SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
TIRUPATI – 517 507

MBBS COURSE

Agenda of
2nd BOARD OF STUDIES MEETING
for 1st MBBS STUDENTS

As per MCI Regulations on Graduate Medical Education as amended up to 2019
(Applicable for students admitted to First MBBS from Academic Year 2019-20 Onwards)

SVIMS UNIVERSITY
(A University established by an act of A.P State Legislature)
TIRUPATI

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES,
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
Tirupati

MBBS COURSE

2nd Board of Studies Meeting held on **29.06.2020**
for 1st MBBS Students/Phase I

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SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN TIRUPATI

MBBS COURSE

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   Dean & Sr. Professor
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2. Dr. M.Sharan B Singh - Member Secretary
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6. Dr. T.JayachandraPillai, - External expert
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7. Dr.MutyalapatiVenkataramulu - External expert
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   Dept. of Biochemistry
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9. Dr. K.Madhavi - External expert
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S.V.Medical College, Tirupati

10. Dr.TirumalasettyRangaRao - External expert
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13. Dr.K. N. Maruthy - External expert
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Subject experts for Community Medicine:

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Professor & HOD
Dept of communitymedicine
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16. Dr.NagoorKhaderValli, - External expert
Professor & HOD i/c
Dept. of Community Medicine
Apollo Institute of Medical Sciences & Research, Chittoor

NEW REGULATIONS FOR MBBS DEGREE COURSE

SECTION I

Introduction to CBME based curriculum

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate is able to recognize "health for all" as a national goal and should be able to fulfill his/her societal obligations. The revised curriculum has attempted to enunciate the competencies the student must be imparted and should have learnt, with clearly defined teaching- learning strategies and effective methods of assessment. Communicating effectively and sympathetically with patients and their relatives has been visualized as a core area of the revised curriculum. These and other goals identified in the curriculum are to be implemented in all medical colleges under the ambit of Medical Council of India from August 2019 and to smoothen this process Guidelines have been prepared for its effective implementation. In response to the need for a seamless introduction of the curriculum into the Undergraduate system, all medical colleges need to upgrade the teaching-learning skills of their faculty. Earlier experience with implementation of curricular changes suggests that a carefully managed, sustainable approach is necessary to ensure that every college has access to the new skills and knowledge enunciated in the new curriculum. Faculty training and development thus assumes a key role in the effective implementation and sustenance of the envisaged curricular reforms.

Curriculum Committees along with Medical Education Units/ Departments of Medical Colleges would help the colleges to implement the new UG curriculum including the AETCOM (Attitude, Ethics & Communication) program. Each college should develop the framework for the Foundation Course. The Foundation course which will be of 1-month duration after admission, aims to orient the students to national health scenarios, medical ethics, health economics, learning skills & communication, Basic Life Support, computer learning, sociology & demographics, biohazard safety, environmental issues and community orientation. Foundation course may also include 1) Orientation program 2) language and computer skills 3) communication skills and 4) time management skills and 5) Professional development program highlighting ethical and humanities issues. Each College should select elements of Foundation course as per local needs and develop faculty expertise from initial years. However, experts and other teachers may be invited as per need. It is emphasized that interactive case scenarios, movies, videos, and small group discussions may be used for each concept along with the principles of reflective learning.

Four of the many new key areas recommended in the Vision 2015, were identified for implementation across the entire duration of the course at Phase I. The areas identified were such that they would be helpful to initiate the process of curricular reforms from first year of the undergraduate course. These areas are Foundation course, Early Clinical Exposure, Integrated teaching & Learning & Skill development & training.

a. **Foundation Course:** This is a one month to orient medical learners to MBBS program and provide them with requisite knowledge, communication (including electronic), technical and language skills.

