	21.3]	
6.	Medico legal aspects of poisoning [IM 21.6]	

Miner	al, Fluid, electrolyte and Acid-Base Disorders	15.Hrs
1.	Primary hyperparathyroidism [IM 22.2]	
2.	Electrolyte Imbalance [IM 22.1, 22.3, 22.5, 22.6, 22.7, 22.8]	
3.	Acid-Base disorders [[IM 22.9, 22.10, 22.11, 22.12]	
4.	Multiple Endocrine Neoplasms [22.4]	
5.	Arterial Blood Gas(ABG) Interpretation [22.13]	
Nutrit	ion	13 Hrs
1.	Eat soluble Vitamins [TM 23.3]	
2	Water soluble Vitamins [IM 23 3]	
3	Nutrition in a hospitalized individual [IM 23.1.23.2.23.4]	
Geria	trics	20 Hrs
1.	Common disorders in elderly [24.1, 24.5, 24.7, 24.8, 24.11, 24.12, 24.16, 24.17,	
	24.18, 24.19, 24.20, 24.21, 24.22, 24.14 24.13, 24.10]	
2.	Dementia and Delirium in Elderly [IM 24.3, 24.6]	
3.	Geriatrics vascular events in elderly [IM 24.4]	
4.	Cerebrovascular events in elderly [IM 24.9]	
Misce	llaneous Infection	
1.	Zoonotic diseases [IM 25.1, 25.2, 25.3, 25.8]	
Role d	of Physician in Society	11.Hrs
1.	Roles and responsibilities of physician [IM 26.1, 26.2, 26.3, 26.4, 26.5, 26.6, 26,	
	10, 26.11, 26.12, 26.13, 26.16, 26.17, 26.22, 26, 23, 26.26, 26.27, 26.28, 26.32,	
	26.34, 26.40, 26, 45]	
2.	Ethical, socioeconomic, medico legal aspects of Organ donation, surgical	
	procedure. Research in human subjects. Physician-patient relation. Physician-	
	Industry relation, infertility, medical negligence and malpractice, of do not	
	resuscitate and withdrawal of life support [IM 26.14, 26.15, 26.16, 26.18, 26.33,	
	26.43. 26.44. 26.45. 26.47. 26.49]	
3	Personal and professional priorities management of time professional network	
	and career advancement for physician [IM 26 36 36 37 26 38 26 39 26 42]	
	Role of physician in health care team [IM $26.24, 26.25, 26.36, 26.35, 20.42]$	
, т <b>.</b>	26.32  26.34  26.41  26.481	
	20.32, 20.37,20.71, 20.70]	

#### 8. Assessment

#### **INTERNAL ASSESMENT**

- Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Log-book of skill- based training shall be also maintained.
- Day to day records and logbook (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.
- AETCOM assessment will include: (a) Written tests comprising of short notes and creative writing experiences, (b) OSCE based clinical scenarios / viva voce.
- The results of internal assessment should be displayed on the notice board within 1-2 weeks of the test. Remedial measures should be offered to students who are either not able to score qualifying marks or have missed on some assessments due to any reason. Learners must have completed the required certifiable competencies for that phase of training and entered in Medicine logbook, completion of logbook is mandatory for appearing for final university examination.

#### Theory;

• A minimum of two theory examinations will be conducted in each professional year 2<sup>nd</sup> Professional, 3<sup>rd</sup> Professional part 1 and three exams in 3<sup>rd</sup> Part 2 Professional year including prelims (total 7).

Total marks of 700 (IA + Formative assessment) which will be tabulated to 100.

#### Practical And Viva Voce

Practical / Clinical: Assessment will be done at the end of each clinical postings (2<sup>nd</sup> Professional Year-1, 3<sup>rd</sup> Part-1 Professional Year-1, 3<sup>rd</sup> Part II Professional Year- 2 & Prelims-1 as per University pattern), Second end posting test will be OSCE.

Total marks of 700 (IA + Formative assessment) which will be tabulated to 100.

## ASSESSMENT INTERNAL AND FORMATIVE ASSESSMENT Medicine & Allied Subjects

#### **THEORY AND PRACTICAL**

Internal Assessment (IA)		Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained		
2 <sup>nd</sup> Prof year	IA-I	IA —I	50		100		
		IA-II	50		1 100		
<b>3</b> <sup>rd</sup> part <b>I</b> Prof IA-II		IA-III	50		100		
year		IA-IV	50		100		
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100		
year		IA-VI	100 * (50		100 * (50		
			marks to be		marks to be		
			provided by		provided by		
		(Prelims)	200		200		
Formative Ass			ssment (Medi	cine & Allie	d)	1	
Part completion te	st	Integrated	20				
		SGT	40				
SDL		SDL	20				
Certifiable skills					70		
Other than certifia	ble skills				05		
AETCOM Skills	AETCOM Skills		10		10		
Participation in SG	Т		10				
Co-Curricular and	other acad	demic			05		
Activities Practical record					05		
					05		
Total Marks			700		700		
Total Peduced to	0 100 Ma	rkc	/ 10		/ 100		
Grand Total	0 100 Ma		/ 10				
(Aggregate of the	orv & Prac	tical's)	/ 200				
(Min.50%)		, and a set of the set	/ 200				
Eliaible —	Fligible –						
* Alliad aubiast		Marka	/				
Psychiatry			20				
Dermatology, vehered		iberculosis	10				
	nciuality tu	IDELCUIOSIS	<u> </u>				
lotal		50					

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving  $IA - I_1$ , IA - III & IA - III Scores.

# **University Examination**

#### **ELIGIBILLITY FOR EXAMINATION**

- The candidate must have undergone satisfactorily approved course of the study in the subject within prescribed duration.
- Should have at least 75 percent of attendance in theory and 80 percent in practical separately to become eligible to appear for the examination in the subject.
- Should have at least 40 percent of total marks fixed by internal assessment both in theory and practical individually.
- Should secure 50 percent in aggregate of total marks combined in theory and practical assigned for IA in the subject.

#### THEORY PAPER

#### Paper – I (General Medicine)

#### Max. Marks -100

#### Time 3 hours.

		Questions	Marks
1.	MCQ	20 X 1 Marks	20
2.	Long essay questions (LEQ)	2 X 10 Marks	20
3.	Short essay questions (SEQ)	9 X 5 Marks	45
4.	Short answers questions (SAQ)	5 X 3 Marks	15
		Total	100 Marks.

#### Paper – II (General Medicine & Allied)

#### Max. Marks -100

Max. Marks -100

#### Time 3 hours.

Section- A = 50 Marks (General Medicine) Section- B = 50 Marks (Dermatology, Venereology, Leprosy, Psychiatry & Respiratory Medicine including tuberculosis)

#### Time 3 hours.

<u>Section A</u> [Gen Medicine]				[Dermatology, \ Respiratory	<u>Section B</u> /enereology, Le Medicine includ	eprosy, Psy ing tubercu	chiatry & ılosis]
	Marks	Questions	Total		Marks	Questions	Total
MCQ	1	10	10	MCQ	1	10	10
Long Essay Questions	10	1	10	Long Essay Questions	10	1	10
Short Essay Questions	5	3	15	Short Essay Questions	5	3	15
Short Answers Questions	3	5	15	Short Answers Questions	3	5	15
		Total 50	) Marks.			Total 5	0 Marks

#### PAPER --I

- 1. Nutrition and vitamin deficiency
- 2. Obesity
- 3. Fever and febrile syndrome and miscellaneous infection
- 4. Diarrheal disorders
- 5. Human immune deficiency (HIV)
- 6. Anemia
- 7. Common Malignancies
- 8. Liver
- 9. GI bleeding
- 10. Heart Failure
- 11. Myocardial infarction and Ischemic heart disease
- 12. Hypertension
- 13. Diabetes mellitus
- 14. Thyroid
- 15. Poisoning and envenomation
- 16. Geriatric
- 17. Role of physician in community
- 18. AETCOM

#### PAPER-II

- 1. Headache
- 2. Cerebrovascular accident
- 3. Movement disorders
- 4. Fluid, electrolyte and Acid Base disorder
- 5. Acute kidney injury and chronic renal failure
- 6. Rheumatological disorders
- 7. Pneumonia
- 8. Psychiatry
- 9. Dermatology, Venereology & Leprosy
- 10. Respiratory Medicine including Tuberculosis

## **PRACTICAL/ CLINICAL EXAMINATION - General Medicine and Allied** <u>Specialities</u>

#### Clinical

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

#### Viva Voce

Consists of oral questions on approach to patient management, emergencies, attitudinal, ethical and professional values, candidate's skill in interpretation of common investigation data, X-ray & ECG, identification of specimen & Instruments, Prescriptions & drugs, etc.- 40 Marks.

#### TOTAL MARKS IN MEDICINE AND ALLIED SPECIALITIES

Subject	Paper I	Paper II	Total	Practical Examination	Viva Voce	Total	Grand Total
Medicine	100	100	200	160	40	200	400

SI. No	Name of the Textbook	Authors	Publisher
1	Davidson- Principles and practice of	Brian R Wlaker, Nicki	Churchill
	Medicine	R Colledge, Stuart H	Livingstone, London
		Ralston, lan Penman	
2	API Test Book of Medicine	Y P Munjal, Sundar	API, Mumbai
		K Sharma	
3	Hutchison- Clinical Methods	Michael Glynn,	W B Saunders
		William M Drake	
4	Kumar & Clark Clinical Medicine	Parveen Kumar	Saunders
		Michael L Clark	
5	Cecils Textbook of Medicine	Andrew I Shafer,	W. B. Saunders
		Russel L Cecil	
6	Chamberlain's symptoms and signs in	Andrew R Houghton,	Ogilvie & Christopher
	clinical medicine	David Grey	(Butterworth H)
7	Vakil & Golwala Text Book of	Rustom Jal Vakil,	Leading Promoters &
	Medicine	Aspi F Golwalla	Pvt. Ltd.
8	Macieod's clinical examination ISE	Graham Dougles,	Churchill
		Fiona Nicol, Colin	Livengstone
		Robertson	
9	Allagappan Manual of Practical	R Alagappan	Јаурее
	Medicine		

# 9 Recommended Books (Latest editions)

# **DEPARTMENT OF PSYCHIATRY**

#### 1. GOAL:

The aim of teaching the undergraduate student in Psychiatry is to impart such knowledge and skills that may enable to identify diagnose and treat Common Psychiatric Disorders, handle Psychiatric Emergencies and to refer Complicated/ Unusual manifestations of Psychiatric Disorders to the specialist.

#### 2. OBJECTIVES:

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

- 1. Comprehend nature and development of different aspects of normal human behaviour like Learning, Memory, Motivation, Personality and Intelligence.
- 2. Recognize difference between Normal and Abnormal Behaviour
- 3. Classify Psychiatric Disorders.
- 4. Recognize clinical manifestations of common psychiatric syndromes and plan their appropriate management.
- 5. Describe rational use of different modes of therapy in Psychiatric Disorders.

#### 3. Competencies

COGNITIVE Domain

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

- 1. Comprehend the nature and development of different types of normal human behaviour like Learning, Memory, Motivation, Personality and Intelligence. .(PS2.3,PS2.4,PS15.2)
- 2. Recognize difference between Normal and Abnormal Behavior.(PS2.5)
- 3. Classify Psychiatric Disorders and understand Bio-Psycho-Social Parameters in the causation & sustenance of these disorders(PS3.6)

- 4. Recognize clinical manifestations of the following common syndromes and plan their appropriate management. Organic Psychosis, Functional Psychosis, Schizophrenia, Bipolar Mood Disorders, Anxiety & Related Disorders, Depression & Related Disorders, Personality disorders, Psycho/ Physiological Disorders, Drug and Alcohol abuse & Dependence, Psychiatric Disorders of Childhood and Adolescence, Psychiatric Disorders in the Elderly.
- 5. Describe rational use of different modes of Therapy in Psychiatric Disorders, like Pharmacotherapy, Psychotherapy, Behaviour-therapy, Electro Convulsive Therapy.(PS18.3,18.2)

#### **PSYCHOMOTOR:**

The student shall be able to

- 1. Interview the patient and understand different methods of communications in patient doctor relationship.(PS1.1,PS1.2)
- 2. Elicit detailed Psychiatric Case History. (PS1.1,PS3.4)
- 3. Examine and assess Mental State of the patient.(PS3.3)
- 4. Define, elicit and interpret Psycho-pathological Symptoms and Signs. .(PS3.3)
- 5. Diagnose and Manage Common Psychiatric Disorders. (.(PS3.3)
- Identify and manage Psychological Reactions and Psychiatric Disorders in Medical and Surgical patients in clinical practice and in community setting. (PS3.10,PS18.1)
- 7. Would have observed procedures like Modified Electro Convulsive Therapy.(PS4.2,PS4.3,PS4.4,PS4.5)
- 8. Would have observed Psychological testing like Intelligence Tests. (PS3.7, PS3.8, PS3.9).
- 9. Counsel the patient and the family members about the disease process.(PS3.9,PS4.5,PS5.4,PS6.5)
- 10. Demonstrate the process of breaking the bad news.(PS1.3)

- 11. Would have procedures like Modified Electro convulsive therapy.(PS18.2)
- 12. Would have observed Psychological testing like intelligent tests(PS15.2)

## AFFECTIVE:

- 1. Establish rapport and empathy with patients(PS1.1)
- 2. Describe components of communication(PS1.2)
- 3. Demonstrate Breaking bad news in simulated Environment(PS1.3)
- 4. Describe and demonstrate the importance of Confidentiality in patient encounters(PS1.4)

#### 4. INTEGRATION:

Training in Psychiatry shall prepare the students to deliver Preventive, Promotive, Curative and Rehabilitative service for the care of patients both in the family and community and to refer advanced cases to a centre specialized in Psychiatry. Training should be integrated with the departments of Medicine, Neurology, Paediatrics, Forensic Medicine and Paediatrics.

## 5. COURSE CONTENT:

#### **Teaching Hours**

Subject	Lecture hours	Small group teaching / tutorials / integrated learning / practical (hours)	Self directed learning (hours)	Total (hours)
Second Professional Year				
Third Professional Year Part First	25 hrs	10 hrs	5 hrs	40 hrs
Total	25 hrs	10 hrs	5 hrs	40 hrs

#### **Clinical Postings**

Subject	Period of tr			
	II	III	III Professional	Total
	Professional	Professional	year <b>Part II</b>	Weeks
	year	year <b>part I</b>		
Psychiatry	2	2		4 weeks

- It is recommended that didactic teaching be restricted to less than one third of the total time allotted for that discipline.
- Greater emphasis is to be laid on hands-on training, symposia, seminars, small group discussions, problem-oriented and problem-based discussions and self- directed learning.
- Students must be encouraged to take active part in and shared responsibility for their Learning
- Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case-based learning.
- Didactic lectures not to exceed one-third of the total teaching time. The teaching learning activity focus should be on application of knowledge rather than acquisition of knowledge.
- The clinical postings shall be 15 hours per week (3 hrs. per day) from Monday to Friday.

#### Theory

- 1. Introduction to psychiatry (PS3.1, PS3.6). 2Hr (CORE)
  - PS3.1 Describe the growth of Psychiatry as a medical specialty, its history & contribution to society
  - o PS3.6 Describe & discuss biological, psychological and social factors & their interactions in causation of mental illness.

- 2. Eliciting a detailed psychiatric history and conducting Mental Status Examination. (PS3.2, PS3.3, PS3.4, PS3.5). 2Hr (CORE)
  - o PS3.2 Enumerate, describe and discuss important signs & symptoms of common mental disorders
  - o PS3.3 Elicit, present and document a history in patients presenting with a mental disorder
- 3. Behavior & Psychology. (PS2.3, PS2.4, PS2.5) 2Hr (CORE)
  - PS 2.3 Define & describe the principles & components of Learning, Memory and emotions.
  - o PS2.4 Describe the principles of personality development & motivation.
  - o PS2.5 Define & distinguish normality & abnormality
- 4. Classification of Psychotic & Non-Psychotic disorders. (PS3.12) 1hr (CORE)
  - PS3.12 Describe, discuss and distinguish psychotic & non-psychotic (Mood, Anxiety, Stress related) disorders.
- 5. Clinical features, diagnoses and management of:
  - A) Schizophrenia. (PS5.2.PS5.3) 2Hr (CORE)
  - PS5.2 Enumerate, elicit, describe & document clinical features of Schizophrenia.
  - PS5.3 Describe the treatment of schizophrenia including behavioral & pharmacological therapy.
  - B) Bipolar Mood disorders. (PS7.2, PS7.4) 2Hr (CORE)
  - PS7.2 Enumerate, elicit, describe & document clinical features in patients with bipolar disorders.
  - PS7.4 Describe the treatment of bipolar disorders including behavioral & pharmacological therapy.
  - C) Anxiety disorders. (PS8.2, PS8.4) 2Hr (CORE)
  - o PS8.2 Enumerate, elicit, describe & document clinical features in patients with anxiety disorders.

- PS8.4 Describe the treatment of anxiety disorders including behavioral & pharmacological therapy.
- D) Somatoform and Dissociative Disorder. (PS10.2, PS10.4) 2Hr (CORE)
- o PS10.2 Enumerate, elicit, describe & document clinical features in patients with somatoform, dissociative & conversion disorders
- o PS10.4 Describe the treatment of somatoform disorders including behavioral, psychosocial & pharmacological therapy.
- E) Alcohol and Substance Abuse & Dependence Disorders. (PS4.2, PS4.4) 2Hr(CORE)
- PS4.2 Elicit, describe & document clinical features of alcohol & substance use disorders
- o PS4.4 Describe the treatment of alcohol & substance use disorders including behavioral & pharmacological therapy.
- F) Depressive Disorders. (PS6.2.PS6.4) 2Hr (CORE)
- PS6.2 Enumerate, elicit, describe & document clinical features in patients with depressive disorders
- o PS6.4 Describe the treatment of depressive disorders including behavioral & pharmacological therapy.
- G) Organic Brain Disorders (Dementias). (PS3.7, PS3.8, PS16.1) 2Hr (CORE)
- PS3.7 Enumerate & describe common organic psychiatric disorders, magnitude, etiology & clinical features
- PS3.8 Enumerate & describe the essential investigations in patients with organic disorders
- o PS16.1 Enumerate & describe clinical features of dementia.
- 6. Psychiatric emergencies. (PS17.1, PS17.2) 2Hr (CORE)
  - PS17.1 Enumerate & describe the recognition & clinical presentation of psychiatric emergencies (suicide, deliberate self-harm, violent behavior)
  - PS17.2 Describe the initial stabilization & management of psychiatric emergencies

- 7. Psychiatric disorders of Childhood and Adolescence (PS14.2, PS15.3) 4Hr (CORE)
  - o PS14.2 Enumerate, elicit, describe & document clinical features in patients with psychiatric disorders occurring in childhood & adolescence
  - o PS15.3 Elicit & document history & clinical examinations & choose appropriate investigations in patient with mental retardation
- 8. Use of Intelligence Tests. (PS15.2) 1Hr (CORE)
  - o PS15.2 Describe & discuss intelligent quotient & its measurement.
- 9. Drugs used in Psychiatry. (PS18.1) 2Hr (CORE)
  - PS18.1 Enumerate the indication & describe the pharmacology, dose
     & side effects of commonly used drugs in psychiatric disorders.
- 10. Overview of Non-Pharmacological Treatment in Psychiatry. (PS18.3) 2Hr (CORE)
  - PS18.3 Enumerate & describe the principals & role of psychosocial interventions in psychiatric illness including psychotherapy, behavioral therapy & rehabilitation.
- 11. Electro Convulsive Therapy. (PS18.2) 2Hr (CORE)
  - o PS18.2 Enumerate indications of modified Electroconvulsive therapy.
- 12. Stress and Health, Examination related stress. (PS2.1, PS2.2) 2Hr (CORE)
  - o PS2.1 Define stress & describe components and causes.
  - o PS2.2 describe the role of time management, study skills, balanced diet and sleep-wake habits in stress avoidance
- 13. Suicide. (PS17.1) 3Hr (CORE)
  - o PS17.1 Enumerate & describe the recognition & clinical presentation of patients attempting Suicide.
- 14. Liaison Psychiatry. (PS3.11) 1Hr (CORE)
  - PS3.11 Enumerate the appropriate conditions for specialist referral in patients with psychiatric disorders.

- 15. Psychosexual disorders (PS13.2) 1Hr (CORE)
  - o PS13.2 Enumerate, elicit, describe & document clinical features in patients with psychosexual & gender identity disorders
  - PS13.4 Describe the treatment of behavioral, psychosocial & pharmacological management of psychosexual & gender identity disorders

#### • SKILLS

To do psychiatric evaluation and recognize common psychiatric illnesses

# Practical's/ tutorials/ small group discussions/ integrated teaching:

## SGT (Small group teaching) classes (10 hours)

- 1) Psychopathology
- 2) Aggression
- 3) Breaking bad news
- 4) Developing rapport & Confidentiality in clinical practice
- 5) Interviewing skills & Eliciting signs & symptoms

## SDL classes (5 hours)

- 1) Suicide risk assessment
- 2) Assessment & management of Depression
- 3) Assessment of alcohol dependence & management of withdrawal symptoms

#### 6. CURRICULUM:

#### I) THEORY.

Didactic lectures of one-hour duration once a week.