b. **Early clinical exposure:** The clinical training would start in the first year, focusing on communication, basic clinical skills and professionalism. There would be sufficient clinical exposure at the primary care level and this would be integrated with the learning of basic and laboratory sciences. Introduction of case scenarios for classroom discussion/case-based learning would be emphasized. It will be done as a coordinated effort by the pre-clinical, para-clinical and clinical faculty.

c. **Integrated teaching and learning:** The innovative new curriculum have been structured to facilitate horizontal and vertical integration between and among disciplines, bridge the gaps between theory & practice, between hospital-based medicine and community medicine. Basic and laboratory sciences (integrated with their clinical relevance) would be maximum in the first year and will progressively decrease in the second and third year of the training when clinical exposure and learning would be dominant.

d. **Skill development and learning** (throughout curriculum): A mandatory & desirable comprehensive list of skills has been planned and would be recommended for the Indian Medical Graduate. Certification of skills would be necessary before licensure.

e. **Electives**: The aim of adding electives is to allow flexible learning options in the curriculum and may offer a variety of options including clinical electives, laboratory postings or community exposure in areas that students are not normally exposed as a part of regular curriculum. This will also provide opportunity for students to do a project, enhance self-directed learning, critical thinking and research abilities. Examples: Bio-Informatics, Tissue Culture, Tissue Engineering/Processing, Computer and Computer applications, Immunology, Genetics, Human Nutrition, Sports Medicine, Laboratory Sciences, Research Methodology, Ethics, Accident and Emergencies (A&E), Community Projects, HIV Medicine, Pharmacokinetics/ Pharmacodynamics/ Pharmacoeconomics, Assisted Reproductive Technology, Ethics & Medical Education.

PREAMBLE

The undergraduate medical curriculum of the medical council of India is created to ensure that the medical doctor who emerges from the MBBS training program is capable of assisting the nation to achieve its goal of health for all. In addition, it aspires to ensure that the "graduate" meets or exceeds global bench-mark in knowledge, attitude, skills and communication. This intent is at the core of the Graduate Medical Regulations, 2019.

The Graduate Medical Regulations, 2019 represents the first major revision to the medical curriculum since 1997 and hence incorporates changes in science and thought over two decades. A significant advance is the development of global competencies and subject-wise outcomes that define the roles of the "Indian Medical Graduate". Learning and assessment strategies have been outlined that will allow the learner to achieve these competencies/outcomes. Effective appropriate and empathetic communication, skill acquisition, student-doctor method of learning, aligned and integrated learning and assessment are features that have been given additional emphasis in the revised curriculum.

The revised curriculum is to be implemented by all medical colleges under the ambit of Medical Council of India from August 2019. The roll out will be progressive over the duration of the MBBS course.

This document represents a compilation of the resource material that was used in the Curricular Implementation Support Program (CISP) and has attempted to provide a stepwise and comprehensive approach to implement the curriculum. It details the philosophy and the steps required in a simple and richly illustrated manner. Teaching slide decks, faculty guides and online resource material supplement this document. The document is to be used in conjunction with the Competency document, AETCOM module and the GMR document.

This draft syllabus has been created from the list of competencies mentioned in the Competency Based Curriculum (CBC) developed by the Medical Council of India for the First MBBS Batch of 2019-20.

The content to be covered under each topic has been mentioned as bulleted points. For each topic, competency numbers have been mentioned as per the competency list mentioned above. The content that is related to non-core competencies (these competencies need not be assessed in the summative examination) have been marked by an asterisk (*).

Guidelines have been suggested for the various teaching and learning (TL) methods along with the time allotted for them in the curriculum. Relevant information has also been provided about the recent additions in the CBC, namely integration, early clinical exposure (ECE), self-directed learning (SDL), the AETCOM (attitude ethics and communication skills) modules and electives. Regardless of the TL methods that are used, it is expected that they follow adult learning principles. The regulations related to the internal examination and university examination have been mentioned along with detailed suggestions for the conduct of the theory, practical and viva-voceexaminations. The document ends with a list of learning resources that both the students and teachers can utilize.

INTEGRATION

Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application. It is recommended that the principles of integration be applied to such an extent that the curriculum retains the strengths of subject based education and assessment, while also providing experiences that will allow learners to integrate concepts. Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). As far as possible, it is desirable that teaching/learning occurs in each phase through study of organ systems or disease blocks in order to align the learning process. Clinical cases must be used to integrate and link learning across disciplines.

Alignment implies the teaching of subject material that occurs under a particular organ system / disease concept from the same phase in the same time frame i.e., temporally. It is recommended that alignment be the major method to be followed, allowing similar topics in different subjects to be learnt separately but during the same time frame.

Integration implies that concepts in a topic / organ system that are similar, overlapping or redundant are merged into a single teaching session in which subject based demarcations are removed. For the purpose of this document, topics from other phases that are brought into a particular phase for the purpose of reinforcement or introduction will also be considered as integrated topics. A linker is a session that allows the learner to link the concepts presented in an aligned topic. In a small proportion (not to exceed 20% of the total curriculum) an attempt can be made to share topics or correlate topics by using an integration or linker session. The integration session most preferred will be a case-based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed.

Care must be taken to ensure that achievement of phase-based objectives is given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary. As much as possible, the necessary correlates from other phases must also be introduced while discussing a topic in a given subject. Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year. Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the learner has internalized and integrated the concept and its application.

In summary:

Horizontal integration can be facilitated by the following methods.

- Alignment of timetables of the three first year subjects wherever possible
- Consciously connecting what is learned in one subject with the other subjects during teaching and learning activities
- Joint sessions by all the three departments which may be in the form of lectures, case-based learning or seminars

Vertical integration can be facilitated by the following methods

- Discussing relevant clinical case scenarios during teaching and learning sessions
- Guest lectures by clinicians or para-clinical faculty
- Hospital visits to see relevant patient presentations, radiological imaging and operative procedures.

EARLY CLINICAL EXPOSURE

Objectives: The objectives of early clinical exposure of the first-year medical learners are toenable the learner to:

a. Recognize the relevance of basic sciences in diagnosis, patient care and treatment
b. Provide a context that will enhance basic science learning
c. Relate to experience of patients as a motivation to learn
d. Recognize attitude, ethics and professionalism as integral to the doctor-patient relationship
e. Understand the socio-cultural context of disease through the study of humanities

Elements

a. Basic science correlation: i.e. apply and correlate principles of basic sciences as they relate to the care of the patient (this will be part of integrated modules).
b. Clinical skills: to include basic skills in interviewing patients, doctor-patient communication, ethics and professionalism, critical thinking and analysis and self-learning (this training will be imparted in the time allotted for early clinical exposure).
c. Humanities: To introduce learners to a broader understanding of the socio-economic framework and cultural context within which health is delivered through the study of humanities and social sciences.

Planning of activities & its distribution:

ECE has to be done in practically each of the sessions of basic sciences, preferably for first 10-15 minutes as we do not want it to happen in isolation but want it as an integral part of the basic science curriculum. Total allotted hours in first year (as per GMR, 2019) is 90 hours which has to be equally divided among the three preclinical subjects. Therefore, the time available for each subject is 30 hours, which can be further divided as follows:

a. Basic sciences correlation - 18 hours - 3-hour session per month for 6 months which can take place with charts, graphics, videos, reports, field visits etc. in classrooms / hospital labs.
b. Clinical Skills - 12 hours - one 3-hour session per month for four months per department.