Small group discussion (SGD) of two hours' duration as an afternoon session.

Self-directed learning (SDL) of two hours' duration as an afternoon session.

Topics	Lectures	SGT	SDL	Grand Total Hrs
	Duration:	Duration: 2	Duration: 2 Hrs	
	1Hr	Hrs		
Introduction to psychiatry	1	2		3
Eliciting a detailed psychiatric history and conducting Mental Status Examination.		2		2
Behavior & Psychology.	1			1
Classification of Psychotic & Non- Psychotic disorders	1			1
Depressive disorders	1		2	3
Schizophrenia	1	1		2
Anxiety disorders	1	1		2
Bipolar disorders	1	1		2
Somatoform & dissociative disorders	1	1		2
Alcohol, substance abuse & dependence disorders	1		2	3
Organic brain disorders (Dementias)	1			1
Psychiatric emergencies	1	2		3
Child & Adolescent Psychiatry	3			3
Intelligence tests	1			1
Drugs used in Psychiatry	2			2
Non-pharmacological treatment in Psychiatry	1			1
Psychosexual disorders	1			1
Electro Convulsive Therapy	2			2
Stress & exam related stress	2			2
Suicide	1		2	3
Liaison Psychiatry	1			1

#### 7. Assessment

#### Internal Assessment :

**Theory :** one theory examination will be conducted at the end of  $3^{rd}$  professional year part 1

**Practical /Clinical :** two end postings tests will be conducted at the end of II Professional year and at the end of III Professional year Part I

## INTERNAL AND FORMATIVE ASSESSMENT Medicine & Allied Subjects

Internal Assessment (IA)			Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained
2 <sup>nd</sup> Prof year IA-I		IA –I	50		100	
		IA-II	50		100	
3 <sup>rd</sup> part I Prof	IA-II	IA-III	50		100	
year		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100	
year		IA-VI	100 * (50		100 * (50	
			marks to be		marks to be	
		-	provided by		provided by	
		(Prelims)	200		200	
	For	native Asse	ssment (Med	licine & Allie	d)	1
Part completion tes	st	Integrated	20			
		SGT	40			
		SDL	20			
Certifiable skills					70	
Other than certifial	ble skills				05	
AETCOM Skills			10		10	
Participation in SG	Г		10			
Co-Curricular and c activities	other acad	demic			05	
Practical record					05	
Log Book					05	
Total Marks			700		700	
Total Reduced to	o 100 Ma	irks	/ 100 / 100		00	
Grand Total (Aggregate of theory & Practical's) (Min.50%)				/ 2	00	
Eligible –				YES /	' N <mark>O</mark>	
* Allied subject			Marks			
Psychiatry			20			
Dermatology, Venereology & Leprosy			20			
Respiratory Medicine including Tuberculosis			10			
Total			50			

## THEORY AND PRACTICAL

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA - I, IA - II & IA - III Scores.

# **UNIVERSITY EXAMINATION:**

• Questions on Psychiatry will be asked in the Medicine paper 2 section b which will carry 20 marks.(There is no separate paper in Psychiatry)

#### **Text Books Recommended**

- 1. Gelder M, Shorter Oxford Textbook of Psychiatry, Ed 4 Oxford University Press, Latest Edition
- 2. Niraj Ahuja, Text Book of Psychiatry, Ed 5, Jaypee Brothers Medical Publisher, Latest Edition

#### Additional Books Recommended

1. Kaplan HI and Saddock BJ, Synopsis of Textbook of Psychiatry. New Delhi, Waverly Pvt Ltd, Latest Edition.

# DEPARTMENT OF DERMATOLOGY, VENEREOLOGY & LEPROSY

#### 1. GOAL

The aim of teaching the undergraduate student in Dermatology, Venereology and Leprosy is to impart such knowledge and skills that may enable an Indian medical graduate to diagnose and treat common ailments and to be able to refer rare diseases or complications / unusual manifestations of common diseases, to the specialist.

#### 2. Subject Specific Objectives

#### A. Cognitive domain/ Knowledge

At the end of the course of Dermatology, Venereology and Leprosy an Indian medical graduate shall be able to achieve the following competencies:

- Demonstrate sound knowledge of common diseases, their clinical manifestations, including emergency situations and of investigative procedures to confirm their diagnosis;
- Demonstrate comprehensive knowledge of various modes of topical therapy;
- Describe the mode of action of commonly used drugs, their doses, side-effects/toxicity, indications and contra-indications and interactions.
- 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.
- Diagnose and manage emergencies specially recognizing the need for referral when appropriate and necessary.
- Describe the etiology, diagnostic and clinical features of non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV).
- Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV).

- Describe the syndromic approach to ulcerative sexually transmitted disease.
- Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema.
- Enumerate the indications and describe the pharmacology indications and adverse reactions of drugs used in the urticaria and angioedema.
- Enumerate the causative and risk factors of acne.
- Describe the treatment and preventive measures for various kinds of acne.
- Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy.
- Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination.
- Identify and distinguish herpes simplex and herpes labialis from other skin lesions.
- Identify and distinguish herpes zoster and varicella from other skin lesions.
- Identify and distinguish viral warts from other skin lesions.
- Identify and distinguish molluscum contagiosum from other skin lesions.
- Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma.
- Enumerate the indications an describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines.
- Describe and distinguish skin lesions of SLE.
- Describe and distinguish Raynaud's phenomenon.
- Describe the dermatologic manifestations of HIV, its complications including opportunistic infections.

- Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin.
- Describe the risk factor, pathogenesis, pathology and natural history of basal cell carcinoma of the skin.
- Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors, morphology, clinical features and metastases of melanoma.

#### **B.** Psychomotor Domain

An Indian medical graduate shall be able to achieve the following competencies:

- Interview the patient, elicit relevant and correct information and describe the history in a chronological order;
- Conduct clinical examination, elicit and interpret physical findings and diagnose common disorders and emergencies;
- Perform simple, routine investigative and laboratory procedures required for making bedside diagnosis.
- Manage common diseases recognizing the need for referral for specialized care in case of inappropriateness of therapeutic response.
- To be able to identify primary and secondary skin lesions with examples.
- To be able to elicit Auspitz sign in a case of psoriasis vulgaris.
- To be able to demonstrate Wickham's striae in a case of Lichen planus.
- To be able to identify burrows in a case of scabies and differentiate scabies from other lesions in adults and children.
- To be able to do KOH mount and identify superficial fungal infections.
- Ennumerate the indications, describe the procedure of Tzank smear.
- To be able to identify varicella / herpes zoster from other skin lesions.
- To be able to identify vitiligo by woods lamp examination.

- To be able to identify and grade acne vulgaris.
- To be able to collect sample for pus culture sensitivity & gram stain in a case of pyoderma.
- Identify and distinguish Folliculitis impetigo and carbuncle from other skin lesions.
- To be able to classify leprosy clinically according to Ridley Jopling classification SSS.
- To be able to perform nerve examination in a case of leprosy.
- To be able to demonstrate Nikolsky's sign in a case of pemphigus vulgaris.
- To be able to demonstrate bulla spread sign in bullous pemphigoid.
- To be able to identify Lepra reactions and enumerate the clinical features.
- To be able to identify various deformities seen in leprosy.
- Enumerate the indications and observe the performance of a slit skin smear in patients with leprosy.
- To be able to demonstrate dermographism in a case of urticaria.

#### C. Affective Domain/AETCOM

At the end of the course, an Indian medical graduate should have acquired the following attitudinal competencies:

- Demonstrate self-awareness and personal development in routine conduct.
- **Behavior and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations and shows positive approach.
- **Motivation and Initiative:** Is innovative, enterprising, does not shirk duties or leave any work pending and motivates team members.
- **Honesty and Integrity:** Is truthful, admits mistakes, does not cook up information, has ethical conduct and exhibits good moral values.

- **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.
- Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities.
- Organize and supervise the desired managerial and leadership skills.
- Counsel in a non-judgmental and empathetic manner patients on prevention of sexually transmitted disease.
- Counsel a case of leprosy in an empathetic manner patients on prevention of deformities.

#### 3. Integration

Department shall provide an integrated approach towards allied disciplines like pre and para clinical departments, to provide basic patho-physiology basis to practice clinical dermatology, integration with community Medicine to enable the An Indian medical graduate to view the patients in his / her total physical, social and economic milieu and also to have basic knowledge about important current national health programmes. Integration with clinical departments will enable the students to understand the timely referral to appropriate specialty for better patients care and teamwork.

#### 4. Course Contents

#### **TEACHING METHODS & HOURS**

	Theory classes	SGT Small Group Teaching/ Practical Tutorials	SDL	Total
3 <sup>rd</sup> Prof Part- I	None	None	None	None
3 <sup>rd</sup> Prof Part - II	20 hours	5 hours	05 hours	30 hours

# **Clinical Postings**

Dermatology, Clinical Postings:							
Subjects Period of training in weeks							
	II MBBS	III MBBS Part I	III MBBS Part II	Total			
Dermatology, Venereology	2 weeks	2 weeks	2 weeks	06 weeks			
& Leprosy							

# 5. Dermatology, Venereology & Leprosy Course Contents

I.(AN 4.2, AN 4.4, AN 4.5) Introduction (CORE)	1 hour
Structure and functions of skin and its appendages.	
Morphology of skin lesions.	
(NON-CORE)	
Principles of skin incisions	
II. Infective Disorders and Infestations of skin	1 hour
1) (DR 15.1-15.4), MI 7.2	
Bacterial infections of Skin_(CORE)	
Classification of etiopathogenesis, diagno sis and management, treatment of pyoderma, and soft tissue infection	
A) Pyoderma: -	
a) Non – follicular :-	
- Impetigo	
- Echthyma	
- Cellulitis	
- Erysipelas	
b) Follicular: -	
- Superficial folliculitis	
- Deep folliculitis	
- Furuncle	
- Carbuncle	
B) Non – Pyoderma :-	
- Erythrasma	
- Pitted Keratolysis	

2 )_(DR 8.1-8.7) Viral infections of Skin_(CORE)	1 hour
a) Herpes simplex infection	
b) Varicella zoster virus infection	
c) Human papilloma virus infection (Warts)	
d) Molluscum contagiosum	
3) ( DR 7.1-7.3)Fungal infections of Skin (CORE)	3 hours
a) Dermatophytosis	
b) Pityriasis versicolor	
c) Candidiasis	
4) (DR5.1-5.3, DR 6.1-6.2) Ectoparasitic diseases (CORE)	1 hour
a) Scabies	
b) Pediculosis	
III. (DR 12.1 -DR 12.6, PE 31.4) Eczema (CORE)	
	2 110015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema</li> </ol>	2 10015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> </ul> </li> </ol>	2 110015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> <li>Endogenous eczema</li> </ul> </li> </ol>	2 10015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> <li>Endogenous eczema</li> <li>Pityriasis Alba</li> </ul> </li> </ol>	2 110015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> <li>Endogenous eczema</li> <li>Pityriasis Alba</li> <li>Lichen simplex chronicus</li> </ul> </li> </ol>	2 110015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> <li>Endogenous eczema</li> <li>Pityriasis Alba</li> <li>Lichen simplex chronicus</li> <li>Atopic dermatitis</li> </ul> </li> </ol>	2 110015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> <li>Endogenous eczema</li> <li>Pityriasis Alba</li> <li>Lichen simplex chronicus</li> <li>Atopic dermatitis</li> <li>Seborrheic Dermatitis</li> </ul> </li> </ol>	2 110015
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> <li>Endogenous eczema</li> <li>Pityriasis Alba</li> <li>Lichen simplex chronicus</li> <li>Atopic dermatitis</li> <li>Seborrheic Dermatitis</li> </ul> </li> <li>IV. (DR 13.1-DR 13.3) Vesiculobullous diseases (CORE)</li> </ol>	1 hour
<ol> <li>Etiopathogenesis, grading and therapeutics in eczema</li> <li>Exogenous eczema         <ul> <li>Contact dermatitis</li> <li>Endogenous eczema</li> <li>Pityriasis Alba</li> <li>Lichen simplex chronicus</li> <li>Atopic dermatitis</li> <li>Seborrheic Dermatitis</li> </ul> </li> <li>IV. (DR 13.1-DR 13.3) Vesiculobullous diseases (CORE)         <ul> <li>Pemphigus vulgaris</li> </ul> </li> </ol>	1 hour

V. DR 3.2-DR 3.3, DR 4.1-4.2, DR 12.5, 12.6)	1 hour
Papulosquamous disorders (CORE)	
1. Psoriasis	
2. Lichen planus	
VI. (DR 1.1-1.3) Disorders of Sebaceous and Sweat glands (CORE)	1 hour
1. Acne vulgaris	
VII. (DR. 17.1- DR 17.4) Nutritional dermatosis (CORE)	1 hour
Cutaneous features due to deficiency of vit. A,B,C and zn and its mangement	
1. Pellagra	
2. Phrynoderma	
3. Protein energy Malnutrition	
4. Acrodermatitis enteropathica	
5. Scurvy	
VIII. (DR 9.1-DR 9.7) Leprosy (CORE)	4 hours
Epidemiology, Structure of M. leprae, Pathogenesis, Classification of Leprosy, Clinical features, Reactions, Deformities, Diagnosis, Management and Control of Leprosy.	
IX. (DR. 10.1-DR 10.11, DR 11.1-DR 11.3, MI 7.2)	5 hours
Sexually Transmitted and HIV Infections (CORE)	
<ol> <li>Introduction to Sexually Transmitted Infections &amp; Syndromic Case Management.</li> </ol>	
<ol> <li>Syphilis, Chancroid, Lympho-granuloma venereum, Donovanosis, Gonorrhoea, Genital Herpes, Genital Warts.</li> </ol>	
3. Etiopathogenesis, classification of HIV and opportunistic infection of Cutaneous Manifestations of HIV, pharmacotherapy for HIV with ADR of drugs in HIV.	

X. (DR 2.1- DR 2.2) Pigmentary Disorders (CORE)	1 hour
1. Etiopathogenesis, diagnosis and management of Vitiligo	
(NONCORE)	
2. Hyperpigmentary disorders – Melasma	
XI. (DR 14.1-DR 14.5) Urticaria and Angieoderma (CORE)	5 hours
<ol> <li>Etiology, pathogenesis and classification of urticaria and angioedema</li> <li>Decomposition</li> </ol>	
<ol> <li>Dermographism</li> <li>Bharmasotherapy of drugs in management of urtic aria</li> </ol>	
and angioedema	
4. Drugs causing urticaria angioedema	
XII. (DR 12.7) Drug Reactions including (CORE)	
1. Erythema Multiforme	
2. Stevens Johnson Syndrome	
3. Toxic Epidermal Necrolysis	
4. FDE	1 hour
	THOUL
XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)	1 hour
XIII. (DR 12.5-DR 12.6) Erythroderma (CORE) XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)	1 hour 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> </ul>	1 hour 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> </ul>	1 hour 1 hour 2 hours
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> </ul>	1 hour 1 hour 2 hours
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> <li>XVII. (PA 34.1 -PA 34.4) Benign and malignant skin lesion</li> </ul>	1 hour 1 hour 2 hours 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> <li>XVII. (PA 34.1 -PA 34.4) Benign and malignant skin lesion (CORE)</li> </ul>	1 hour 1 hour 2 hours 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> <li>XVII. (PA 34.1 -PA 34.4) Benign and malignant skin lesion (CORE)</li> <li>SCC</li> </ul>	1 hour 1 hour 2 hours 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> <li>XVII. (PA 34.1 -PA 34.4) Benign and malignant skin lesion (CORE)</li> <li>SCC</li> <li>BCC</li> </ul>	1 hour 1 hour 2 hours 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> <li>XVII. (PA 34.1 -PA 34.4) Benign and malignant skin lesion (CORE)</li> <li>SCC</li> <li>BCC</li> <li>Melanoma</li> </ul>	1 hour 1 hour 2 hours 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> <li>XVII. (PA 34.1 -PA 34.4) Benign and malignant skin lesion (CORE)</li> <li>SCC</li> <li>BCC</li> <li>Melanoma</li> <li>Benign tumors of Skin, risk factor, pathogenesis and diagnosis</li> </ul>	1 hour 1 hour 2 hours 1 hour
<ul> <li>XIII. (DR 12.5-DR 12.6) Erythroderma (CORE)</li> <li>XIV. (DR 16.1 – 16.2) Collagen vascular disorders (CORE)</li> <li>SLE, Scleroderma, dermatomyositis- etiopathogenesis, management &amp; diagnosis</li> <li>XV. (DR 18.1, 18.2) Systemic diseases and skin (CORE)</li> <li>Cutaneous manifestation of diabetes mellitus and thyroid disorders</li> <li>XVII. (PA 34.1 -PA 34.4) Benign and malignant skin lesion (CORE)</li> <li>SCC</li> <li>Bcc</li> <li>Melanoma</li> <li>Benign tumors of Skin, risk factor, pathogenesis and diagnosis</li> </ul>	1 hour 1 hour 2 hours 1 hour

SI. No.	Competency	Торіс	Time (Hour)
1	AN 4.2	Structure & Function of Skin	1
2	DR 12.1	Eczema	1
3	DR 1.1, 1.3	Acne Vulgaris	1
4	DR 7.1	Fungal Infection	1
5	DR 5.1 & 6.1	Scabies & Pediculosis	1
6	DR 8.1, 8.7	Viral Skin Infections	1
7	DR 17.1 & 17.4	Nutritional Dermatoses	1
8	DR 9.1, 9.2	Leprosy Part- I	1
9	DR 9.5, 9.6	Leprosy Part-II	1
10	DR 11.2	HIV & Skin	1
11	DR15.1, 15.3	Bacterial Skin Infections	1
12	DR 2.2	Vitiligo	1
13	DR 13.1, 13.2	Vesiculobullous Disorders	1
14	DR 3.1, 4.1, 4.2	Papulosquamous Disorders	1
15	DR 16.1	SLE	1
16	DR 14.1 & 14.2	Urticaria angioedema	1
17	DR 10.3, 10.8, 10.10	STIs – Part 1	1
18	DR 10.6, 10.9	STIs – Part 2	1
19	DR 12.7	SJS & FDE	1
20	PA 34.3	Common skin tumors	1

# 7. Time Table for Theory Classes III Professional year Part I (20 hours)

SI. No.	Competency	Торіс	Time (Hour)
1 Systemic	DR 18.1	Enumerate the cutaneous features of Type 2 diabetes.	1
diseases & the skin	DR 18.2	Enumerate the cutaneous features of hypo/hyper-thyroidism.	1
2 Dermatitis and Eczema	DR 12.5	Define erythroderma. Enumerate and identify the causes of erythroderma. Discuss the treatment.	1
3 Fungal infection	DR 7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy.	2

# II) SELF-DIRECTED LEARNING (SDL 5 HRS.)

## III) SMALL GROUP TEACHING (SGT 5 HRS.)

SI. No.	Competency	Торіс	Time (Hour)
1	PH 1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs.	2
2	PE 31.4	Identify Atopic dermatitis and manage.	1
3	MI 17.2	Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures, wherever relevant.	2
#### 6. Assessment

#### Internal Assessment :

**Theory :** one theory examination will be conducted at the end of 3<sup>rd</sup> professional year part II

- Theory Internal Assessment will be at the end of IIIrd Posting for 50 Marks. (MCQ 10 marks, Long essay question 10 Marks, Short essay question 15 marks & Short answer questions 15 marks.)
- Log book maintaining & assessment competencies in IInd, IIIrd & IV prof. year, posting.

**Practical / Clinical :** three end postings tests will be conducted at the end of II Professional year and at the end of III Professional year Part I & Part II

## ASSESSMENT INTERNAL AND FORMATIVE ASSESSMENT Medicine & Allied Subjects

#### **THEORY AND PRACTICAL**

Total

Internal Assessment (IA)			Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained
2 <sup>nd</sup> Prof year	IA-I	IA —I	50		100	
		IA-II	50		100	
<b>3</b> <sup>rd</sup> part <b>I</b> Prof	IA-II	IA-III	50		100	
year		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100	
year		IA-VI	100 * (50		100 * (50	
			marks to be		marks to be	
			provided by		provided by	
			Allied)		Allied)	
		IA-VII	200		200	
	For	native Asse	ssment (Medi	cine & Allie	d)	
Part completion te	ct	Integrated	20			
	.50	SGT	40			
			20		1	
Certifiable skills			20		70	
Other than certifia	ble skills				05	
AETCOM Skills	AETCOM Skills		10		10	
Participation in SG	т		10			
Co-Curricular and	other aca	demic			05	
activities					05	
Practical record					05	
Log Book					05	
Total Marks			700		700	
Total Reduced to	o 100 Ma	irks	/ 10	/ 100 / 100		
Grand Total (Aggregate of theory & Practical's) (Min.50%)				/ 2	00	
Eligible –			YES /	NO		
Subject			Marks			
Psychiatry			20			
Dermatology			20			
Pulmonary Medicine			10			

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA – I, IA – II & IA – III Scores.