   Students accompanied by preclinical faculty in small groups equipped with observation guides are introduced to specified cases being demonstrated by clinicians. Each 3-hour session of clinical skills will have:

i. Introduction & instruction: 30 minutes
ii. Hospital visit: 1 hour 30 minutes
iii. Summary & conclusion: 30 minutes d. Reflection: 30 minutes

c. Humanities - will be merged with AETCOM (no additional time)

Some methods that may be utilized for ECE are as follows:

- Clinical case scenarios during lectures and dissections
- Guest lectures delivered by clinicians
- Videos of clinical presentations and procedures
- Performance of simple clinical procedures on cadavers or simulators
- Hospital / laboratory visits to see carefully selected patients and relevant procedure
- Demonstrations on peers after taking their consent

SELF-DIRECTED LEARNING

Self-Directed Learning (SDL) is defined as the "preparedness of a student to engage in learning activities defined by himself rather than a teacher". The Graduate Medical Education 2019 document brought out by the MCI lists life-long learning as one of the roles of the Indian Medical Graduate (IMG). One of the methods suggested achieving this is SDL. Seven key components of SDL have been described. These include the identification of learning needs, formulation of learning objectives, utilization of appropriate learning resources, employing suitable learning strategies, commitment to a learning contract, evaluating learning outcomes and the teacher as a facilitator. Dedicated time for SDL is provided for each subject in the first phase.

AETCOM MODULE:

The overall goal of undergraduate medical education program as envisaged in the revised Graduate Medical Education Regulations - 2019 is 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. In order to fulfill this goal, the IMG must be able to function appropriately, ethically and effectively in her/his roles as clinician, leader and member of the health care team and system, communicator, lifelong learner and as a professional. In order to effectively fulfill the above-mentioned roles, the IMG must obtain a set of competencies at the time of graduation. In order to ensure that training is in alignment with the goals and competencies, Medical Council of India has proposed new teaching learning approaches including a structured longitudinal programmeon attitude, ethics and communication

Five AETCOM modules will be taught in first phase and following departments will be responsible for implementation and assessment of these modules

- **MODULE 1.1 AND MODULE 1.5 ANATOMY**
- **MODULE 1.2 AND MODULE 1.3 PHYSIOLOGY**
- **MODULE 1.4 BIOCHEMISTRY**

GUIDELINES: Reflection writing to be recorded in practical record/log book in each subject

ELECTIVES

An elective can be defined as a brief course made available to the learner during his/her undergraduate study period, where she/he can choose from the available options depending upon their interest and career preferences. Introduction of electives in undergraduate medical curriculum is an important step for providing flexible choices in student's areas of interest, direct individual experience and this will help in developing self- directed learning skills. The range of electives that can be offered to the students will depend upon the local logistics and resources available for the medical institutions (within or nearby). These can be in a wide range that can include electives from educational, community and research-project related, directly or indirectly with health care, super-specialty clinical electives and specific laboratory electives.

Method:

- Two months are allotted for elective rotations after completion of the exam at end of the third MBBS Part I examination and before commencement of third MBBS Part II.
- It is compulsory for learners to do an elective. The protected time for electives should not be used to make up for missed clinical postings, shortage of attendance or any other purpose.
- The learner shall rotate through two elective blocks of 04 weeks each.
- Block 1 shall be done in a pre-selected preclinical or para-clinical or other basic sciences laboratory OR under a faculty researcher in an ongoing research project. During the electives regular clinical postings shall continue.
- Block 2 shall be done in a clinical department (including specialties, super-specialties, ICUs, blood bank and casualty) from a list of electives developed and available in the institution OR as a supervised learning experience at a rural or urban community clinic.
- Institutions will determine the number and nature of electives beforehand, names of the supervisors, and the number of learners in each elective based on the local logistics, available resources and faculty.
- Each institution will develop its own mechanism for allocation of electives.
- It is preferable that electives are made available to the learners in the beginning of the academic year.
- The learner must submit a learning logbook based on both blocks of the elective.
- 75% attendance in the electives and submission of logbook maintained during elective is mandatory for eligibility to appear in the final MBBS examination.
- Students will be assessed in between and at the end of each elective posting.
- Feedback, comments and /or grades about the student's performance by the faculty mentor can be documented with the help of a checklist where both professional and academic attributes can be included.
- The performance of the students in the electives will also contribute towards internal marks.
- Student's feedback about the elective also needs to be documented in a structured format. This will help in gathering student's perceptions about various aspects of elective posting and help in program evaluation.
- Institutions may use part of this time for strengthening basic skill certification. The list of electives offered by the institution must be displayed for students.
- Each elective should have well defined objectives, expected outcomes, expectations from the students, their assessment mechanism and faculty guide or mentors.