50

## SUMMATIVE ASSESSMENT

• 20 Marks for Dermatology in Medicine 2<sup>nd</sup> paper.

# Recommended Text Books for under Graduate Students (Latest editions)

SI. No.	Name of the Text Book	Authors	Edition
1	Treatment of skin diseases	J.S. Pasricha	6 <sup>th</sup> ed,
2	An Illustrated Colour Text Book of Dermatology	J.S. Pasricha	7 <sup>th</sup> ed,
3	Text Book of Dermatology and Venereology	Neena Khanna	6 <sup>th</sup> ed,
4	Atlas of Dermatology	L.K. Bhutani	6 <sup>th</sup> ed,
5	Atlas of Sexually Transmitted Disease	L.K. Bhutani	2 <sup>nd</sup> ed,
6	Harrison's Internal Medicine	Joseph Loscalzo	21 <sup>st</sup> ed

## DEPARTMENT OF RESPIRATORY MEDICINE

#### 1. Preamble

The broad goal of teaching undergraduate students in the field of Respiratory Medicine is aimed at making the Indian Medical Graduate to know the history taking and examination of respiratory system, identify and diagnose common respiratory diseases, knowledge of common respiratory diseases, their clinical manifestations, diagnosis and management. Ability to recognize, diagnose and manage Pulmonary tuberculosis as contemplated in the National Tuberculosis Eradication Program.

Ability to manage common respiratory emergencies in Primary care setting and refer appropriately.

#### 2. Subject Specific Objectives

#### A. Cognitive Domain

To at the end of the course of Respiratory Medicine an Indian Medical Graduate shall be able to archive the following competencies :

- To demonstrate knowledge of common respiratory disease, respiratory emergency and confirm diagnosis with help of investigative procedures.
- To demonstrate systematic examination that establishes the diagnosis based on clinical presentation.
- To be able to identify Tubercular lesions on chest radiographs.
- Interpret PPD (Mantoux Test) and describe and discuss the indications and pitfalls of the test.
- Interpret AFB stain.
- Interpret peak expiratory flow rate.
- Enumerate the indication for and interpret the results of pulse oximetry, ABG and Chest Radiography.
- Demonstrate the correct Technique to perform and interpret the Spirometry

- To describe the mechanism of action, types, doses, side effects, indication and contraindication of drugs used in Respiratory Medicine.
- To be able to manage patient of Pulmonary tuberculosis as per National Guidelines.

## **B. PSYCHOMOTOR DOMAIN**

An Indian Medical graduate shall be able to archive the following competencies :

- Students shall be able to perform thorough clinical and systemic examination of the respiratory system.
- To be able to enumerate and perform the steps of ZN staining and microscopic identification of Mycobacterium tuberculosis bacilli.
- To be able to enumerate steps and perform diagnostic pleural fluid aspiration.
- To be able to prescribe Anti Tubercular Drugs as per NTEP guidelines.
- To be able to assess a case of Obstructive Airway Disease.
- To be able to perform PFT.
- To be able to analyze Arterial Blood Gas Analysis.
- To demonstrate patients the correct use of inhalers.

## C. AFFECTIVE DOMAIN

At the end of the course, the Indian medical graduate should have acquired the following attitudinal competencies:

- Demonstrate self-awareness and personal development in routine conduct.
- **Behaviour and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations and shows positive approach.
- **Motivation and Initiative:** Is innovative, enterprising, does not shrink duties or leave any work pending and motivates team members.

- **Honesty and Integrity:** Is truthful, admits mistakes, does not cook information, has ethical conduct and exhibits good moral values.
- **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, and has good communication skills.
- Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities.
- To be able to counsel patients regarding Respiratory emergencies and preventive aspects of various respiratory diseases at In-patient and Outpatient settings.
- To be able to counsel the patients regarding treatment and prognosis of all Respiratory Illnesses.

## 3. INTEGRATION

Department shall provide an integrated approach towards allied disciplines like pre and para clinical departments, to provide basic patho-physiology basis to practice clinical Respiratory medicine, integration with community Medicine to enable an Indian medical graduate to view the patients in his / her total physical, social and economic milieu and also to have basic knowledge about important current national health programmes. Integration with clinical departments will enable the students to understand the timely referral to appropriate specialty for better patients care and teamwork.

## 4. Respiratory Medicine Course Content

- A. Tuberculosis (CT 1.1 To CT 1.19) (Total Hours- 10 hrs)
  - 1. Epidemiology Of Tuberculosis
  - 2. Microbiology of TB bacilli, Etiopathology.
  - 3. Co infection with HIV
  - 4. Factors for drug Resistance
  - 5. Perform and interpret PPD

- 6. Perform and interpret AFB stain
- 7. AFB culture and PCR testing
- 8. DST testing (Drug sensitivity Testing)
- 9. ATT drugs
- 10. Chemoprophylaxis for contacts and exposed health workers
- 11. Treatment of Tuberculosis
- 12. MDR Tuberculosis
- 13. DOTS programme
- 14. NTEP programme
- 15. Communications with the DOTS patient
- B. COPD (CT 2.1 to CT 2.28) (Total Hours- 10hrs)
  - i. Definition
  - ii. Classification
  - iii. Epidemiology, Risk Factors
  - iv. Pathophysiology
    - 1. Alpha I antitrypsin deficiency
    - 2. Respiratory Failure
    - 3. Exacerbation OF COPD
    - 4. Allergens For COPD
    - 5. Diagnosis of COPD
    - 6. Treatment of COPD including bronchodilators, steroids, mast cell stabilizers
    - 7. Treatment of Acute exacerbation
    - 8. History Taking in COPD Patients

- 9. General and Physical Examination In COPD patients
- 10. Preventive measures for COPD
- 11. PFT (PY 6.8)
- 12. PEAK Expiratory Flow Meter
- 13. Pulse oximetry
- 14. ABG
- 15. CXR interpretation in respiratory diseases
- 16. Oxygen Therapy
- 17. Inhaler Devices
- 18. Smoking Cessation
- 19. Vaccines in respiratory Diseases
- 20. Pulmonary Rehabilitation
- 21. Pleural effusion
- 22. Thoracocentesis
- 23. Bronchial Asthma
- 24. Etiology, Clinical features, Diagnosis and Treatment of BA
- 25. Bronchial Asthma in children (PE 28.19 And 28.20)
- 26. Tuberculosis in children (PE 34.1)
- 27. Treatment of Tuberculosis under NTEP ( PE 34.3)
- 28. Interpretation of BCG scar ( PE 34.6)
- 29. Interpretation of Mantoux test (PE 34.7)
- 30. Diagnosis of Tuberculosis in children (PE 34.2)

## 5. Course Contents

Respiratory	Respiratory Medicine, Clinical Postings:					
Subjects	Period of training in weeks					
	II	III	III	Total		
	Professional	Professional	Professional			
	year	year Part I	year Part II			
Clinical Posting Respiratory	None	None	2 weeks	2 weeks		
Fleetive	Nono	2 weeks	Nono	2 weeks		
Posting Respiratory Medicine	None	2 weeks	None	Zweeks		

## 6. TEACHING METHODS & HOURS

	Theory classes	SGD Small Group Discussion/ Practical Tutorials	SDL	Total
2 <sup>nd</sup> Prof	None	None	None	None
3 <sup>rd</sup> Prof Part- I	10 hours	08 hours	02 hours	10 hours
3 <sup>rd</sup> Prof Part - II	None	None	None	None

Lecture Classes- Total number of lecture classes 10 hours.

SI. No	Topics	Competency No
1	Bronchial Asthma	CT 2.7 CA 26.3
2	Bronchiectasis	CT 2.7 CT 2.3 CT 2.2 CT2.16
3	Pleural effusion	CT 2.17
4	Pneumothorax	
5	Epidomiology & Pathogenesis of TB	CT 1.1 CT 1.2
6	NTEP in India	CT 1.18 CM 8.3
7	COPD	CT 2.1 CT 2.2
8	TB & HIV coinfection	CT 1.3

## SGD Time Table

SI No	Торіс	Teaching Learning Method	Competency No
1	Serology, PCR based diagnosis of TB, Mantoux Contact tracing & Chemoprophylaxis Disclose of TB diagnosis and Therapy Batch A ( Roll No. 1-100)	SGD DOAP certificate skill	CT 1.7 CT 1.12 CT 1.16 CT 1.19
2	Serology, PCR based diagnosis of TB, Mantoux Contact tracing & Chemoprophylaxis Disclose of TB diagnosis of Therapy Batch B ( Roll No. 101-199)	SGD DOAP certificate skill	CT 1.7 CT 1.12 CT 1.16 CT 1.19
3	Smoking cessation and Pulmonary rehabilitation Batch A (Roll No. 1-100)	SGD & DOAP	CT 2.21 CT 2.23 CT 2.24

4	Smoking cessation and Pulmonary rehabilitation Batch B (Roll No. 101-199)	SGD & DOAP	CT 2.21 CT 2.23 CT 2.24
5	Inhalation therapy in OAD. Peak Flowmetry Batch A (Roll No. 1-100)	SGD	CT 2.18
6	Inhalation therapy in OAD. Peak Flowmetry Batch B (Roll No. 101-199)	SGD	CT 2.18
7	Vaccination in pulmonary medicine including BCG Batch A (Roll No. 1-100)	SGD DOAP certificate skill	CT 1.13 CT 2.27
8	Vaccination in pulmonary medicine including BCG Batch <b>B</b> (Roll No. 101-199)	SGD DOAP certificate skill	CT 1.13 CT 2.27

#### 8. Assessment

#### Internal Assessment :

**Theory :** one theory examination will be conducted at the end of  $3^{rd}$  professional year part 1

**Practical /Clinical :** 1 end posting test will be conducted at the end of III Professional year Part II

## ASSESSMENT INTERNAL AND FORMATIVE ASSESSMENT Medicine & Allied Subjects

#### **THEORY AND PRACTICAL**

Internal Assessment (IA)			Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained
2 <sup>nd</sup> Prof year	IA-I	IA —I	50		100	
		IA-II	50		1 100	
<b>3</b> <sup>rd</sup> part <b>I</b> Prof	IA-II	IA-III	50			
year		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100	
year		IA-VI	100 * (50		100 * (50	
			marks to be		marks to be	
			provided by		provided by	
			Allied)		Allied)	
		IA-VII (Prelims)	200		200	
	For	mative Asse	ssment (Medi	icine & Allie	ed)	
Part completion tes	st	Integrated	20			
		SGT	40			
		SDL	20			
Certifiable skills					70	
Other than certifial	ble skills				05	
AETCOM Skills			10		10	
Participation in SG	Г		10			
Co-Curricular and o	other aca	demic			05	
Practical record					05	
					05	
Total Marks			700		700	
Total Reduced to	5 100 Ma	irks	/ 10	0	/ 10	0
Grand Total		-	,		,	
(Aggregate of theo	orv & Prac	tical's)	/ 200			
(Min.50%)				, -		
Eligible –			YES / NO			
* Allied subject		Marks				
Psychiatry			20			
Dermatology, Venereology & Leprosy			20			
Respiratory Medicine including Tuberculosis			10			
Total			50			

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA - I, IA - II & IA - III Scores.

#### SUMMATIVE ASSESSMENT

• 10 Marks for Respiratory Medicine in 2<sup>nd</sup> paper.

## **Recommended Textbooks for Under Graduate Students**

- 1. Fishman's Pulmonary Diseases and Disorders, Sixth Edition
- 2. Crofton and Douglas's Respiratory Diseases, Fifth Edition
- 3. Murray & Nadel's Textbook of Respiratory Medicine, 7th Edition
- 4. NTEP Guidelines, 2022

# SYLLABUS FOR GENERAL SURGERY

## 1. Preamble:

The goal of competency based medical education is to train a Medical student into competent Indian Medical Graduate (IMG).

IMG should possess requisite knowledge, skills, attitudes, values and responsiveness, so that he/ she may function appropriately and effectively as a physician of first contact of the community, while being globally relevant. To fulfil this, IMG should be able to perform the following roles: a clinician, communicator, a life long learner, a professional and a team leader.

CBME aims to train IMG, in effective solving of case based scenario, perform complete and relevant physical examination, elicit and record complete and relevant history from patient and relevant sources, choose the appropriate diagnostic test and interpret it, generate differential diagnosis and management plans, prescribe and administer appropriate therapies, be aware of national and regional health care policies, medico-legal, social and ethical problems.

## 2. GOAL.

At the end of the course, Indian Medical Graduate should be capable of delivering efficient and first contact surgical care.

## 3. Objectives

## A. Cognitive

At the end of the course, the student shall be able to achieve the following competencies

- 1. Describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems, including emergencies in children, adults and geriatric patients;
- 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, contraindications and side effects.

#### B) Psychomotor

At the end of the course, the student should be able to achieve the following competencies -

- 1. Diagnose common surgical conditions both acute and chronic in children, adults and geriatric patients;
- 2. Plan various laboratory 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 perform and maintain patent air-way, monitor and resuscitate
  - i] Critically injured patient;
  - ii] Critically ill patient
- 5. Monitor patients of head, chest, spinal and abdominal injuries in children, adults & geriatric patients.
- 6. Provide primary care for a patient of burns.
- 7. In the situations identified in S.No 3, 4, 5, and 6, calling for urgent or early surgical intervention, refer at the optimum time to appropriate centers;
- 8. Treat open wounds including preventive measures against tetanus and gas gangrene;
- Diagnose neonatal and paediatric surgical emergencies and provide sound primary care before referring the patient to secondary/ tertiary centers;

- 10. Identify congenital anomalies and refer them for appropriate management. Counsel and guide patients and relatives regarding need, implications and problems of surgery in individual patient .
- 11. Develop adequate and right attitude in dealing with surgical problems of patients;
- 12. Organise and conduct relief measures in situations of mass casualties and management of blast injuries
- 13. Effectively participate in the National Health Programmes especially the Family Welfare Programme.
- 14. Discharge effectively medico-legal and ethical responsibilities.
- 15. Be able to maintain adequate medical records.
- 16. Be able to take-up short term research projects

#### C Attitude / Communication

At the end of the course, the student should be able to achieve the following competencies –

- The Student should be able to communicate and counsel the patients and their families about the treatment and prognosis of various surgical conditions.
- Student should be able to communicate the results of various investigations in surgical practice.
- The student should be able to obtain informed consent and counsel regarding outcome of surgical operations

#### 4. Integration:

The teaching should be aligned and integrated horizontally and vertically in order to provide a sound biologic basis and a holistic approach to the care of the surgical patient.

#### 5. AETCOM

- The Student should be able to communicate and counsel the patients and their families about the treatment and prognosis of various surgical conditions.
- Student should be able to interpret and communicate the results of various investigations in surgical practice.
- The student should be able to obtain informed consent.

## 6. Competencies:

The student must demonstrate:

- Understanding of the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children,
- Ability to choose, calculate and administer appropriate intravenous fluids, electrolytes, blood and blood products based on the clinical condition,
- Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic use of antibiotics and universal precautions in Surgical practice,
- Knowledge of common malignancies in India, early detection, therapy and their prevention
- Ability to perform common diagnostic and surgical procedures at the primary care level,
- Ability to recognize, resuscitate, stabilize and provide basic & advanced life support to patients of trauma,
- Ability to obtain consent and counsel patients prior to Surgical procedures,
- Commitment to advancement of quality and patient safety in Surgical practice.

#### 7. Course content:

## **TEACHING METHODS & HOURS**

## Table-1

	Large group Teaching	Small group teaching/Pr actical/ Tutorials	SDL	AETCOM	Total	Clinical/ Field Posting
2 <sup>nd</sup> Prof	25 hours	-	-		25 hours	4 week
3 <sup>rd</sup> Part 1	25 hours	35 hours	5 hours	8	65 hours	4 week
3 <sup>rd</sup> Part 2	70 hours	125 hours	15 hours	Hours	210 hours	11 week
TOTAL	120 hours	160 hours	20 hours		300 hours	20 Weeks

## **CLINICAL POSTING TABLE**

#### Table -2

	Morning Theory lasses	SGT Small Group Teaching/ Practical Tutorials	SDL	AETCO M	Total	Bedside Clinics
2 <sup>nd</sup> Prof	25 Hours	-	-		25. Hours	4 Weeks
3 <sup>rd</sup> Prof	25 Hours	35 Hours	05	8 Hours	65.Hours	4 Weeks
Part- I			Hours			
3 <sup>rd</sup> Prof Part	70 Hours	125 Hours	15		210 Hours	12 Weeks
- II			Hours			
Total	120	160 Hours	20	1	300	20 Weeks
	Hours		Hours		Hours	

• In four of the eight weeks of electives, regular clinical posting shall be accommodated. Clinical postings may be adjusted within the time framework

#### Learner doctor of clinical posting:

#### Table-3

Year of Curriculum	Focus of Learner- Doctor Programme
Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

- Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case-based learning.
- Didactic lectures not to exceed one-third of the total teaching time.
- The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible.
- Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories. Use of skill lab to train undergraduates.
- Newer T-L method like Learner-doctor method (Clinical clerkship) should be implemented, from 1st clinical postings itself. The goal of this type of T-L activity is to provide learners with experience in longitudinal patient care, being part of the health care team, and participate in hands-on care of patients in outpatient and inpatient setting. During the 1st clinical postings, the students are oriented to the working of the department. During the subsequent clinical postings the students are allotted patients, whom they follow-up through their stay in the hospital, participating in that patient's care including case work-up, following-up on investigations, presenting patient findings on rounds, observing procedures, if any, till patient is discharged.

## **COURSE CONTENT**

## **GENERAL SURGERY (CODE: SU)**

SI. No.	Торіс	Number	Lectures	SGD	SDL	Grand Total Hrs
1	Metabolic response to injury	SU1.1 to SU1.3	2	2	-	4
2	Shock	SU2.1 to SU2.3	2	2	-	4
3	Blood and blood components	SU3.1 to SU3.3	2	-	-	2
4	Burns	SU 4.1 to SU4.4	2	2	-	4
5	Wound healing and wound care	SU 5.1 to SU5.4	2	2	-	4
6	Surgical infections	SU6.1 to SU6.2	2	2	-	4
7	Surgical Audit and Research	SU7.1 to SU7.2	1	-	-	1
8	Ethics	SU8.1 to SU8.3	1	-	-	1
9	Investigation of surgical patient	SU9.1 to SU9.3	2	2	-	4
10	Pre, intra and post- operative management	SU10.1 to SU10.4	2	2	_	4
11	Anesthesia and pain management	SU11.1 to SU11.6	2	12	-	14
12	Nutrition and fluid therapy	SU12.1 to SU 2.3	2	2	-	4
13	Transplantation	SU13.1 to SU13.4	4	2	-	6
14	Basic Surgical Skills	SU14.1 to SU14.4	3	5	-	8
15	Biohazard disposal	SU15.1	1	1	-	2
16	Minimally invasive General Surgery	SU16.1	2	2	-	4
17	Trauma	SU17.1 to SU17.10	4	8	3	15
18	Skin and subcutaneous tissue	SU 18.1 to SU 18.3	2	-	-	2
19	Developmental anomalies of face, mouth and jaws	SU19.1 to SU19.2	2	4	-	6
20	Oropharyngeal cancer	SU 20.1 to SU20.2	2	2	-	4

21	Disorders of salivary glands	SU21.1 to SU	J21.2	4	2	-	6
22	Endocrine General Surgery: Thyroid and parathyroid	SU 22.1 to 22	2.6	6	10	-	16
23	Adrenal glands	SU 23.1 to SI	U23.3	2	4	-	6
24	Pancreas	SU24.1 to SU	J24.3	4	8	2	14
25	Breast	SU25.1 to SU	J25.5	6	10	-	16
26	Cardio-thoracic General Surgery- Chest - Heart and Lungs	SU26.1 to SU	J26.4	2	6	-	8
27	Vascular diseases	SU27.1 to SU	27.8	6	10	4	20
28	Abdomen	SU28.1 to SU	128.18	32	34	7	73
29	Urinary System	SU29.1 to SU	129.11	8	14	2	24
30	Penis, Testis and scrotum	SU30.1 to SU	130.6	8	10	2	20
Total120 hrs16020hrshrshrs300 hrs					300 hrs		
Тор	Topic: Metabolic response to injurySU1.1 SU1.2 SU1.32 Hours						

- Basic concepts of homeostasis.
- Metabolic response to injury.
- Basic concepts of perioperative care.