- A faculty mentor should guide the student, monitor their learning activities and assess the students' performance with regular feedback.
- Examples of general electives include bioinformatics, tissue engineering / processing, computer and computer applications, genetics, human nutrition, laboratory sciences, research methodology, ethics and medical education.

SECTION II

REGULATIONS GOVERNING MBBS DEGREE COURSE
[Eligibility for Admission, Duration, Attendance and Scheme of Examination]

1. ELIGIBILITY

As per guidelines of Medical Council of India

2. DURATION OF THE COURSE

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DISTRIBUTION OF SUBJECTS BY PROFESSIONAL PHASE

Phase and Year of MBBS Training	Subjects and new teaching elements	Duration	University examination
First professional MBBS Phase-I	• Foundation course (1month) • Human Anatomy, Physiology& Biochemistry • Introduction of Community Medicine, Humanities • Early Clinical Exposure • Attitude. Ethics and Communication Module (AETCOM)	1+13 months	**First professional MBBS Phase-I Exam**
Second professional MBBS Phase-II	• Pathology, Microbiology, Pharmacology, Forensic Medicine And Toxicology • Introduction to clinical subjects including community Medicine • Clinical postings • AETCOM	12 months	**Second professional MBBS Phase-II Exam**
Third professional MBBS Phase-III part I	• General Medicine ,General Surgery, OBG, Paediatrics, Orthopaedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory Medicine, Radiodiagnosis& Radiotherapy, Anaesthesiology • Clinical Subjects /postings • AETCOM	12 months	**Third professional MBBS Phase-III part I Exam**
Electives	• Electives ,skills and assessment	2 months	
Third professional MBBS Phase-III Part-II	• General Medicine ,Paediatrics, General Surgery, Orthopaedics, Obstetrics and Gynaecology, including Family welfare and allied Specialties • Clinical Postings /subjects • AETCOM	13 months	**Third professional MBBS Phase-III Part-II Exam**

FOUNDATION COURSE

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

1. Orientation course will be completed as single block in the first week and will contain elements outlined in 9.1. ((vide Medical Council of India Notification on Graduate Medical Education (Amendment) Regulations 2019, published in the Gazette of India Part III, Section 4, Extraordinary issued on 4th November 2019**)**

2. Skills modules will contain elements outlined in 9.1.

3. Based on perceived need of learners, one may choose language enhancement (English or local spoken or both) and computer skills. This should be provided longitudinally through the duration of the Foundation Course.

Note:

- **Teaching of Foundation Course will be organized by pre-clinical departments**
- **The Foundation Course will have compulsory 75% attendance. This will be certified by the Dean of the college**

3. ATTENDANCE

Every candidate should have **attendance not less than 75% of the total classes conducted intheory which includes didactic lectures, early clinical exposure and self-directed learning and not less than 80% of the total classes conducted in practical which includes small group teaching, tutorials, integrated learning and practical sessions** in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examination. **75% attendance in Professional Development Programme (AETCOM Module) is required for**

eligibility to appear for final examination in each professional year (vide Medical Council ofIndia Notification on Graduate Medical Education (Amendment) Regulations 2019, published in the Gazette of India Part III, Section 4, Extraordinary issued on 4th November 2019)

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

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

4. TEACHING HOURS

Subjects	Lecture hours	Small group teaching/tutorials/integrated teaching/practical (hours)	Self-directed learning (SDL)	Total (hours)
Human anatomy	220	415	40	675
Physiology	160	310	25	495
Biochemistry	80	150	20	250
Early clinical exposure*	90	-	0	90
Community Medicine	20	27	5	52
Attitude, Ethics & Communication module (AETCOM)**	-	26	8	34
Sports and extracurricular activities	-	-	-	60
Formative assessment and term examinations	-	-	-	80
Total	-	-	-	1736