Topic: Shock	SU2.1	SU2.2 SU2.3	2 Hours
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- Classification, pathophysiology of shock, principles of resuscitation.
- Clinical features of shock and its treatment.
- Counselling patients and families about the treatment and prognosis of shock <u>(AETCOM).</u>

Topic: Blood and blood components	SU3.1 SU3.2 SU3.3	2 Hours
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- Blood and blood products
- Techniques, methods and complications of blood transfusion.
- Counselling patients and family/ friends blood transfusion and blood donation

Topic: Burns	SU4.1, SU4.2, SU4.3, SU4.4	2 Hours
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#### <u>Core</u>

- Pathophysiology, clinical examination and assessment of burns
- Management of Burns
- Medicolegal aspects in burn injuries.
- Counselling patients and families on the outcome and rehabilitation in burns

Topic: Wound healing and	SU5.1, SU5.2, SU5.3, SU5.4	2 Hours
wound care		

#### <u>Core</u>

- Phases and factors affecting normal wound healing.
- Clinical examination of wounds.
- Types and management of wounds.
- Medico legal aspects of wounds

Topic: Surgical infectionsSU6.1, SU6.2	2 Hours
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- Etio- pathogenesis of surgical Infections
- Principles of prophylactic and therapeutic antibiotics use in infections

Topic: Surgical Audit and	SU7.1, SU7.2	1 Hour
Research		

- Surgical audit
- Principles of clinical research in General Surgery

Topic: Ethics	SU8.1, SU8.2, SU8.3	1 Hour
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#### <u>Core</u>

- The principles of Ethics in General Surgery (AETCOM)
- Professionalism and empathy to the patient undergoing General Surgery (AETCOM)
- Medico-legal issues in surgical practice (AETCOM)

Topic: Investigation of	SU9.1 SU9.2 SU9.3	2 Hours
surgical patient		

#### <u>Core</u>

- Principles of investigations in a surgical patient
- Biological basis for early detection of cancer and multidisciplinary approach in management of cancer.
- Counselling the patients about results of surgical investigations.

Topic: Pre, intra and post-	SU10.1, SU10.2,	2 Hours
operative management.	SU10.3, SU10.4	

- Principles of perioperative management of common surgical procedures
- Counselling and informed consent in a simulated environment. (AETCOM)
- Common surgical procedures and emergency lifesaving surgical procedures.

Basic surgical Skills (First aid including suturing and minor surgical procedures)

Topic: Anaesthesia and pain	SU11.1 SU11.2 SU11.3	2 Hours
management	SU11.4 SU11.5 SU11.6	

#### <u>Core</u>

- Principles of Preoperative assessment
- Principles of general, regional, and local anesthesia.
- Maintenance of an airway
- Principles of day care general Surgery
- Principles of post-operative pain relief and management of chronic pain.
- Principles of safe General Surgery

Topic: Nutrition and fluid therapy	SU12.1 SU12.2 SU12.3	2 Hours

#### <u>Core</u>

- Malnutrition in the surgical patient
- Methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patient
- Nutritional requirements of surgical patients, methods of providing nutritional support and their complications

Topic: TransplantationSU13.1 SU13.2 SU13.3 SU13.44 Hours	5
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- Immunological basis of organ transplantation.
- Principles of immunosuppressive therapy and organ transplantation.
- Legal and ethical issues concerning organ donation. (AETCOM)
- Counselling patients and relatives on organ donation. (AETCOM)

Topic: Basic Surgical Skills	SU14.1, SU14.2, SU14.3, SU14.4	3 Hours
	5014.3, 5014.4	

- Aseptic techniques, sterilization and disinfection.
- Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.
- Materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)
- The techniques of asepsis and suturing.

Topic: Biohazard disposal	SU15.1	1 Hour

#### <u>Core</u>

• Classification of hospital waste and appropriate methods of disposal.

Topic: Minimally invasive General Surgery	SU16.1	2 Hours

#### <u>Core</u>

• Minimally invasive General Surgery

#### c: Bio

Topic: Trauma	SU17.1, SU17.2, SU17.3, SU17.4, SU17.5, SU17.6, SU17.7, SU17.8,	4 Hours
	SU17.9, SU17.10	

- Principles of FIRST AID
- Basic Life Support.
- Principles in management of mass casualties
- Pathophysiology, mechanism of head injuries, clinical features for neurological assessment and GCS in head injuries

- Principles of management of head injuries
- Principles of management of soft tissue injuries.
- Principles of management of chest injuries.
- Airway maintenance and management of pneumothorax, hemothorax and flail chest in simulated environment.

Topic: Skin and subcutaneous tissue	SU18.1, SU18.2, SU18.3	2 Hours
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- Pathogenesis, clinical features and management of various cutaneous and subcutaneous infections.
- Skin tumors- Classification and management.
- Clinical examination and management of subcutaneous swelling.

Topic: Developmental anomalies of	SU19.1, SU19.2	2 Hours
face, mouth and jaws		

#### <u>Core</u>

- Cleft lip and palate etiopathology and clinical features
- Principles of reconstruction of cleft lip and palate

Topic: Oropharyngeal cancer	SU20.1, SU20.2	2 Hours

#### <u>Core</u>

- Etiopathogenesis of oropharyngeal cancer
- Principles of treatment of oropharyngeal cancer

Topic: Disorders of salivary glands	SU21.1, SU21.2	4 Hours

- Surgical anatomy, pathology, and clinical presentation of disorders of salivary glands
- Principles of treatment of disorders of salivary glands

Topic:	<b>Endocrine General Surgery:</b>	SU22.1, SU22.2, SU22.3,	6 Hours
	Thyroid and parathyroid	SU22.4, SU22.5, SU22.6	

- Applied anatomy and physiology of thyroid
- Etiopathogenesis of thyroid swellings-benign
- Clinical examination of thyroid swellings
- Principles of management of thyroid cancer
- Applied anatomy of parathyroid
- The principles of management of hypo. and hyperparathyroidism

Topic: Adrenal glands	SU23.1, SU23.2, SU23.3	2 Hours

#### <u>Core</u>

- Applied anatomy of adrenal glands
- Principles of management of disorders of adrenal gland
- Principles of investigation and management of adrenal tumors

Topic: Pancreas	SU24.1, SU24.2, SU24.3	4 Hours
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#### <u>Core</u>

- Principles of investigation, prognosis and management of pancreatitis.
- Principles of investigation, prognosis and management of pancreatic endocrine tumours
- Principles of investigation and management of pancreatic disorders including pancreatitis and endocrine tumors.

Topic: Breast	SU25.1, SU25.2, SU25.3, SU25.4, SU25.5	6. Hours
	,	

<u>Core</u>

• Applied anatomy and appropriate investigations for breast disease.

- Principles of management of benign breast disease including infections of the breast
- Principles of treatment of benign and malignant tumours of breast.
- Counselling the patient and obtain informed consent for treatment of malignant conditions of the breast
- Clinical examination of breast

Topic: Cardio-thoracic Surgery-	SU26.1 to SU26.4	2 Hours
Chest – Heart and Lungs		

- Role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases.
- Clinical features of mediastinal diseases and the principles of management
- Etiology, pathogenesis, clinical features of tumors of lung and the principles of management

Topic: Vascular diseases	SU27.1 to SU27.8	6 Hours

- Etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.
- Clinical features, investigations and principles of management of vasospastic disorders.
- Types of gangrene and principles of amputation.
- Applied anatomy of venous system of lower limb.
- Pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins.

• Pathophysiology, clinical features, investigations and principles of management of lymphedema, lymphangitis and Lymphomas.

Topic: Abdomen	SU28.1 to SU28.18	32 Hours
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- Pathophysiology, clinical features, Investigations and principles of management of Hernias.
- Causes, clinical features, complications and principles of management of peritonitis.
- Pathophysiology, clinical features, investigations and principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors .
- Applied Anatomy and physiology of esophagus.
- Clinical features, investigations and principles of management of benign and malignant disorders of esophagus.
- Applied anatomy and physiology of stomach.
- Etiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach.
- Applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumors of the liver.
- Applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis prophylaxis.
- Applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system.
- Applied anatomy of small and large intestine.

- Clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome.
- Clinical features, investigations and principles of management of diseases of appendix including appendicitis and its complications.
- Applied anatomy including congenital anomalies of the rectum and anal canal.
- Clinical features, investigations and principles of management of common anorectal diseases.

Topic: Urinary SystemSU29.1 to SU29.118 Hours	nary System S
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- Causes, investigations and principles of management of hematuria.
- Clinical features, investigations and principles of management of congenital anomalies of genitourinary system.
- Clinical features, Investigations and principles of management of urinary tract infections
- Clinical features, investigations and principles of management of hydronephrosis.
- Clinical features, investigations and principles of management of renal calculi.
- clinical features, investigations and principles of management of renal tumours
- Principles of management of acute and chronic retention of urine.
- Clinical features, investigations and principles of management of bladder cancer.
- Clinical features, investigations and principles of management of disorders of prostate.
- Clinical features, investigations and management of urethral strictures

Topic: Penis, Testis and scrotum	SU30.1 to SU30.6	8.Hours
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- Clinical features, investigations and principles of management of phimosis, paraphimosis and carcinoma penis.
- Applied anatomy, clinical features, investigations and principles of management of undescended testis.
- Applied anatomy clinical features, investigations and principles of management of epididymo-orchitis
- Applied anatomy clinical features, investigations and principles of management of varicocele
- Applied anatomy, clinical features, investigations and principles of management of Hydrocele.
- Classification, clinical features, investigations and principles of management of tumours of testis.

## **CLINICAL/ BED SIDE TEACHING**

Professional	Duration	Number	Торіс	Teaching	
2 <sup>nd</sup> Prof	4 Weeks	SU5.2	Elicit, document and present a history in a patient presenting with wounds.	Clinical Demonstration/	
		SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care (AETCOM)	Bed side teaching	
		SU4.1	Elicit, document and present history in a case of burns and perform physical examination.		
		SU11.3	Demonstrate maintenance of an airway in a mannequin or equivalent		
		SU13.4	donation in a simulated environment		
		SU17.2	<ul> <li>Demonstrate the steps in basic life support.</li> <li>Transport of injured patient in a</li> </ul>		
3 <sup>rd</sup> Prof Part	4 weeks		simulated environment		
I	I		examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss		
		5028.2	appropriate treatment plan. Demonstrate the correct technique to		
			examine the patient with hernia and identify different types of hernias		
		AN20.9	Identify & demonstrate palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial). Mid inguinal point, Surface		
			projection of: femoral nerve, saphenous opening, sciatic, tibial, common peroneal & deep peroneal nerve, great and small saphenous veins		
		AN35.5	Describe & demonstrate extent, drainage & applied anatomy of cervical lymph nodes		
Professional	Duration	Number	Торіс	Teaching method	
		SU3.2	Observe blood transfusions.	Clinical	
3 <sup>rd</sup> Prof Part II	12 weeks	SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation AETCOM	Demonstration/ Bed side teaching	
		SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately		

SU10.3	Observe common surgical procedures and assist in minor surgical procedures; observe emergency life saving surgical procedures
SU10.4	Perform basic surgical skills such as first aid including suturing and minor surgical procedures in simulated environment
SU11.3	Demonstrate maintenance of an airway in a mannequin or equivalent
SU14.2	Describe surgical approaches, incisions and the use of appropriate instruments in surgery in general.
SU17.10	Demonstrate airway maintenance, recognise and manage tension pneumothorax, hemothorax and flail chest in simulated environment
SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discus the differential diagnosis and their management
SU25.4	Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast
SU25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent
SU27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigations of vascular diseases
SU27.8	Demonstrate the correct examination of the lymphatic system
SU28.9	Demonstrate the correct technique of examination of a patient with disorders of the stomach
SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan
SU29.10	Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent
AN15.3	Describe and demonstrate boundaries, floor, roof and contents of femoral triangle

## 8. Assessment

#### INTERNAL ASSESMENT

- Progress of the learner shall be documented through structured periodic assessment that includes formative and summative assessments. Log-book of skill- based training shall be also maintained.
- Day to day records and logbook (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.
- AETCOM assessment will include: (a) Written tests comprising of short notes and creative writing experiences, (b) OSCE based clinical scenarios / viva voce.
- The results of internal assessment should be displayed on the notice board within 1-2 weeks of the test. Remedial measures should be offered to students who are either not able to score qualifying marks or have missed on some assessments due to any reason. Learners must have completed the required certifiable competencies for that phase of training and entered in Surgery logbook, completion of logbook is mandatory for appearing for final university examination.

#### Theory;

• A minimum of two theory examinations will be conducted in each professional year 2<sup>nd</sup> Professional, 3<sup>rd</sup> Professional part 1 and three exams in 3<sup>rd</sup> Part 2 Professional year including prelims (total 7).

Total marks of 700 (IA + Formative assessment) which will be tabulated to 100.

## Practical and Viva Voce

• Practical / Clinical: Assessment will be done at the end of each clinical postings (2<sup>nd</sup> Professional Year-1, 3<sup>rd</sup> Part-1 Professional Year-1, 3<sup>rd</sup> Part II Professional Year- 2 & Prelims-1 as per University pattern), Second end posting test will be OSCE.

Total marks of 700 (IA + Formative assessment) which will be tabulated to 100.

## ASSESSMENT INTERNAL AND FORMATIVE ASSESSMENT Surgery & Allied Subjects

#### THEORY AND PRACTICAL

Internal Assessment (IA)		Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained	
2 <sup>nd</sup> Prof year	IA-I	IA —I	50			
		IA-II	50		100	
<b>3</b> <sup>rd</sup> part <b>I</b> Prof	IA-II	IA-III	50		100	
year		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100	
year		IA-VI IA-VII	100 * (50 marks to be provided by Allied) 200		100 * (50 marks to be provided by Allied) 200	
	 Eorr	(Prelims)	cement (Sura	ory & Allioc		
Part completion to	-+	Integrated				
	SL	SGT	40			
		SDI	20			
Certifiable skills		20		70		
Other than certifiable skills				05		
AETCOM Skills		10		10		
Participation in SGT		10				
Co-Curricular and other academic				05		
Practical record					05	
Log Book				05		
Total Marks		700		700		
Total Reduced to	Total Reduced to 100 Marks		/ 10	0	/ 10	bo
Grand Total (Aggregate of theory & Practical's) (Min.50%)			/ 2	00		
Eligible –		YES / NO				

#### \* Surgery & Allied:

Subject	Marks			
Orthopaedics	30			
Anaesthesiology	10			
Radiodiagnosis	10			
Total	50			

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA – I, IA – II & IA – III Scores.

## THEORY:

A minimum of two theory examinations will be conducted in each professional year 2<sup>nd</sup>, 3<sup>rd</sup> part 1 and three exams in III/II including prelims (total 7).

Total marks of 700 (IA + Formative asse4ssment ) which will be tabulated to 100.

#### PRACTICAL AND VIVA VOCE

A minimum of two practical examinations will be conducted in each professional year  $2^{nd}$ ,  $3^{rd}$  part 1 and three exams in III/II including prelims (total 7).

Internal Asse	Practical Max. Marks		
<b>2<sup>nd</sup></b> Prof vear	IA —I	50	
	IA-II	50	
<b>3<sup>rd</sup> part I</b> Prof year	IA-III	100	
	IA-IV	100	
	IA-V	100	
<b>3<sup>rd</sup> part II</b> Prof year	IA-VI	100	
	IA-VII (Prelims)	200	

Total marks of 700 which will be tabulated to 100.
# **B-University Examination**

#### **ELIGIBILLITY FOR EXAMINATION**

- The candidate must have undergone satisfactorily approved course of the study in the subject within prescribed duration.
- Should have at least 75 percent of attendance in theory and 80 percent in practical separately to become eligible to appear for the examination in the subject.
- Should have at least 40 percent of total marks fixed by internal assessment both in theory and practical individually.
- Should secure 50 percent in aggregate of total marks combined in theory and practical assigned for IA in the subject.

#### <u>Paper –I</u>

- Hernia: **a**. Inguinal hernia, **b**. Femoral hernia, **c**. Umbilical hernia **d**. Epigastric hernia. **e**. Incisional Hernia Complications and Management
- Diseases of umbilicus
- Abdominal wall Anatomy, Incisions, Burst abdomen, Desmoid tumor
- Face
- Teeth
- Gums
- Mouth
- Tongue
- Salivary Glands
- Neck
- Thyroid, Parathyroid, Adrenal Gland and Other Endocrine Diseases
- Breast
- Sympathetic System
- Cranio-cerebral injuries
- Diseases of the brain
- Diseases of the nerves
- Genito Urinary System
- Kidneys and Ureters
- Urinary Bladder
- Prostate
- Penis, Testis and Scrotum
- Vasectomy and Recanalisation

- Cardiothoracic System- Oesophagus
- Stomach and Duodenum
- Spleen
- Liver
- Gall Bladder and Bile Ducts
- Pancreas
- Peritoneum
- Intestines
- Intestinal Obstruction
- Specific Obstructions
- Appendix
- Rectum And Anal Canal
- Principles Of Minimal Access Surgery
- Energy Sources in Surgery
- Anaesthesiology- (Two short notes only)
- Radiology (One or Two short notes only)

#### Paper –II, Section-A

- Introduction to Surgery, Historical Background and progress made
- Hemorrhage and shock
- Fluid Electrolyte and acid base balance, nutrition
- Skin tumours, Burns, Skin grafting
- Arterial diseases
- Venous diseases

- Lymphatics and lymph nodes
- Sutures in Surgery
- Wounds, wound healing and wound management
- Antibiotics in surgery
- Acute non-specific and specific infections
- Chronic, specific infections
- Tumors, Cysts, Ulcers and Sinuses and Fistulae
- Infections of the hand and foot
- Diseases of muscles, tendons, bursae and fascia

#### **KAHER University Examination**

#### **General Surgery**

#### Paper-I

Question type	No of Questions	Marks	Total
МСQ	20	01	20
LEQ	2	10	20
SEQ	9	05	45
SAQ	5	03	15
		Total	100. Marks

# Paper-II

Section-A Surgery & Allied Subjects (50+20=70 Marks)*			Section ( 3	B-Orthopec 0 Marks)	lics		
Question type	No of Question	Marks	Total		No of Questions	Marks	Total
MCQ	16	01	16		04	01	04
LEQ	01	10	10		01	10	10
SEQ	07	05	35		02	05	10
SAQ	03	03	09		02	03	06
	1	Total	70		Tota	l	30
	Grand Total =100						

• Surgery 50 Marks. Allied Subject 20 Marks

# THEORY PAPER 1 and 2

	Max. Marks -100		Time 3 hours.
[G	en Surgery]		
1.	MCQ	20 X 1 Marks	20
2.	Long essay questions	2 X 10 Marks	20
3.	Short essay questions	9 X 5 Marks	45
4.	Short answers questions	5 X 3 Marks	15
		Total	<u>100 Marks.</u>

#### PRACTICAL/ CLINICAL EXAMINATION

#### **General Surgery and Allied Specialities**

Clinical Cases	Marks
1 Long Case	60
2 Short Cases	30 + 30
2 Short Cases (Ortho)	20+20
Viva-Voce	30+10
TOTAL	200

THEORY				PRACTIC	CALS / (		CS
Subject	Paper - I	Paper -II	Total	Practical Examination	Viva Voce	Total	Grand
							Total
Surgery	Surgery 100	Surgery	200	160	40	200	400
		Allied 70 +					
		Ortho 30					

#### • Surgery 50 Marks. Allied Subject 20 Marks

#### **Recommended Books (Latest editions)**

- 1. Bailey & Love's Short Practice of Surgery, Ruseell R.C.G, Willimas. N.S. Published by Arnold Heinemann.
- 2. Das K, A Manual on Clinical Surgery, Published by S Das.
- 3. Hamilton Bailey's Demonstrations of Physical Signs in Clinical Surgery. John SP Lumley, Published by Butterworth Heinemann.
- 4. Manipal Manual of Surgery.

# **DEPARTMENT OF ORTHOPAEDICS**

#### 1. Goals:

The goal of teaching the undergraduates in the field of orthopedic traumatology and rehabilitation is aimed at enabling the students in the basics of clinical examination, diagnosis and management of orthopedic clinical conditions. They shall be able to perform certain orthopedic skills and provide the same at primary and secondary health care levels.

#### 2. Objectives:

At the end of training in Orthopaedics and Traumatology, the Indian Medical Graduate should have the following knowledge and skills:

#### Knowledge

At the end of the course the student shall be able to achieve following competencies:

- Understand the principles of pre-hospital care and casualty management of a trauma victim including principles of triage and shock.
- Identification of systemic injuries associated with fracture.
- Select, prescribe and communicate appropriate medications for pain relief.
- Identification and management of soft tissue injuries, fractures and dislocations and their complications
- Detect fracture & sprains and deliver primary measures and manage uncomplicated fractures & dislocations
- Understand the principles of Plaster application and methods of immobilization
- Identify indications for amputations and corrective measures for bone deformities
- Diagnosis & management of nerve injuries (including Leprosy).

- Investigations & management of common infections of bones and joints
- Investigations & management of rheumatoid arthritis and associated inflammatory disorders.
- Recognition of congenital skeletal anomalies
- Diagnose common metabolic & degenerative bone disorders.
- Etiology, pathogenesis, manifestations, diagnosis of neoplasms affecting the musculoskeletal system
- Diagnosis & management of rehabilitation for polio, cerebral palsy and Leprosy.
- Knowledge of the medico-legal aspects of trauma

#### A) Psychomotor / Skills

At the end of the course the student shall be able to achieve following competencies:

- o Elicit detailed clinical history, perform appropriate clinical examination in both out- patient and ward settings.
- o Diagnose fractures
- o Apply different types of Plasters, Splints and Tractions
- o Perform Aspiration of Joints and Intra-articular Injections

#### B) Attitude, Ethics and Communication skills:

At the end of the course the student shall be able to achieve following competencies:

- o Communicate effectively with patients and their families
- o Communicate effectively with peers and teachers and demonstrate the ability to work effectively with peers in a team.
- o Demonstrate professional attributes of punctuality, accountability and respect towards teachers and peers.

#### 3. Integration

The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of Orthopaedic problems, their management and correlation with function, rehabilitation and quality of life.

#### 4. COURSE CONTENT:

	Theory	Small Group Discussions (SGD) / Tutorials / Integrated teaching	Self- Directed Learning (SDL)	Total
Second Professional Year	None	None	None	
Third Professional Year Part First	15	20	05	40
Third Professional Year Part Second	20	25	05	50
Total	35	45	10	90

#### **Theory Teaching Hours:**

#### **Clinical Posting Teaching Hours:**

Subject	Pe			
	II MBBS III MBBS Part I III MBBS Part		Total	
			II	
Orthopaedics	2 weeks	4 weeks	2 weeks	8 weeks

# Learning – Doctor programme (clinical clerkship)

Year of Curriculum	Focus of learner – doctor programme
Year 1	Introduction to hospital environment. Early clinical exposure.
	Understanding perspectives of illness
Year 2	History taking, Physical examination. Assessment of change in clinical
	status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and
	continuity of care
Year 4	All of the above and decision making, management and outcomes

# 5A] COGNITIVE DOMAIN:

SI No.	Conte	nt	Hours
1.	Skelet	tal trauma, Poly-trauma [OR1.1- OR1.6] CORE	10 Hours
	•	Principles of pre -hospital care, triage, approach to poly	
	- - -	trauma patient and ATLS principles.	
	•	Shock	
	•	Soft tissue injuries	
	•	Dislocation of major joints (shoulder, knee, hip)	
	•	Fractures: General principles	
2	Fractu	Ires: (OR 2.1-2.16) CORE	30 Hours
	•	Fracture Clavicle	
	•	Fracture of proximal humerus	
	•	Management of joint pain	
	•	Fracture of shaft of humerus and intercondylar fracture	
		humerus with emphasis of neurovascular deficit	
	•	Fracture of Both Bone forearm, Galeazzi and Monteggia	
		injury	
	•	Fracture of distal radius	
	•	Fractures of wrist and hand: Mechanism of injury, clinical	
		features and principles of management	

	Pelvic injuries with emphasis on hemodynamic instability	
	-Spine injuries with emphasis on mobilization of the patient	
	Acetabular fractures	
	Fracture of proximal femur	
	• Fracture of patella, fracture of distal femur, fracture of	
	proximal tibia with neurovascular injury and compartment	
	syndrome	
	• Fracture shaft of femur and management of fat embolism	
	as a complication	
	Fracture both bone leg, calcaneus, small bones of foot	
	Ankle fractures	
	Complications of fractures like malunion, nonunion,	
	Infection, compartment syndrome	
	Open fractures with focus on secondary infection	
	prevention and management	
3.	Musculoskeletal Infections (OR 3.1-3.3) CORE	5 Hours
	Acute osteomyelitis	
	Subacute osteomyelitis	
	Acute Suppurative Arthritis	
	Septic Arthritis & HIV infection	
	Spirochaetal infection	
	Skeletal Tuberoculosis	
4.	Bone and Joint Tuberculosis: [OR4.1] CORE	5 Hours
	Tuberculosis of spine & Pott's paraplegia	
	Tuberculosis of hip, knee and other joints	
5.	Rheumatoid Arthritis & associated inflammatory disorders	3 Hours
	(OR 5.1) CORE	

6.	Degenerative Disorders (OR 6.1) CORE	4 Hours
	Cervical spondylosis,	
	Iumbar spondylosis and	
	PIVD – Prolapsed Intervertebral Disc	
7.	Metabolic disorders (OR 7.1) CORE	5 Hours
	Rickets	
	Osteomalacia	
	osteoporosis	
	Scurvy	
	• Gout	
	Paget disease	
	Bone cyst	
8.	Poliomyelitis [OR8.1] CORE	2 Hours
9.	Cerebral Palsy [OR9.1] CORE	2 Hours
10.	Bone Tumors : Benign and malignant bone tumors and	5 Hours
	pathological fractures [10.1] CORE	
	Benign: Osteochondroma, Enchondroma	
	Malignant: osteosarcoma, Osteoclastoma, Ewing's tumor,	
	Multiple myeloma and secondaries	
11.	Peripheral Nerve Injuries [OR11.1] CORE	6 Hours
	Anatomy of peripheral nerve, pathology, classification, Diagnosis &	
	Management of Radial, ulnar, median, lateral popliteal and sciatic	
	nerve palsies.	
12.	Congenital Deformities: [OR12.1] CORE	6 Hours
	Congenital & acquired malformations & deformities of	
	a. Limbs & spine – Scoliosis & spina bifida	
	b. DDH – Developmental Dysplastic Hip, Torticollis	
	c. CTEV- Congenital Talipes Equino Varus	

13.	13. P	4 Hours	
	РМ 6		
	•		
	•	Principles of Early Mobilization, Use of crutches and common	
	Prosthesis for common amputations		
	Orthosis for ambulation in PPRP and other deformities or		
		disabilities	

#### **B. PSYCHOMOTOR DOMAIN:**

At the end of the course, student should acquire/observe the following clinical skills:

#### **Clinical Examination Methods:**

- 1. Introduction: History taking: Case sheet writing.
- 2. Clinical examination of different Fractures, dislocations, infections & tumours.
- 3. Clinical examination of different joints ex: Hip, Knee, Foot and Ankle, Shoulder, Elbow, Wrist and Spine.
- 4. Appropriate Clinical examination of Peripheral nerves and vascular system of both upper and lower limbs.

#### Procedures: OR 13.1 -13.2) CORE

- 1. Perform under supervision on mannequin / Simulated patients: **(to perform independently**)
  - a. Application of Compression Bandage
  - b. Above elbow and Below elbow slab/cast
  - c. Above knee / Below knee POP slab/ cast
  - d. Thomas splint

- e. Strapping for long bone fractures, shoulder and clavicle fractures
- f. Pelvic binder
- 2. Participate as a member in a team to **observe** 
  - a. Resuscitation of polytrauma patient: Neck immobilization using cervical neck collar, IV access central peripheral, Bladder catheterization, Endotracheal intubation
  - b. Joint Aspiration and Intrarticular injection observe in a mannequin (OR 3.2, PM 4.3)
  - c. Procedures drainage of abscess, sequestrectomy, saucerization and arthrotomy [OR3.3]
  - d. Basic fracture & dislocation management

#### C. AFFECTIVE DOMAIN:

1.	Counselling skills: (OR 14.1-14.3) CORE	2 Hours					
	Demonstration of ability to counsel the patients:						
	• Regarding the prognosis and complications of patients with						
	fractures with disabilities, fractures that require prolonged						
	bed stay, bone tumours, congenital disabilities.						
	Ability to Obtain consent for various orthopaedic						
	procedures: For patients with limb amputation, permanent						
	fixations etc.						
	• Demonstrate the ability to convince the patient for Referral						
	to a higher center in various orthopaedic illnesses, based on						
	the detection of warning signals and need for sophisticated						
	management						

#### 6. SCHEME OF EXAMINATION IN ORTHOPAEDICS

#### Assessment

Eligibility to appear for university examinations is dependent on fulfilling criteria in two main areas – attendance and internal assessment marks

#### Attendance

Attendance requirements are 75% in theory and 80% in clinical postings for eligibility to appear for the examinations in Orthopaedics. (Attendance is included with General Surgery)

#### Internal Assessment:

Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Logs of skill-based training shall be also maintained.

There shall be no less than three internal assessment examinations in Orthopaedics. An end of posting clinical assessment shall be conducted for each of the clinical posting.

Day to day records and logbook (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.

#### Internal Assessment & Formative Assessment: Theory 60 Marks

The internal assessment for General Surgery and Orthopeadics shall consist of 45 marks for General Surgery and 15 marks for Orthopedics in theory component. The total marks to be reduced to 30 and sent to the surgery

#### Clinical/Practical 40 Marks

There will be ward leaving examination at the end of 1<sup>st</sup> and 3rd posting. Second end posting exam shall be OSCE, 30 marks for general surgery and 10 marks for orthopaedics. Average of any two best marks obtained in the clinical examination shall be reduced to 30 marks and sent to the University.

# SCHEME OF EXAMINATION INTERNAL AND FORMATIVE ASSESSMENT Surgery & Allied Subjects

#### THEORY AND PRACTICAL

Internal Assessm	nent (IA	)	Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained
2 <sup>nd</sup> Prof year	IA-I	IA —I	50		100	
		IA-II	50		100	
<b>3</b> <sup>rd</sup> part <b>I</b> Prof	IA-II	IA-III	50		100	
year		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100	
year			100 * (50 marks to be provided by Allied) 200		100 * (50 marks to be provided by Allied) 200	
		(Prelims)	200		200	
	For	native Asse	ssment (Surg	ery & Alliec	)	
Part completion test Integrated		20				
		SGT	40		-	
		SDL	20		-	
Certifiable skills					70	
Other than certifia	ble skills				05	
AETCOM Skills			10		10	
Participation in SG	Г		10			
Co-Curricular and of activities	other acad	demic			05	
Practical record					05	
Log Book					05	
Total Marks			700		700	
Total Reduced to 100 Marks			/ 10	0	/ 10	00
Grand Total (Aggregate of theory & Practical's) (Min.50%)			/ 2	00		
Eligible –				YES /	NO	

#### \* Surgery & Allied:

<u> </u>	
Subject	Marks
Orthopaedics	30
Anaesthesiology	10
Radiodiagnosis	10
Total	50

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA - I, IA - II & IA - III Scores.

# **University Examination:**

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

Theory (Written)

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 Questions- each question carrying 10 marks

Short Essay Questions- 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 Examinations shall be as follows.

Paper I- Max Marks- 100 (General Surgery)

Paper II- Max Marks- 100

Section A (General Surgery) 50 Marks

## Section B (Orthopedics) 50 marks

		Total Marks = 50
4.	Short Answers- 5 x 3 marks each	= 15 Marks
3.	Short Essay- 3 x 5 marks each	= 15 Marks
2.	Long Essay- 1 x 10 marks each	= 10 Marks
1.	MCQ- 10 x 1 marks each	= 10 Marks

#### **Clinical Examination**

Surgery- 120 marks (1 Long case of 60 marks and 2 short cases of 30 marks each)

Orthopedics - 40 marks (2 Short cases of 20 marks each)

Viva Voce Examination- 40 marks (Surgery- 30 +Orthopedics- 10)

	Theory				Practical / Clinicals				
Subject	Paper-1	Рареі	2	Internal Assess ment	Total	Practical Examinati on + Viva	Internal Assessment	Total	Grand Total
Surgery	Surgery 100	Surgery 50 A	50 B	100	200	200	100	200	400

#### Books recommended (Latest editions)

- 1. Natarajan M., Text book of Orthopaedics Vol. I ,II& III.All Ind Pub Dist Regd.
- 2. Maheshwari, Text book of Orthopaedics.III, Mehta Publisher.
- 3. Crawford Adams, outline of Orthopaedics, Fracture and dislocation. Pub.CH- Livingstone ELBS.
- 4. Crawford Adams, outline of Orthopaedics, ELBS, Pub- CH- Livingstone.
- 5. BAILY & Love, A short practice of Surgery, (International Students Pub. ARNOLD-HEINEMANN Edition).
- 6. Graham Apley, System of Orthopaedics. Pub. ARNOLD-HEINEMANN.
- 7. Clinical Methods in Surgery, S Das. Pub.ELBS with Wolfe
- 8. John Ebnezar, Text book of Orthopaedics. Pub.Jaypee Brothers
- 9. McRae clinical Orthopaedics 6<sup>th</sup> edition
- 10. Apley's concise system of Orthopaedics& Fractures 3<sup>rd</sup> edition

# **DEPARTMENT OF RADIODIAGNOSIS**

#### **Course Description**

**1. Preamble:** The purpose of UG education is to create doctors who would provide high quality health care and advance the cause of science through research & training. The purpose of this programme is to standardize Radiodiagnosis teaching at under-graduate level throughout the country so that it will benefit achieving uniformity in undergraduate teaching. The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. This document was prepared by various subject-content specialists. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of "domains of learning" under the heading "competencies".

At the end of training in Radiodiagnosis a MBBS Graduate shall be able to recognize common disease and treat them effectively in the community. He should be able to diagnose common diseases and refer the cases timely.

## 2. Goals:

The broad goal of teaching the undergraduate medical students in the field of Radio-diagnosis should be aimed at making the students realize 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.

#### 3. Objective Knowledge:

The student shall be able to:

- 1. Explain basics of x-ray production, its uses and hazards.
- 2. Interpret and diagnose changes in bones like fractures, infections, tumors and metabolic bone diseases.
- 3. Identify and diagnose various radiological changes in disease conditions of chest and mediastinum, Gastro intestinal tract, Hepatobiliary system and Genito-Urinary (G.U) system and central nervous system.

- 4. Describe various imaging techniques, including radioisotopes, computerized Tomography (C.T scan), Ultrasound with color Doppler, Magnetic Resonance Imaging (M.R.I) and D.S.A. (Digital Substraction Angiography) Mammography, Bone densitometry & PET-CT.
- 5. At the end of SGT/SDL formative assessment for students to be conducted for concerned competencies.
- 6. At the end of the posting, End posting assessment is conducted with a session on spot films, at least 10 films.

#### Skills:

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

- 1. Demonstrate basic protective techniques during various imaging procedures.
- 2. Council the Patient regarding hazards of radiation in pregnancy, PC and PNDT Act and genetic counselling

#### Departmental objectives

At the end of the course in Radio-diagnosis, the students 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.

#### 4. Course content

The course content been given in detail below which includes competencies, specific learning objectives for each competency and the suggested Teaching-Learning methods and assessment methods both formative and summative. The competencies have been developed by an expert group nominated by NMC.

#### Teaching-Learning methods and Time allotted

	Lectures	Small group discussion	Self- directed learning	Total hours	Clinical posting
Radiodiagnosis	10 hours	08 hours	02 hours	20 hours	One postings of 2 weeks each. (posting in II/II)

#### To be noted:

- The number of hours mentioned above is rough guidelines that can be modified to suit the specific requirements of a medical college.
- It is recommended that didactic teaching be restricted to less than one third of the total time allotted for that discipline.
- Greater emphasis is to be laid on hands-on training, symposia, seminars, small group discussions, problem-oriented and problem-based discussions and self- directed learning.
- Students must be encouraged to take active part in and shared responsibility for their Learning
- Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case-based learning. Didactic lectures not to exceed one-third of the total teaching time. The teaching learning activity focus should be on application of knowledge rather than acquisition of knowledge.
- The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible to enhance learner's interest and eliminate redundancy and overlap. The integration allows the student to understand the structural basis of radiological investigations, their importance and correlation with clinical assessment and diagnosis.
- The clinical postings in the second professional shall be 15 hours per week (3 hrs. per day from Monday to Friday)

#### Theory

#### **Cognitive domain**

#### 1. Introduction to Radiology (1 hr.) (RD.1.1, 1.2)

#### (CORE)

- 1.1) Introduction to Radiology & Radiation protection.
- 1.2) Evolution of Radiodiagnosis & various equipments in current area.

## 2. Radiology in Internal medicine (1 hr.) (RD 1.5)

#### (CORE)

Indications for common Radiological Investigations.

Choose & interpret findings in common conditions pertaining to disorders in Internal medicine.

#### **Respiratory system:**

- 1) Various conventional and recent imaging modalities in chest.
- Diagnosis of common conditions like tuberculosis, consolidation, pleural effusion, HIV, bronchogenic carcinoma, mediastinal masses and pleural pathologies.
- 3) Ultrasonographic applications in chest diseases.
- 4) Indications for chest CT scan & MRI.

#### Cardiovascular system:

- 1. Development of heart.
- 2. Normal topography of heart, cardiomegaly.
- 3. Rheumatic heart diseases and pericardial effusion.
- 4. Important heart disease and pericardial effusion.
- 5. Enchocardiography and utility of color Doppler.

- 6. Awareness of Newer modalities in cardiac imaging like Cardia MRI & Cardiac multislice CT, Radio-isotope study.
- 7. Indications of coronary angiography.

#### Hepato biliary system

- 1. Cholelithiasis
- 2. Ultrasonography in jaundice and pancreatitis.
- 3. Color Doppler in portal hypertension.
- 4. Role of CT & MRI in imaging of hepato biliary system pathologies.

#### Central nervous system:

- 1. Limitations of plain radiography in skull.
- 2. Plain and contrast study of CT & MRI of head & spinal cord.
- 3. Plain radiography of cervical spine.

## Radiology in Surgery (1 hr.) (RD 1.6)

#### (CORE)

- Indication for common Radiological Investigation.
- Choose & interpret findings in common conditions pertaining to disorders in Surgery.

#### Gastrointestinal system.

- 1.1 Diagnosis of acute abdominal conditions like intestinal obstruction, perforation etc.
- 1.2 Differential diagnosis of calcifications and stones on plain X-ray.
  - Diagnosis of gastric ulcer / duodenal ulcer.
  - Awareness of Newer modalities like CT enterocysis & MR enteroclysis.

# 2. Radiology in Paediatrics. (1 hr.) (RD 1.7)

- Enumerate Indications for common Radiological Investigations.
- choose the appropriate & Interpret findings in common conditions pertaining to disorders in paediatrics.
  - 1. Important cyanotic and acyanotic congenital heart disease.
  - 2. Hirschprung's disease and intussception
  - 3. Nutritional deficiencies like rickets and scurvy.
  - 4. Bone changes in common hemapoietic system like sickle aneamia.

# 3. Radiology in Obstetrics & Gynecology. (1 hrs) (RD 1.4, 1.12)

# (CORE)

- Enumerate Indications for common Radiological Investigations.
- Choose the appropriate & Interpret findings in common conditions pertaining to
- disorders in obstetrics & Gynecology.

#### Obstetrics and gynecology.

- 1. Radiation hazards to a pregnant woman and fetus. Appropriate time to take X-ray during pregnancy.
- 2. Ultrasonography in PV bleeding, detection of fetal anomalies and fetal wellbeing.
- 3. Indications for transvaginal sonography.
- 4. Hysterosalpingography. (HSG)

# 4. Common Radiological Imaging procedures. (1 hr) (RD. 1.11)

# (CORE)

- Describe patient preparation for common Imaging procedures

- Enumeration of indications & Basic Interpretation on of common Imaging procedures.
- Chest X-ray, Hand X-ray and X-ray erect abdomen
- Types of contrast
- Barium studies -
  - (1) Barium Swallow
  - (2) Barium meal
  - (3) Barium meal follow through
  - (4) Barium enema
- IVP HSG MCU / RGU Sinogram

#### 5. Emergency Radiology. (1 hrs) (RD 1.10)

#### (CORE)

- Role of Emergency Radiology, miscellaneous & applied aspects.
- Interaction with clinical departments.

#### 6. Radiology in Common Malignancies (Onco Radiology) (1 hr.) (RD 1.8)

#### (CORE)

- Enumerate indications for common Radiological Investigation.
- Choose interpret findings in common conditions pertaing to disorders pertaining to common malignancies.
  - 6.1 Gastrointestinal system -cancer stomach / oesophageal cancer/ colon cancer
  - 6.2 Bone tumors- Osteosarcoma/Osteochondroma/Ewings sarcoma
  - 6.3 Ovarian /uterine/ cervical malignancies
  - 6.4 Breast cancer- mammography evaluations and indications

# 7. Radiology in ENT. (1 hrs.) (RD 1.3)

# (CORE)

- Enumerate indications for common Radiological Investigation.
- Choose interpret findings in common conditions pertaining to disorders pertaining to common malignancies.
- X ray PNS- Water's view, CT PNS.

# 8. Interventional Radiology. (1 hrs.) (RD 1.9) (CORE)

- Role of Investigational Radiology in Common Clinical Conditions.
- Guided Biopsies/FNAC
- USG guided abscess drainage
- Vascular interventions- varicose veins, EVLT (Endovascular Laser Treatment)

# Affective domain

At the end of course student should be able to communicate in non-intimidating and empathetically way to the pregnant patient about the hazard associated with radiological procedures in pregnancy.

Able to counsel and explain provision and legal implication of PC and PNDT

# Psychomotor domain

At end of the course student should be able to acquire the basic skills of protective technique during various imaging procedure.

# Practical's/ tutorials/ small group discussions/ integrated teaching:

# SGT (Small group teaching) classes (8 hours)

- 1) Radio-diagnosis and Medicine (RD 1.5) (2 hours)
- 2) Radio-diagnosis and Surgery (RD 1.6) (2 hours)

- 3) PC and PNDT Act (RD 1.13) (2 hours)
- 4) Radio-diagnosis for common imaging procedures (RD 1.11) (2 hours)

#### SDL classes (2 hours)

1) Radio-diagnosis in Common Malignancies (RD 1.8) (2 hours)

#### LOG BOOK:

S. No.	Contents	Evaluation
I.	Interpretation of X ray films	End posting
II.	Competencies	
	A. Requiring Certification	-
	B. Requiring Documentation	
III.	Skill Learning Sessions	
	A. Certifiable Procedural Skills	Formative
	B. Other Skills	Assessment
IV.	Affective Competencies Requiring	
	Documentation	AETCOM
V.	Clinic/ Field Visits	NIL
VI.	Participation in Departmental Activities	
VII.	Self-Directed Learning (SDL) Sessions	Theory paper
VIII.	Integrated Learning Sessions	

#### **CURRICULUM:**

#### THEORY.

Didactic lectures of one-hour duration once a week.

Small group discussion (SGD) of two hours duration as an afternoon session.

Self-directed learning (SDL) of two hours duration as an afternoon session.

Topics	Lectures	SGT	SDL	Grand Total Hrs.
	Duration: 1Hrs.	Duration: 2 Hrs.	Duration: 2Hrs.	
Introduction to Radiology	1			1
Radiology in internal Medicine	1	1		3
Radiology in Common malignancies	1		1	3
Radiology in ENT	1			1
Emergency Radiology	1			1
Radiology for common imaging procedures	1	1		3
Radiology in Surgery	1	1		3
Pediatric Radiology	1			1
Radiology in OBG and Radiation in Pregnancy	1			1
Interventional Radiology	1			1
PC and PNDT Act		1		2

# PRACTICAL CLINICAL TRAINING

SI. No.	Title	Weeks	Sessions (Duration: 3hrs)	Total in hours
I	Clinical Posting I	2	10	30

#### 5. Assessment

Eligibility to appear for university examinations is dependent on fulfilling criteria in two main areas – attendance with formative and summative assessment marks.

Formative and summative assessment done in the form of interpretation of common X rays pertaining to common medical and surgical conditions.

#### Attendance

Attendance requirements are 75% in theory and 80% in clinical postings for eligibility to appear for the examinations.

#### Internal Assessment

Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Logs of skill-based training shall be also maintained.

There shall be no less than two internal assessment examinations in Radiodiagnosis. An end of posting, clinical assessment shall be conducted for each of the Radio-diagnosis clinical posting.

Day to day records and logbook (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.

The results of internal assessment should be displayed on the notice board within 1-2 weeks of the test. Learners must have completed the required certifiable competencies for that phase of training and Radio-diagnosis logbook entry completed to be eligible for appearing at the final university examination.

AETCOM assessment will include: Written tests comprising of short notes and creative writing experiences,

Internal assessment marks will be clubbed with general surgery for the eligibility for appearing in final university examination.

#### Marks allotted:

The Radiodiagnosis theory paper should include different types such as short essays, Short Answers Questions (SAQ) and MCQs (Multiple Choice Questions) which will cover indications and interpretation of common x rays pertaining to surgical conditions, medical emergencies, ENT, orthopedic and pediatric conditions.

## **DEPARTMENT OF RADIO-DIAGNOSIS**

#### Scheme of Examination: MBBS III/II Phase

# Radio diagnosis theory questions will be a part of separate section in paper II of general surgery

#### Written Paper

Type of Questions	Number	Allotted marks	Total
Multiple choice	4	1	4
questions ( MCQ)			
Short answers	2	3	6
Total			10

# ASSESSMENT INTERNAL AND FORMATIVE ASSESSMENT Surgery & Allied Subjects

#### THEORY AND PRACTICAL

Internal Assessment (IA)			Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained
2 <sup>nd</sup> Prof year	IA-I	IA –I	50			
		IA-II	50		100	
<b>3</b> <sup>rd</sup> part <b>I</b> Prof	IA-II	IA-III	50		100	
year		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100	
year		IA-VI IA-VII	100 * (50 marks to be provided by Allied) 200		100 * (50 marks to be provided by Allied) 200	
	For	native Asse	ssment (Sura	erv & Alliec		
Part completion test Integrated		20				
		SGT	40			
		SDL	20		A	
Certifiable skills					70	
Other than certifia	ble skills				05	
AETCOM Skills			10		10	
Participation in SG	Г		10			
Co-Curricular and activities	other acad	demic			05	
Practical record					05	
Log Book					05	
Total Marks			700		700	
Total Reduced to 100 Marks			/ 10	0	/ 10	0
Grand Total (Aggregate of theory & Practical's) (Min.50%)			/ 2	00		
Eligible –				YES /	NO	

#### \* Surgery & Allied:

Subject	Marks
Orthopaedics	30
Anaesthesiology	10
Radiodiagnosis	10
Total	50

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA - I, IA - II & IA - III Scores.

#### **Internal Assessment**

Theory	Marks	Practical (End posting)	Marks
1 <sup>st</sup> Internal	25		25
2 <sup>nd</sup> Internal	25		

# **Recommended Books (Latest editions)**

SI. No	Name of the Book	Name of the author	Publisher
1)	Text Book of Radiology and Imaging Vol I &	Sutton	Churchill
	Vol II		Livingastone
2)	Diagnostic Radiology Vol I , II	Ronald G Grainger	Churchill
			Livingstone
3)	Positioning in Radiology	Clark	CBS
4)	Ultrasonography in obstetrics & Gynecology	Callen	Saunders
5)	Radiographic Anatomy	Butler	Cambridge
6)	Principles of nuclear medicine	Wagner	W.B. Saunders
7)	Diagnostics Radiology CT & MRI of whole bod Vol. I & II.	/ Haaga	MOSBY
8)	Pediatric X-ray diagnostic vol. I & II	Caffey's	Churchill
			Livingstone
9)	Skeletal Radiology	Yochum	Lippincott
10)	Chest Radiology	Fraser & Muller	Saunders
		(Synopsis)	
11)	Alimentary Tract and Imaging	Gore	Saunders
12)	MSK Radiology	Kaplan	Saunders
13)	Diagnostic Ultrasound Vol. I & II	C. Rumack	Elsevier
14)	Christensen's physics of Diagnostic Radiology	Curry T.S. &	Lea & febiger
		Dowdey J.E.	
15)	Pediatric X-ray diagnostic Vol. I & II	Caffey's	Churchill
			Livingstone
16)	Colour Doppler	Zwiebel	Elsevier
		Allen	Churchill
			Livingstone

17)	Radiological Procedures	Bhushan Lakhkar	Avichal
		Whitehouse	Blackwell
18)	Diagnostic Ultrasound Vol. I & II	Cosgrove	Churchill
			Livingstone
19)	Diagnostic Radiology CT & MRI whole body Vo	l Lee & Sagel	Ubran
	I & II		Schwarzenberg
20)	Text book of Neuro imaging	Osborn	MOSBY
21)	Radiology review Manual (Differentials)	Danhert	Lippincott
22)	Radiology of skeletal disorders	Jacobson's	Elsevier
23)	Radiology of the kidney and Genito -	Davidson's	Saunders
	urinary tract		
24)	High Resolution CT of the lung	Webb	Wolters Kluwer
25)	Head & Neck Imaging	Som & Curtin	Elsevier
26)	Magnetic Resonance Imaging Vol I & II	Stark & Bradley	Mosby
27)	Atlas of MR imaging of Brain and spine	Scott W	Wolters Kluwer
28)	General Ultrasound	Mittelstaedt C	Churc
			hill
			Livings
			tone

# DEPARTMENT OF ANAESTHESIOLOGY

#### 1. GOALS

- 1. At the end of the course, an Indian Medical Graduate should acquire such knowledge and skills that may enable him to understand principles of anaesthesia and recognize risks and complications of anaesthesia.
- 2. Students should be able to perform cardio-pulmonary resuscitation correctly, including recognition of cardiac arrest.

#### 2. OBJECTIVES:

A. KNOWLEDGE:

At the end of the course in Anaesthesiology, the Indian Medical Graduate student should be able to achieve the following competencies:

- 1. Describe the goals and scope in Anaesthesia.
- 2. Enumerate and describe the principle of ethics as it relates to Anaesthesiology
- 3. Describe the principles of preoperative evaluation
- 4. Enumerate the indications, describe the steps of Basic Life Support in adults and children
- 5. Describe the anatomy of the airway and its implications for general anaesthesia
- 6. Describe the correlative anatomy of the brachial plexus, subarachnoid and epidural spaces
- 7. Describe and discuss the pharmacology of drugs used in induction and maintenance of general anaesthesia and regional anaesthesia,
- 8. Describe the roles of Anaesthesiologist as a perioperative physician
- 9. Describe the common complications encountered by patients in the recovery room, their recognition and principles of management
- 10. Describe the principles of fluid therapy in the perioperative period
- 11. Describe the pharmacology and use of drugs in the management of pain

- 12. Enumerate blood products and describe the use of blood products in the perioperative period
- 13. Enumerate the complications of incorrect patient positioning
- 14. Enumerate the hazards encountered in the perioperative period and steps/ techniques taken to prevent them
- 15. Describe the role of communication in patient safety
- 16. Define and describe common medical and medication errors in anaesthesia
- B. PSYCHOMOTOR SKILLS:

At the end of the course in Anaesthesiology, the Indian Medical Graduate student should be able to:

- 1. Demonstrate the steps of Basic Life Support in a simulated environment for adults and children
- 2. Demonstrate the steps of Advanced Life Support in a simulated environment for adults and children
- 3. Demonstrate and document an appropriate clinical examination in a patient undergoing Surgical Procedures.
- 4. Demonstrate ability to choose the appropriate investigations and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- 5. Demonstrate the steps/ techniques involved in peripheral intravenous cannulation
- 6. Demonstrate the steps/ techniques involved in laryngoscopy, endotracheal intubation and LMA insertion
- 7. Demonstrate the steps/ techniques involved in lumbar puncture, spinal anaesthesia and simple nerve blocks under supervision
- 8. Demonstrate the various modalities of monitoring techniques in Anaesthesia.

#### C. ATTITUDE / ETHICS COMMUNICATION SKILLS :

At the end of the course in Anaesthesiology the Indian Medical Graduate student should:

- 1. Practice selflessness, integrity, responsibility and accountability.
- 2. Respect and maintain professional boundaries between patients, colleagues and society.
- 3. Demonstrate ability to recognize and manage ethical and professional conflicts.
- 4. Abide by prescribed ethical and legal codes of conduct and practice.
- 5. Demonstrate a commitment to the growth of the medical profession as a whole.

#### 3. INTEGRATION:

The teaching is aligned and integrated horizontally and vertically in order to provide comprehensive care for patients undergoing various surgeries, in patients with pain, in intensive care and in cardio respiratory emergencies. Integration with the preclinical department of Anatomy, para- clinical department of Pharmacology and horizontal integration with any/all surgical specialities is proposed.

#### 4. Course content

The course content been given in detail in the above table, which includes competencies, specific learning objectives for each competency and the suggested Teaching-Learning methods and assessment methods both formative and summative. The competencies have been developed by an expert group nominated by NMC, while the SLOs, T-L methods and assessments methods have written by the expert committee constituted by Rajiv Gandhi University of Health Sciences.
# Teaching-Learning methods and Time allotted

# Teaching hours in Anaesthesiology

Lectures	Small	Self-	Clinical posting	Total
	group	directed	(weeks)	hours
	discussion	learning		
10 hours	8 hours	2 hours	2 weeks clinical	20 hours
			postingPY III/I	

Theory (hours)	10 hours
Clinical posting	2 weeks clinical
(weeks)	postingPY III/I

# 5. COURSE CONTENT

Teaching hours - 10

# I. THEORY Topic (Competencies)

# 1. Anaesthesiology as a specialty [1 hour]

- A. Non-core
  - AS 1.1, AS 1.3 Describe & enumerate the evolution and principle of ethics in Anaesthesiology as a modern specialty

# 2. Preoperative evaluation [1 hour]

- A. <u>Core</u>
  - AS 3.1, AS 3.2, AS 3.3 Describe the principles of preoperative evaluation; elicit, present and document an appropriate history including medication history, clinical examination in a patient undergoing Surgery
  - AS 3.4, AS 3.5, AS 3.6 Choose and interpret appropriate testing, determine readiness and write a prescription for appropriate premedications for patients undergoing Surgery

# 3. General Anaesthesia [2 hours]

### A. <u>Core</u>

- AS 4.1, AS 4.3 Describe and discuss the pharmacology of drugs, principles and the practical aspects involved in induction and maintenance of general anaesthesia
- AS 4.6, AS 4.7 Observe and describe the principles and the steps/ techniques involved in day care anesthesia, and anaesthesia outside the operating room

# 4. Regional Anaesthesia [1 hour]

- A. <u>Core</u>
  - AS 5.1, AS 5.4 Describe the pharmacology of drugs used, indications for and principles of regional anaesthesia (including spinal, epidural and combined)

# 5. Post Anaesthesia Recovery [1 hour]

- A. <u>Core</u>
  - AS 6.1, AS 6.3 Describe the principles of monitoring, resuscitation, recognition & management of common complications in the recovery room

# 6. Intensive Care Management [1 hour]

- A. <u>Core</u>
  - AS 7.1, AS 7.2 Describe the functions of Intensive Care Unit, admission & discharge criteria of a patient in ICU.
  - AS 7.3 Describe the management of an unconscious patient

# 7. Pain and its management [1 hour]

- A. <u>Core</u>
  - AS 8.1, AS 8.2, AS 8.3 Describe the anatomical correlation, physiologic principles, pharmacology, level, quality, quantity and tolerance of pain in a patient or surrogate

• AS 8.4, AS 8.5 Describe the principles of pain management in palliative care and in the terminally ill.

## 8. Fluids [1 hour]

- A. <u>Core</u>
  - AS 9.3, AS 9.4 Describe and enumerate the principles of fluid therapy, blood products in the perioperative period

# 9. Patient safety [1 hour]

- A. <u>Core</u>
  - AS 10.1, AS 10.2, AS 10.4 Enumerate the hazards in perioperative period, incorrect patient positioning, common medical, medication errors in anaesthesia and steps/techniques taken to prevent them.
  - AS 10.3 Describe the role of communication in patient safety

# II. SMALL GROUP TEACHING

### 1. Cardiopulmonary Resuscitation [2 hours]

- A. <u>Non-core</u>
  - AS 2.1, AS 2.2 Enumerate the indications, describe the steps and demonstrate in a simulated environment, Basic Life Support and Advanced Life Support in adults, children and neonates

# 2. General Anaesthesia [1 hour]

- A. <u>Core</u>
  - AS 4.2 Describe the anatomy of the airway and its implications for general anaesthesia

# 3. Regional Anaesthesia [2 hours]

- A. <u>Core</u>
  - AS 5.2, AS 5.3 Describe the correlative anatomy of the brachial plexus, subarachnoid, epidural spaces and steps/techniques involved in peripheral nerve blocks

# 4. Post Anaesthesia Recovery [1 hour]

- A. <u>Core</u>
  - AS 6.2 Observe and enumerate the contents of the crash cart and describe the equipment used in the recovery room

### 5. Intensive Care Unit [1 hour]

- A. <u>Core</u>
  - AS 7.4, AS 7.5 Observe and describe the basic setup process of a ventilator and principles of monitoring in an ICU

### 6. Fluids [1 hour]

- A. <u>Core</u>
  - AS 9.1, AS 9.2 Establish intravenous and central venous access in a simulated environment

### III. SELF-DIRECTED LEARNING [2 hours]

- A. Non-core
  - AS 1.2, AS 1.4 Describe the roles of Anaesthesiologist in the medical profession and the prospects of Anaesthesiology as a career

### TOTAL HOURS OF TEACHING: 10 (Including AETCOM)

S. NO.	COMPETENCY NO.	TOPIC	HOURS
THEOR	Y - ANAESTHESIOLOG	(	•
1.	AS 1.1, AS 1.3	HISTORY OF ANAESTHESIA, GOALS,	1
		ETHICS AND SCOPE IN ANAESTHESIA	
2.	AS 3.1 - AS 3.6	PREOPERATIVE EVALUATION	1
3.	AS 4.1, AS 4.3, AS 4.6,	DRUGS USED IN GENERAL	1
	AS 4.7	ANAESTHESIA	
4.	AS 4.6, AS 4.7	DAY CARE ANAESTHESIA, NORA	1
5.	AS 5.1, AS 5.4	REGIONAL ANAESTHESIA	1
6.	AS 6.1, AS 6.3	POST ANAESTHESIA RECOVERY	1
7.	AS 7.1, AS 7.2, AS 7.3	INTENSIVE CARE MANAGEMENT	1
8.	AS 8.1-AS 8.5	PAIN	1
9.	AS 9.3, AS 9.4	IV FLUIDS	1
10.	AS 10.1 – AS 10.4	PATIENT SAFETY	1

### TOTAL HOURS AS PER PRESENT DOCUMENT = 10

S.	COMPETENCY NO.	TOPIC	HOURS
NO.			
SMALL	<b>GROUP TEACHING – AI</b>	NAESTHESIOLOGY	
1.	AS 2.1, AS 2.3	CARDIOPULMONARY RESUSCITATION	2
2.	AS 4.2	GENERAL ANAESTHESIA	1
3.	AS 5.2, AS 5.3	REGIONAL ANAESTHESIA	2
4.	AS 6.2	POST-ANAESTHESIA RECOVERY	1
5.	AS 7.4, AS 7.5	INTENSIVE CARE UNIT	1
6.	AS 9.1, AS 9.2	FLUIDS	1

### TOTAL HOURS AS PER PRESENT DOCUMENT = 8

S. NO.	COMPETENCY NO.	ТОРІС	HOURS
SELF-D	RECTED LEARNING -	ANAESTHESIOLOGY	
1.	AS 1.2	DESCRIBE THE ROLES OF	1
		ANAESTHESIOLOGIST IN THE	
		MEDICAL PROFESSION (INCLUDING	
		AS A PERI- OPERATIVE PHYSICIAN, IN	
		THE INTENSIVE CARE AND HIGH	
		DEPENDENCY UNITS, IN THE	
		MANAGEMENT OF ACUTE AND	
		CHRONIC PAIN, INCLUDING LABOUR	
		ANALGESIA, IN THE RESUSCITATION	
		OF ACUTELY ILL)	
2.	AS 1.4	DESCRIBE THE PROSPECTS OF	1
		ANAESTHESIOLOGY AS A CAREER	

### TOTAL HOURS AS PER PRESENT DOCUMENT = 2

SCHEME OF EXAMINATION FOR ANAESTHESIOLOGY

A. Internal assessment

### I. Theory (50 marks)

A minimum of two theory examinations will be conducted in professional year III part I. The 3<sup>rd</sup> IA (Preliminary) examination preceding the university examination

will be similar to the pattern of university examination, shall be conducted along with Department of Surgery.

# II. Practical and Viva-voce (50 marks)

A minimum of two practical examinations shall be conducted in PY III/I at the end of clinical posting. The 3<sup>rd</sup> IA (Preliminary) examination preceding the university examination will be similar to the pattern of university examination, shall be conducted along with Department of Surgery.

## OSCE TRAINING

OSCE training will be conducted at the end of Anaesthesia clinical posting.

# 6. SCHEME OF EXAMINATION

UNIVERSITY EXAMINATION ELIGIBILITY FOR EXAMINATION

- 1. The candidate must have undergone satisfactorily the approved course of the study in the subject within prescribed duration.
- 2. Candidate should have at least 75% of attendance in theory and 80% in practical separately to become eligible to appear for the examination in the subject.
- 3. Candidate should have at least 40% of total marks fixed by internal assessment both in theory and practical individually.
- 4. Candidate should secure 50% marks in aggregate of the total marks combined in theory and practical assigned for IA in the subject.

# ASSESSMENT INTERNAL AND FORMATIVE ASSESSMENT Surgery & Allied Subjects

### THEORY AND PRACTICAL

Internal Assessment (IA)		Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained	
2 <sup>nd</sup> Prof year IA-I		IA —I	50		100	
		IA-II	50		100	
<b>3</b> <sup>rd</sup> part <b>I</b> Prof	IA-II	IA-III	50		100	
year		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof	IA- III	IA-V	100		100	
year		IA-VI IA-VII	100 * (50 marks to be provided by Allied) 200		100 * (50 marks to be provided by Allied) 200	
	Forr	native Asse	ssment (Surg	ery & Alliec		
Part completion te	st	Integrated	20	-		
SĞT		SGT	40			
SDL		20				
Certifiable skills					70	
Other than certifia	ble skills				05	
AETCOM Skills			10		10	
Participation in SG	Г		10			
Co-Curricular and o activities	other acad	demic			05	
Practical record					05	
Log Book					05	
Total Marks		700		700		
Total Reduced to 100 Marks		/ 10	0	/ 10	0	
Grand Total (Aggregate of theory & Practical's) (Min.50%)			/ 2	00		
Eligible –		YES / NO				

#### \* Surgery & Allied:

Subject	Marks
Orthopaedics	30
Anaesthesiology	10
Radiodiagnosis	10
Total	50

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA – I, IA – II & IA – III Scores.

# **DEPARTMENT OF OBSTETRICS & GYNAECOLOGY**

# 1. PREAMBLE

The goal of competency based medical education is to train a Medical student into competent Indian Medical Graduate (IMG).

IMG should possess requisite knowledge, skills, attitudes, values and responsiveness, so that he/ she may function appropriately and effectively as a physician of first contact of the community, while being globally relevant. To fulfil this, IMG should be able to perform the following roles: a clinician, communicator, a life long learner, a professional and a team leader.

CBME aims to train IMG, in effective solving of case based scenario, perform complete and relevant physical examination, elicit and record complete and relevant history from patient and relevant sources, choose the appropriate diagnostic test and interpret it, generate differential diagnosis and management plans, prescribe and administer appropriate therapies, be aware of national and regional health care policies, medico-legal, social and ethical problems.

### 2. GOALS:

At end of the course Indian Medical Graduate should become competent Doctor who is able to handle goal of the teaching of undergraduate students in Obstetrics and Gynecology is that he/she shall acquire understanding of anatomy, physiology and pathophysiology of the reproductive system, develop an attitude of preventive care empathy and gain the ability to optimally manage common conditions affecting women and mothers.

### 3. OBJECTIVES:

# A) KNOWLEDGE

At the end of the course, the student-should be able to achieve following competencies.

a) At the end of the course the student shall be able to outline anatomy, physiology & pathophysiology of the reproductive system including embryology and the common conditions affecting it.

- b) To manage normal pregnancy, labor, puerperium and manage the problems likely to be encountered Understand problems of abnormal pregnancy.
- c) Detect high risk pregnancy, provide primary care and learn when to refer to higher center.
- d) Monitor fetal growth and identify deviations from normal.
- e) Understand the leading causes of maternal and perinatal morbidity and mortality and how to reduce the same.
- f) Understand the principles of contraception, various techniques employed, methods of Medical Termination of Pregnancy (MTP), sterilization and their complications and legal pre-requisites and PCPNDT Act .
- g) State indications, techniques & complications of Obstetric and gynecological surgeries.
- h) Identify the use, abuse and side effects of drugs in pregnancy and lactation.
- i) Describe the National program of Maternal & Child Health, Family Welfare and their implementation at various levels.
- j) Learn about new-born breast feeding, assessment of asphyxia, neonatal jaundice and resuscitation.
- k) Identify common gynecological diseases & describe principles of management.
- I) Understand basic reproductive endocrinology, know problems related to infertility, menstrual disorders, menopause and hormone therapy.
- m) Diagnosis of genital tract malignancy, principles of treatment, screening and prevention.
- n) Learn indications and use of ultrasound in obstetrics and gynecology and the legal prerequisites.
- o) Learn indications and use of minimally invasive surgeries including Diagnosis, Hysteroscopy, Laparoscopy.

p) Interested students will be given short term projects from the department to enhance their knowledge in research methodology.

### **B) PSYCHOMOTOR SKILLS-**

At the end of the Course, the student shall be able to achieve following competencies

- a) Examine a pregnant woman, recognize high risk pregnancies and make appropriate referrals.
- b) Conduct normal deliveries, provide post natal care, recognize complications promptly & make appropriate referral.
- c) Learn basics of neonatal resuscitation, assess gestational age and detect major anomalies.
- d) Counsel regarding contraception & assist in insertion & removal of IUCD
- e) Perform pelvic examinations, diagnose and manage common gynecological problems including screening of cancer.
- f) Interpret data of investigations like biochemical, histopathological & imaging.
- g) Prepare pap smear & examine vaginal wet smear for trichomonal & canididial infections.

# C) ATTITUDE AND ETHICS

At the end of the course the students will be able to achieve following competencies

- a) Understand and apply principles of bioethics and law as they apply to medical practice and research
- b) Understand and apply the principles of clinical reasoning as they apply to the care of the women and their progeny.
- c) Understand and apply the principles of system-based care as they related to the care of the patient.
- d) Understand and apply empathy and other human values to the care of the patient.

- e) Communication effectively with patients, families, colleagues and other health care professionals.
- f) Understand the strengths and limitations of alternative systems of medicine
- g) Respond to events and issues in a professional, considerate and humane fashion
- h) Translate learning from the humanities in order to further his / her professional and personal growth.
- i) Develop a strong sense of preventive care and attitude towards early detection of high-risk problems.

### D) COMMUNICATION SKILLS

- a) Building the doctor patient relationship Body Language, Introduction
- b) Opening the discussion Graining confidence.
- c) Gathering information Re alignment
- d) Understanding the patient's perspective Physical / Emotional / Social Patient perspective
- e) Sharing information medical advice
- f) Reaching agreement on problems and plans Discussion treatment options.
- g) Providing closure Future course / Follow up

### 4) INTEGRATION:

The student shall be able to integrate clinical skills with other disciplines and bring about co-ordination of family welfare programs for the national goal of population control and reduction in Maternal and Perinatal. Mortality and Morbidity.

### 5) AETCOM

• The student should be able to communicate and counsel the patients and their families about the treatment and prognosis of various medical conditions.

- Student should be able to interpret and communicate the results of various investigations in medical practice.
- The student should be able to obtain informed consent.

## 6) COMPETENCIES-

The student must demonstrate ability to do the following in relation to Pregnant Woman

- 1. Demonstrate understanding of physiological changes in pregnancy labour and Puerperium
- 2. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of normal and abnormal pregnancy lanour and Puerperium their investigation and management,
- 3. Competently interview and examine a Pregnant woman and her fetus make a clinical diagnosis,
- 4. Appropriately order and interpret laboratory tests,
- 5. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,
- 6. Understand of Concepts and Goals of Antenatal care Including preconception care, Prevention of Maternal and Perinatal. Mortality and Morbidity.
- 7. Communicate effectively, educate and counsel the Pregnant woman and her family (Including Breaking bad News )
- 8. Manage common Obstetrics emergencies and refer when required,
- 9. Independently perform common Obstetrics procedures (Conduct of normal Delivery) safely and understand patient safety

### 7) Course Contents

### Table-1

### **TEACHING METHODS & HOURS**

	Morning Theory lasses	SGT Small Group Teaching/ Practical Tutorials	SDL	AETCOM	Total	Bedside Clinics
2 <sup>nd</sup> Prof	25 Hours	-	-	-	25. Hours	4 Week
3 <sup>rd</sup> Prof Part- I	25. Hours	35 Hours	05 Hours	-	65.Hours	4 Week
3 <sup>rd</sup> Prof Part - II	70. Hours	125. Hours	15. Hours	10 hours	210 Hours	12 Week
Total	120 Hours	160 Horus	20 Hours		300 Hours	20 Week

### Table-2

### Teaching Hours of OBG, Clinical Posting: 20 weeks.

Term	II MBBS	III MBBS Part I	III MBBS Part II
Weeks	4	4	8 + 4
Total	20 weeks		

• In four of the eight weeks of electives, regular clinical posting shall be accommodated, Clinical posting may be adjusted within the time framework.

### Learner doctor of clinical posting:

# Table-3

Year of	Focus of Learner- Doctor Programme
Curriculum	
Year 2	History taking, physical examination, assessment of change in clinical
	status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and
	continuity of care
Year 4	All of the above and decision making, management and outcomes

- Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case-based learning.
- Didactic lectures not to exceed one-third of the total teaching time.
- The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible.
- Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories. Use of skill lab to train undergraduates.
- Newer T-L method like Learner-doctor method (Clinical clerkship) should be implemented, from 1st clinical postings itself. The goal of this type of T-L activity is to provide learners with experience in longitudinal patient care, being part of the health care team, and participate in hands-on care of patients in outpatient and inpatient setting. During the 1st clinical postings, the students are oriented to the working of the department. During the subsequent clinical postings the students are allotted patients, whom they follow-up through their stay in the hospital, participating in that patient's care including case work-up, following-up on investigations, presenting patient findings on rounds, observing procedures, if any, till patient is discharged.

# 7. COURSE CONTENT

1.Obstetric- Broader perspective - Anatomy ,physiology and fundamentals of	12 hrs.
reproduction and fetal and placental development.	
OG1.1,1.2,1.3-Vital statistics in obstetrics.	
OG2.1-Anatomy of female reproductive tracts.	
OG 3.1 -Physiology of conception.	
OG 6.1- Diagnosis of pregnancy	
OG 7.1 - Physiological changes in pregnancy.	
OG 4.1- Development of fetus and placenta.	
OG 5.2,8.7 High risk factors and immunization in pregnancy.	
2.Pre-conceptional Counselling	7 Hrs
3.Antenatal , intrapartum and postpartu m physiology and applied aspects	31 Hrs.
including care of newborn and family planning	
OG 8.1-Antenatal care	
OG 13.1 – Physiology of labour	
OG 14.1, 14.2 Maternal pelvis and fetal position	
OG 13.1,13.5 Mechanism of normal labour	
OG 18.1- Care of Newborn	
OG 17.1 - lactation	
OG 19.1,21.1,21.2 Family planning and Contraception	
4. Complications in early pregnancy	16 Hrs
OG 9.1- Abortions	
OG 20.1 MTP Act and procedures	
OG 9.4,34.3 Gestational trophoblastic neoplasia	
OG 9.3 Ectopic pregnancy	
OG 9.5 Hyperemesis gravidarum	
5.Medical disorders in pregnancy	16 Hrs
OG12.2 Anaemia in pregnancy	
OG12.4 heart diseases in pregnancy	
OG12.1.2 Thyroid disorders in pregnancy	
OG12.6 Liver disorders in pregnancy	
OG12.5 Renal disorders in pregnancy	

OG12.1 Hypertensive disorders in pregnancy	
OG12.3 Diabetes in pregnancy	
OG12.7 HIV in pregnancy	
6. Obstetric Hemorrhage	16 Hrs
OG 10.1 Antepartum Haemorrhage	
OG 35.16 Post partum Haemorrhage	
OG 14.3- Rupture uterus	
7. Obstetric complications in antenatal period	9 Hrs
OG 16.3 FGR	
OG 12.8 Rh isoimmunisation	
OG 15.1 Vaginal birth after caesarean section	
OG11.1 Multiple pregnancy	
8.Intrapartum Obstetric complications	30 Hrs
OG13.2,14.4 Abnormal labour	
OG 1.2.1 Occipito-posterior	
OG 14.2.2 Face, brow, transverse lie	
OG 14.2.3 Breech	
OG 15.2.5 CPD	
OG 14.2.4 cord prolapse, compound presentation	
OG 14.2 obstructed labour	
OG 16.1.3 DIC	
OG 16.1.2 Shock in obstetrics	
9.Obstetric complications in third stage of labour	15 Hrs
OG 16.6 Retained placenta	
OG 16.1-Postpartum Hemorrhage	
OG 16.2- Uterine inversion	
10.Normal and abnormal Puerperium	4 Hrs
OG 19.1- Normal Puerperium	
OG 19.1.2- Puerperal sepsis	
OG 17.3 – Abnormal lactation	

11.Operative obstetrics	19 Hrs
OG15.1,OG 15.2- instruments-obstetric forceps, hysterectomy,	
C-section, episiotomy, Cervical encirclage, ventouse, ECV, destructive procedures	
OG 19.1 Tubectomy, miscellaneous	
12.Imaging in obstetrics	9 Hrs
OG 8.8 USG in obstetrics	
OG 20.3 PCPDNT and legal aspects	
13.Drugs in obstetrics	24 Hrs
OG 16.1 Uterotonics	
OG 12.1 Anti Hypertensives, Anti-convulsant	
OG 13.2 Tocolytics	
OG 13.1 Drugs - Induction of labor	
OG 12.8 Miscellaneous drugs	

GYNECOLOGY	Hrs
1.Benign disorders and infections of female genital tract	15 Hrs
OG 33.5,33.6 Benign lesions of vulva and vagina	
OG34.4 Fibroids	
OG26.1 Endometriosis	
OG 26.1 Adenomyosis	
OG 34.2 Benign ovarian mass	
OG 22.1 Physiological vaginal discharge	
OG22.2 Abnormal WDPV	
OG 27.1 Sexually transmitted infections	
OG 27.2 Tuberculosis	
OG 27.4 Pelvic inflammatory disease	
2. Normal and abnormal puberty-	4 Hrs
OG 23.1 Physiology of puberty, abnormal puberty.	
OG 23.2 Delayed puberty	
3. Normal and abnormal uterine bleeding	4 Hrs
OG 24.1 Abnormal uterine bleeding	
OG32.1 Menopause and Hormone Replacement Therapy	
OG32.2 Post menopausal bleeding	
4. Premalignant lesions of female genital tract	3 Hrs
OG 33.2 CIN and Premalignant diseases of cervix	

5.Gynaec oncology	9Hrs
OG33.1 Ca Cervix	
OG 34.1,34.4 Ca endometrium	
OG 34.5- Ca Vulva and vagina	
OG 34.6 Ca Fallopian tubes	
OG 34.2 Ca Ovary	
OG34.4 Malignant ovarian mass	
6.Endocrine disorders in pregnancy	4Hrs
OG25.1 Primary amenorrhea and secondary amenorrhea	
OG23.3 Precocious puberty	
OG 30.1 PCOS	
OG30.2 Hyperandrogenism	
OG 23.1 Hormones in Gynaecology	
7.Subfertility and infertility	1Hrs
OG 28.1 Infertility, Methods of tubal patency, ovulation induction, Assisted reproductive	
techniques	
8.Disorders of pelvic floor and Urogynaecology	4Hrs
OG31.1,34.4 Genital prolapse	
OG31.1.2 Urinary incontinence	
OG 26.2 Genital injuries and fistulae	
9.Family planning and contraception	10Hrs
OG19.1 Natural and barrier methods of contraception, emergency contraceptive	
OG21.1 IUCD, Oral contraceptive pills	
OG21.2 Implants and other hormonal methods, Male and Female sterilization methods	
OG19.1 Tubectomy instruments.	
10.Chronic pelvic pain	1Hrs
OG24.2.2 Dysmenorrhea, Chronic pelvic pain	
11.Imaging in Gynaecology	8 Hrs
OG 8.8,16.3 Ultrasound in Gynaecology	
OG 28.2 Hysterosalphingography and miscellaneous	
12. Operative Gynaecology	8 Hrs
OG 33.4 pap smear, punch biopsy	
OG 15.1,19.1 Dilatation and curettage , miscellaneous	

### 8. Assessment

### INTERNAL ASSESMENT

- Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Log-book of skill- based training shall be also maintained.
- Day to day records and logbook (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.
- AETCOM assessment will include: (a) Written tests comprising of short notes and creative writing experiences, (b) OSCE based clinical scenarios / viva voce.
- The results of internal assessment should be displayed on the notice board within 1-2 weeks of the test. Remedial measures should be offered to students who are either not able to score qualifying marks or have missed on some assessments due to any reason. Learners must have completed the required certifiable competencies for that phase of training and entered in Medicine logbook, completion of logbook is mandatory for appearing for final university examination.

### Theory;

• A minimum of two theory examinations will be conducted in each professional year 2<sup>nd</sup> Professional, 3<sup>rd</sup> Professional part 1 and three exams in 3<sup>rd</sup> Part 2 Professional year including prelims (total 7).

Total marks of 700 (IA + Formative assessment) which will be tabulated to 100.

### Practical And Viva Voce

- Practical / Clinical: Assessment will be done at the end of each clinical postings (2<sup>nd</sup> Professional Year-1, 3<sup>rd</sup> Part-1 Professional Year-1, 3<sup>rd</sup> Part II Professional Year- 2 & Prelims-1 as per University pattern),
- Second end posting test will be OSCE.
- Total marks of 700 (IA + Formative assessment) which will be tabulated to 100.

# ASSESSMENT INTERNAL AND FORMATIVE ASSESSMENT OBSTETRICS & GYNAECOLOGY

# THEORY AND PRACTICAL

Internal Assessment (IA	) University		Theory Max. marks	Marks Obtained	Practical Max. Marks	Marks Obtained
2 <sup>nd</sup> Prof year	IA -1	IA –I	50			
		IA-II	50		100	
<b>3</b> <sup>rd</sup> part <b>I</b> Prof year	IA - 2	IA-III	50			
		IA-IV	50		100	
<b>3</b> <sup>rd</sup> part <b>II</b> Prof year	IA -3	IA-V	100		100	
		IA-VI	100		100	
		IA-VII (Prelims)	200		200	
	Foi	mative Ass	essment (Med	licine & Alli	ed	
Part completion test	Integrated		20			
	SGT		40			
	SDL		20			
Certifiable skills					70	
Other than certifiable skills					05	
AETCOM Skills			10		10	
Participation in SGT			10			
Co-Curricular and other acad activities	demic				05	
Practical record					05	
Log Book					05	
Total Marks			700		700	
Total Reduced to 100 Marks / 100		/ 1	00			
Grand Total (Aggregate of theory & Prac (Min.50%)	tical's)		/ 200			
Eligible –			YES / NO			

# **University Examination**

### **ELIGIBILLITY FOR EXAMINATION**

- The candidate must have undergone satisfactorily approved course of the study in the subject within prescribed duration.
- Should have at least 75 percent of attendance in theory, SDL, SGT, Elective AETCOM and 80 percent in practical separately to become eligible to appear for the examination in the subject.
- Should have at least 40 percent of total marks fixed by internal assessment both in theory and practical individually.
- Should secure 50 percent in aggregate of total marks combined in theory and practical assigned for IA in the subject.

## THEORY PAPER

# Paper – I (Obstetrics ) & Paper - II (Gynaecology )

### Max. Marks -100

### Time 3 hours.

		Questions	Marks	Total Marks
1.	MCQ	20	1	20
2.	Long essay questions (LEQ)	2	10	20
3.	Short essay questions (SEQ)	9	5	45
4.	Short answers questions (SAQ)	5	3	15
		Total		100 Marks.

# PRACTICAL AND VIVA VOCE

### CLINICAL

Clinical examination consists of two long case carrying 80 Marks each

Max Marks -160 Marks

### Viva Voce

Consists of oral questions on all aspects of syllabus and also, interpretations of Xray, USG, HSG,CTG ,Partographs, Prescriptions, specimen's instruments & drugs, etc.

#### Max Marks -40 Marks

Theory Marks			Practical Marks					
Subject	Paper	Paper	Total	Obstetrics	Gynaecology	Viva	Total	Grand Total
	-I	-II	Marks	case	Case	voce		
OBG	100	100	200	80	80	40	200	400

#### PAPER -I

### **OBSTETRICS**

- 1. Obstetrics- Broader perspective- Anatomy ,physiology and fundamentals of reproduction and fetal and placental development.
- 2. Pre-conceptional Counselling
- 3. Antenatal ,intrapartum and postpartum physiology and applied aspects including
- 4. Care of newborn and family planning.
- 5. Complications in early pregnancy
- 6. Medical disorders in pregnancy
- 7. Obstetric Hemorrhage
- 8. Obstetric complications in antenatal period
- 9. Intrapartum Obstetric complications
- 10.Obstetric complications in third stage of labour
- 11.Normal and abnormal puerperium
- 12.Operative obstetrics
- 13.Imaging in obstetrics
- 14. Drugs in obstetrics

### PAPER -II

### GYNECOLOGY

- 1. Anatomy and Physiology of Female Genital Tract (Including Endocrinology of Menstruation)
- 2. Benign disorders and infections of female genital tract
- 3. Normal and abnormal puberty
- 4. Normal and abnormal uterine bleeding
- 5. Premalignant lesions of female genital tract (Including Preventive oncology)
- 6. Gynecological oncology
- 7. Endocrine disorders in pregnancy
- 8. Subfertility and infertility
- 9. Disorders of pelvic floor and Uro-gynecology
- 10. Family planning and contraception
- 11. Chronic pelvic pain
- 12. Imaging in Gynaecology
- 13. Operative Gynaecology

### **RECOMMENDED BOOKS (LATESTEDITIONS):**

# A) RECOMMENDED JOURNALS:

S:NO	Name of the Journal.
1	Obstetrics and Gynecological survey.
2	Obstetrics and Gynecology clinics of North America
3	Clinical Obstetrics and Gynecology.
4	British journal of Obstetrics and Gynecology.
5	American Journal of Obstetrics and Gynecology.
6	Journal of Obstetrics and Gynecology.
7	Federation of Obstetrics and gynecological societies of India.
8	Indian journal of Obstetrics and Gynecology

# **DEPARTMENT OF PEDIATRICS**

#### 1. PREAMBLE

The NMC envisages that the Indian Medical Graduate, should function as the physician of first contact in the community, to provide holistic health care to the evolving needs of the nation and the world. To fulfil this the IMG should be able to perform the following roles: a clinician, a communicator, a lifelong learner, a professional and a team leader.

Competency-based medical education (CBME) is an outcomes-based training model that has become the new standard of medical education internationally. This new curriculum is being implemented across the country and the first batch has been enrolled since the academic year 2019. The regulatory and accrediting body NMC has started the process by training faculty across the country in the key principles of CBME and developing key competencies for each speciality with the input from expert groups under each speciality.

Paediatrics is an interesting branch of medicine dealing with health and medical care of children. It encompasses a broad spectrum of services ranging from preventive health care to the diagnosis and treatment of acute and chronic childhood illnesses. It is an ever-evolving branch requiring compassion, dedication and precision of care. The Paediatrics undergraduate curriculum provide the IMG the requisite knowledge, essential skills and appropriate attitudes to be able to diagnose and treat common paediatric disorders and also to be able to recognize serious conditions and reference appropriately.

The NMC, in the Graduate medical regulations 2019, has provided the list of paediatric competencies required for an IMG and these have been included in this curriculum document. The Specific Learning Objectives (SLO's) to achieve each competency has been listed along with the suggested Teaching-Learning methods and preferred assessment methods.

Following this is a detailed blueprint showing the weightage and the assessment tool for a particular chapter. This blueprint will ensure that there is an alignment between the SLOs'. TL methods and assessment. A question paper layout has also been added to ensure that there is consistency among different

paper setters. Finally, the list of practical skills along with the most appropriate TL and assessment methods has been laid out.

### 2. GOAL

The aim of teaching *the* Indian Medical Graduate in Pediatrics is to impart knowledge and skill that enable him to diagnose and treat common childhood illnesses including neonatal disorders. The Indian Medical Graduate shall acquire competence for clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management; this would include diseases common in tropics (parasitic, bacterial or viral infections, nutritional disorders, including dehydration and electrolyte disturbances) and various system illnesses.

### 3. OBJECTIVES:

### KNOWLEDGE

At the end of the course, the Indian Medical Graduate shall be able to:

- 1. Describe normal growth and development during fetal, neonatal, child and adolescence period.
- 2. Describe the common pediatric disorders and emergencies in terms of
- a. 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.

# **PSYCHOMOTOR SKILL**

At the end of the course, the Indian Medical Graduate 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 laboratory 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 anthropometic measurements, resuscitate newborn infants at birth, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programmes, perform venesection, start and intravenous line and provide nasagastric feeding.
- 4. Would have observed procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap and ascetic tap.
- 5. Provide appropriate guidance and counselling 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 then in an acceptable manner following the code of ethics.

# ATTITUDE, ETHICS AND COMMUNICATION SKILLS

At the end of the course, the Indian Medical Graduate shall be able to:

- 1. Communicate effectively with patients, their families and the public at large.
- 2. Communicate effectively with peers and teachers and demonstrate the ability to work effectively with peers in a team.
- 3. Demonstrate professional attributes of punctuality, accountability and respect for teachers and peers.
- 4. Appreciate the issues of equity and social accountability while undergoing early clinical exposure

### 4. 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.

### 5. Course Contents

# **TEACHING METHODS & HOURS**

Subject	Lecture hours	Small group teaching / tutorials / integrated learning / practical (hours)	Self directed learning (hours)	Total (hours)
Second Professional Year				
Third Professional Year Part First	20	30	5	55
Third Professional Year Part second	20	35	10	65
Total	40	65	15	120

### **Teaching Hours**

### **Clinical Postings**

Subject	Period of			
	II III III MBBS Part II			Total
	MBBS	Weeks		
		part I		
Pediatrics	2 weeks	4 weeks	4 weeks	10 weeks

Year of Curriculum	Focus of learner – doctor programme
Year 1	Introduction to hospital environment. Early clinical exposure.
	Understanding perspectives of illness
Year 2	History taking, Physical examination. Assessment of change in clinical
	status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and
	continuity of care
Year 4	All of the above and decision making, management and outcomes

#### Learner – Doctor programme (clinical clerkship)

- Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case-based learning.
- Didactic lectures not to exceed one-third of the total teaching time.
- The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible.
- Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories. Use of skill lab to train undergraduates.
- Newer T-L method like Learner-doctor method (Clinical clerkship) should be implemented, from 1st clinical postings itself. The goal of this type of T-L activity is to provide learners with experience in longitudinal patient care, being part of the health care team, and participate in hands-on care of patients in outpatient and inpatient setting. During the 1st clinical postings, the students are oriented to the working of the department. During the subsequent clinical postings the students are allotted patients, whom they follow-up through their stay in the hospital, participating in that patient's care including case work-up, following-up on investigations, presenting patient findings on rounds, observing procedures, if any, till patient is discharged.

## 6. PEDIATRICS COURSE CONTENT

P.E 1.1 – P.E 5.10 Normal Growth and Development	15 hrs
1. Growth and Development	
2. Assessment of Growth and Development	
3. Failure to thrive	
4. Short stature	
5. Cerebral Palsy PART-1	
6. Approach to a child with developmental delay	
7. Learning disabilities	
8. Short stature	
9. Child Guidance Clinic	
PE 5.1 -5.9 Common Problems Related to Behaviour	1 hr
1. Behavioral problems	
PE 6.1-6.13Adolescent Health	1hr
1. Adolescent Health	
PE 7.1- 7.9 Breastfeeding	4 hr
1. Breast Feeding	
2. Breastfeeding problems	
PE 8.1-8.3Complementary Feeding	1 hr
1. Complementary feeding	
PE 9.1-9.6 Normal Nutrition, Assessment and Monitoring	2 hrs
1. Nutritional requirements and Assessment of nutritional status	
PE10.1-10.6 Assessment and Monitoring for Common Nutritional	1 hr
Problems	
1. Protein Energy Malnutrition	
PE 11.1- PE11.6 <b>Obesity in children</b>	1 hr
1. Obesity in children	
PE 12.1-PE13.14 Micronutrients	
1. Fat-soluble Vitamins	
2. Micro nutrients	9 hrs
3. Water soluble vitamins	
PE 14.1- PE 14.5 Poisoning	1 hr
1. Poisoning in children	
PE15.1- PE15.7 Fluid and Electrolyte Balance	1 hr
Fluid and electrolytes in Children	

PE16.1-PE19.16 National Health Programs	11 hrs
1. IMNCI	
2. Vaccination	
3. Safe vaccination practices	
PE20.1- PE20.20 Newborn	17 hrs
1. Essential New Born Care	
2. Normal new born care nomenclature & Classification in	
Neonatology LBW	
3. Birth Asphyxia &Birth Injuries	
4. Respiratory Distress in Newborn HDN, Surgical Conditions Wilms	5
Tumor	
5. Thermoregulation in New-born	
6. Neonatal Hypoglycemia	
7. Neonatal Hypocalcemia	
8. Neonatal Seizures	
9. Neonatal Sepsis	
10. Perinatal Infections	
11. Neonatal Hyperbilirubinemia	
PE30.1-30.23 Central Nervous System	10 hrs
1. Meningitis in children	
2. Hydrocephalus children	
3. Microcephaly in children	
4. Infantile hemiplegia	
5. Febrile seizures in children	
6. Epilepsy in children	
7. Acute Flaccid Paralysis Poliomyelitis in children	4.1.
PE31.1-31.12 Allergy	1 nr
Atopic dermatuls Urticaria Angloedema DERMAI	1 hr
1 Chromosomal Abnormalities	± 111
PE33 1-33 11 Endocrinology	2 brc
1 Hypothyroidism	21115
2 Diabetes Mallitus in children	
PE34.1-34.20 Vaccine Preventable Diseases	4 hrs
1. TB in children & Adolescents	
2. FeveriIn children	
3. Vector borne Diseases Rickettsial diseases	
4. Parasitic Infections	

### 7. SCHEME OF EXAMINATION OF PEDIATRICS

#### **INTERNAL ASSESSMENT**

Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Logs of skill- based training shall be also maintained.

There shall be no less than three internal assessment examinations in Ophthalmology. An end of posting clinical assessment shall be conducted for each of the Ophthalmology clinical posting.

Day to day records and logbook (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.

The results of internal assessment should be displayed on the notice board within 1-2 weeks of the test. Remedial measures should be offered to students who are either not able to score qualifying marks or have missed on some assessments due to any reason. Learners must have completed the required certifiable competencies for that phase of training and pedaiyrics logbook entry completed to be eligible for appearing at the final university examination.

#### **THEORY:**

A minimum of two theory examinations will be conducted in each professional year , 3<sup>rd</sup> part 1 and three exams in III/II including prelims (total 5).

Total marks of 500 which will be tabulated to 100.

### PRACTICAL AND VIVA VOCE

A minimum of two practical examinations will be conducted in each professional year 3<sup>rd</sup> part 1 and three exams in III/II including prelims (total 5).

Total marks of 500 which will be tabulated to 100.

AETCOM assessment will include: (a) Written tests comprising of short notes and creative writing experiences, (b) OSCE based clinical scenarios / viva voce.

#### Assessment

### Internal and formative assessment

Internal Assessment (IA)		Theory	Marks	Practical	Marks	
			Max.	Obtained	Max.	Obtained
			marks		Marks	
3 <sup>rd</sup> part I Prof	IA-I	IA-IA*	50		50	
year		IA-IB*	50		50	
3 <sup>rd</sup> part II Prof	IA-II	IA-IIA**	100		100	
year		IA-IIB**	100		100	
	IA-III	IA-III(Prelims)	100		100	
		Forn	native Asses	sment	1	
Part completi	on	Integrated	20			
test		SGT	40			
		SDL	20			
Certifiable sk	ills				70	
Other than ce	ertifiat	ole skills			05	
AETCOM Skills		10		10		
Participation in SGT		10				
Co-Curricular and other academic				05		
activities						
Practical reco	ord				05	
Log Book				05		
Total Marks	;		500		500	
Total Reduced to 100 Marks			4			
Grand Total		/200		1		
(Aggregate of theory & Practical's)						
(Min.50%)						
Eligible –			YES	/ NO		

\*Computed together as 1<sup>st</sup> Internal Assessment(IA-I)

\*\*Computed together as 2<sup>nd</sup> Internal Assessment(IA-II)

Prelims will be considered as 3<sup>rd</sup> Internal Assessment (IA-III)

Note: Please refer to Final Internal Assessment Score Tabulation sheet in the Preamble page no. 22 for deriving IA - I, IA - II & IA - III Scores.

# **University Examination**

### **ELIGIBILLITY FOR EXAMINATION**

- The candidate must have undergone satisfactorily approved course of the study in the subject within prescribed duration.
- Candidate should have at least 75 percent of attendance in theory and 80 percent in practical separately to become eligible to appear for the examination in the subject.
- Candidate should have at least 40 percent of total marks fixed by internal assessment both in theory and practical individually.
- Candidate should secure 50 percent in aggregate of total marks combined in theory and practical assigned for IA in the subject.

## THEORY PAPER AND PRACTICAL/ CLINICAL EXAMINATION

Marks allotted:

Paediatrics	Theory	Practical examination	
Total marks 100 marks		100 marks	
	Long essay 2X10= 20	Two cases	
		x40marks=80marks	
	Short essay 9x5=45 marks	Viva voce 4 x 5=20marks	
	Short answer question 5x3=15marks		
	MCQs 20x1=20marks		

• A minimum of 80% of the marks should be from the must know (core) component of the curriculum. A maximum of 20% can be from the desirable to know component. All main essay questions to be from the must know component of the curriculum.

### Viva Voce

Consists of oral questions on all aspects of syllabus and also, interpretations of X-ray, Nutrition, Instruments & Drugs allotted 5marks for each.

### TOTAL MARKS IN PEDIATRICS

### THEORY AND PRACTICAL

Subject	Theory	Practical	VIVA	Total	Grand
	Paper	Examination			Total
Pediatrics	100	80	20	100	200

# **Recommended Books (Latest editions)**

SI. No.	Name of the Book	Author	Publisher
1	Ghai Essential Pediatrics 10 <sup>th</sup> Edition	O. P. Ghai, Piyush Gupta, V K Paul	CBS Publisher and Distributors
2	Nelson's Textbook of Paediatrics, 21 <sup>st</sup> Edition	Behrman, Kleigman, Jenson	Elsevier
3	IAP Text book of Paediatrics 7 <sup>th</sup> Edition	A Parathsarthy	Jaypee publication
4	Care of the Newborn 9 <sup>th</sup> Edition	Singh M.	Sagar Publication
5	Purple Book IAP Guide book of Immunization 2022 4 <sup>th</sup> edition	M Indra Shekhar Rao Srinivas G Kasi	Jaypee Brothers

6	Pediatrics Clinical methods	Singh M.	Sagar Publication
7	Hutchison clinical methods	Michael Swash	Saunders
8	Principles of Pediatric and Neonatal Emergencies	A Parathsarthy, H P S Sachadev	Jaypee publication

# **RECOMMENDED BOOKS ESSENTIAL**

# REFERENCES

SI. No.	Name of the Book	Author	Publisher
1	Rudolph's Pediatrics	Colin D Rudolph, Abraham Rudolph	Mc Graw Hill
2	Forfar and Arneil's Textbook of Pediatrics	Neil Mc Intosh, Roselind Smyth, Peter Helms	Churchill Livingstone
3	Oski's Pediatrics: Principles and Practice	Frank A. Oski, Julia A. McMillan, Catherine D. DeAngelis, Joseph B. Warshaw	Wolter Kluwer Company
4	Avery's Disease of the Newborn	Taeush, Ballard, Gleason	Elsevier
5	Roberton's Text book of Neonatology	Janet M. Rennie	Elsevier
6	Nada's Pediatric Cardiology	James E Lock, Donald C Fielar, F Keane	Elsevier
7	Perloff's Approach to congenital Heart Disease	Joseph K Perloff, John S Child,	Harcourt Brace & Company , W B Saunders Co.
8	Harriet Lane pediatric clinical manual	Jason Robertson, Nicole Shilkofski	Elsevier
9	Blood diseases of Infancy and Childhood	Dennis R Miller's, Robert L B, Linda Patrica Miller	Saunders/ Elsevier
10	Clinical Hematology in Medical Practice	D C DeGruchy's, F Firkin	Churchill Livingstone
11	Pediatric Nephrology	Holliday, M.A.; Barrett, Avner, E.D.	Williams and Wilkins
12	Caffey's Pediatric X-ray diagnosis	Jerald P. Kuhn, Thomas L. Slovis, Jack O Haller	Mosby
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13	Protein Energy Malnutrition	Alleyne, G A O	Edward Arnold
14	Tuberculosis in Children	Miller F J W	Churchill Livingstone
15	Essentials of Tuberculosis in Children	Vimlesh Seth, S K Kabra	Jaypee Brothers
16	Swenson's Pediatric Surgery	Orvar Swenson	Appleton-Century Crofts (Education Division)
17	Text book of Pediatric Infectious diseases	Ralph D Feigin, James D Cherry, Gail J Dammlor, Sheldon L Kaplan,	Saunders
18	Fenichel's Pediatric Neurology	Fenichel G M	Saunders / Elsevier
19	Kendig's Respiratory Diseases in Pediatrics	Victor Chernic, Thomas Boat, Robert Wilmott, Andrew Bush	Saunders
20	Liver Disorders in Childhood	Alex P Mowat	Butterworth and Co
21	Roger's Pediatric Critical Care	Mark C Roger, Mark A Helfaer	William & Wilkins
22	Smith's Recognisable patterns of Human Malformations	Kenneth Lyons Jones	Saunders / Elsevier
23	Swaiman's textbook of pediatric neurology	Kenneth F Swaiman, Stephen Ashwal	Mosby
24	Practical pediatric nutrition	Elizebeth M E	Poskitt
25	Manual of Neonatal Care	John P Cloherty,	Lippincot
		Eric C Eichenwald,	Williams and Wilkins
		Ann R Stark	
26	Illingworth Normal child	Illingworth R. S.	Churchill Livingstone
27	Illingworth Development of the child and infant.	Illingworth R. S.	Churchill Livingstone

# ANNEXURES

# Internship

#### **DURATION and PERIOD OF CRMI**

#### 1. Total Duration

Every candidate shall be required to undergo a compulsory rotating medical internship (CRMI) for a minimum period of twelve months, to the satisfaction of the college authorities and the University concerned after passing the final Bachelor of Medicine and Bachelor of Surgery (MBBS) examination/ National Exit Exam for MBBS (Next), so as to be eligible for the award of the MBBS degree by the respective Universities.

#### 2. Period for Completion

- (a) The Internship shall be completed within two years of passing the final MBBS or Foreign Medical Graduate Examination (FMGE) or NExT Step-1 examination, whenever in force.
- (b) The minimum duration of compulsory rotating medical internship may be extended appropriately by a reasonable period on recommendation by the College or University for reasons including but not limited to:
  - (i) insufficient period of attendance; or
  - (ii) any exigency such as disasters or unforeseen circumstances in the country as notified by the Government of India or any competent authority duly authorized to do so.
- (c) The duration of internship may be curtailed or temporarily suspended or even withdrawn or cancelled at any time by the institution or University according to the prevailing rules or regulations of the relevant authority, provided—
  - (i) the registrant, due to any reason whatsoever, desires not to pursue CRMI; or
  - (ii) the registrant is not found to have fulfilled eligibility requirements; or

- (iii) there are proven acts of indiscipline; or
- (iv) there are proven acts of professional misdemeanor or misconduct; or
- (v) any other acts or actions including those violating law of the land.
- (d) An intern shall be allowed to avail the following leaves;-

## A. Normal Leave:

- (i) Interns shall be permitted a maximum of fifteen days leave with prior permission, during the entire period of internship.
- (ii) The entire period of fifteen days cannot be availed during any of the one week or two weeks postings applicable to a single department or specialty

## B. Maternity Leave:

- (i) Lady Interns may be permitted Maternity Leave according to prevailing rules and regulations of the Central Government or State Government, as may be applicable
- **C. Paternity Leave:** Male interns may be permitted paternity leave for two weeks either in continuation or in intervals of one week each within one year of internship.

#### D. Medical Leave:

- (i) Medical Leave shall be included within the fifteen days of normal leave.
- (ii) Any medical leave beyond this period shall be recommended only by a duly constituted Medical Board.
- E. The internship shall be extended if the leave of absence of any kind exceeds beyond this period:
  - (i) The period of extension shall be equivalent to the period beyond permissible fifteen days of leave.
  - (ii) The internship shall be repeated only in the department or specialty wherein the above extension is necessary.

#### SCHEDULE- II

(See Regulation 4)

#### **ELIGIBILITY CRITERIA FOR COMPLETION OF CRMI**

The following requirements need to be fulfilled to be eligible for CRMI.

#### **1.** Indian Medical Graduates

- (a) The applicant should have successfully completed the MBBS course of any University from a college or institution approved and recognised by the Commission and listed by the Undergraduate Medical Education Board under the provisions of section 35 of the Act.
- (b) The qualifying examination for Indian Medical Graduates shall be in accordance with the applicable rules and regulations of the Commission at the time of commencement of internship;
  - (i) The Final MBBS Examination of various Universities or institutions of India;
  - (ii) The National Exit Test (NExT) Step-1 held under sub-section (1) of section 15 of the Act whenever this examination becomes operational;
  - (iii) Any other requirement as may be regulated or notified by the Central Government or, as the case may be, the Commission.
- (c) All Indian Medical Graduates shall complete their entire period of compulsory rotating internship training (CRMI) in the institution where they have pursued and completed their Bachelor of Medicine and Bachelor of Surgery (MBBS);
  - (i) One-year approved service in the Armed Forces Medical Services, after passing the final MBBS examination shall be considered as equivalent to the pre- registration training detailed above; and such training shall, as far as possible, be at the Base or General Hospital. The training in Community Medicine should fulfill the norms of the NMC as proposed above. However NExT step 2 will be mandatory for these candidates also.

## 2. Foreign Medical Graduates

- (a) All Foreign Medical Graduates, as regulated by the National Medical Commission (Foreign Medical Graduate Licentiate) Regulations, 2021, are required to undergo internship at par with Indian Medical Graduates if they desire to seek Permanent Registration to practice Medicine in India.
  - (i) All Foreign Medical Graduates, unless otherwise notified shall be required to undergo CRMI at par with Indian Medical Graduates after the National Exit Test Step-1 after NExT becomes operational.
- (b) Indian citizens (including overseas Indian citizens) who are Foreign Medical Graduates who do not fall under the purview of the National Medical Commission (Foreign Medical Graduate Licentiate) Regulations, 2021shall be regulated by the provisions of sub-section (3) of section 13 of the Indian Medical Council Act, 1956 (102 of 1956) in accordance with the Advisory no MCI-203(1)(Gen)/2020- Regn./118239, dated the 2 nd September, 2020 and shall be required to complete CRMI in India if they have not undergone such practical training after obtaining such qualification as may be required by the rules and regulations in force in the country granting such qualification or has not undergone any practical training in that country.
- (c) Foreign Medical Graduates who require to complete a period of Internship shall do so only in medical colleges or institutions approved for providing CRMI to Indian Medical Graduates;
  - (i) Foreign Medical Graduates may be posted first in colleges which have been newly opened and have yet to be recognized;
  - (ii) May be posted to different medical colleges or institutions through a counseling or seat allocation process based on the merit;
  - (iii) Medical colleges or institutions may allow up to 7.5 per cent of their permitted quota of interns to accommodate internship by Foreign Medical Graduates.
- (d) The college or institution and its affiliated hospitals and Community Health Centres shall be recognised by the Commission for conducting the CRMI programme