*Early clinical exposure hours to be divided equally in all three subjects **AETCOM module shall be a longitudinal programme

5.RE-ADMISSION AFTER DISCONTINUATION OF STUDY:

Every student shall attend her classes (theory, practical and clinical) on all working days unless the leave of absence is sanctioned by the principal/dean. If a student absents continuously for a period of 91 days or more, before one year after discontinuation and seeks permission to attend the course, her application shall be addressed to the dean of the college and shall be forwarded to the registrar while permitting the student to rejoin. The vice-chancellor may grant leave of absence applying such conditions as deemed necessary. Candidates who are absent for continuous period of one year or more without permission shall be deemed to have forfeited the admission and her studentship shall stand cancelled without any further notice.

6.MIGRATION / TRANSFER OF CANDIDATES:

To the extent permissible as per the prevailing regulations of the MCI on migration of students from one medical college to another medical college within or outside the state.

7. VACATION:

The vacation for the students shall be 30 days in each academic year which includes 15 days during summer, one week during Sankranthi and one week during Dussehra.

SCHEME OF EXAMINATION

8. INTERNAL ASSESSMENT:

General guidelines

- Regular periodic examinations shall be conducted throughout the course. There shall be **minimum three internal assessment examinations** in each preclinical subject. In addition, there shall be **one Internal Assessment in Community Medicine in Phase IMBBS**.
- The **third internal examination** should be conducted on the lines of the university examination.
- There should be **at least one short question from AETCOM** in each subject.
- Questions on ECE and AETCOM in Internal Assessments must be assessed by the faculty of the respective pre-clinical departments (Anatomy/Physiology/Biochemistry)
- Out of three internal exams conducted, the marks secured in the third internal exam shall be taken into account along with the best among the I & II internal exams. Average of these two internal assessments marks should be calculated and submitted to the university.

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		**Formative assessment**	
Part completion tests	5	Early clinical exposure	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2

Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Example for calculation of internal assessment marks:

Theory :

1st Internal (100)	2nd Internal (100)	3rd Internal (100)	IA Marks (40)
70	60	70	70+70
70/100 x 40 (to convert out of 40)=28/40		70/100 x 40 (to convert out of 40)=28/40	140/200 x 40(to convert out of 40)=28/40

Among the 1st and 2ndinternal assessment marks, best of the two is taken and Pre-final marks is compulsorily taken into account.

28+28/2=28/40 (average of 1st internal assessment marks and 3rd internal assessment marks)

28+8 (Part completion test + attendance) =36/50

36/ 50(72% - minimum 40% required for eligibility in theory)

Practicals: 22/ 30

Viva: 8/10

Practicals + viva: 22+8= 30/40

30+8 (logbook + ECE) = 38/50 (76% - minimum 40% required for eligibility in practicals)

Theory + practical= 36+38 =74/100(74% - minimum 50%, theory + practical, required for eligibility to appear in University exam)

- Learners **must secure not less than 40 % marks in theory and practical separately and not less than 50% marks of the total marks (combined in theory and practical)** assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
- A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial measures by the institution. If he/she successfully completes the remediation measures, he/she is eligible to appear for University Examination. Remedial measures shall be completed before submitting the internal assessment marks online to the university.
- **Internal assessment marks will reflect under separate head in the marks card of the university examination. The internal assessment marks (theory/practical) will not be added to the marks secured (theory/practical) in the university examination for consideration of pass criteria.**
- **The results of IA should be displayed on the notice board within a 1-2 week of the test.**
- Learners must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

9. UNIVERSITY EXAMINATION

Examination schedule

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General guidelines

- University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him/her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

- Nature of questions will include different types such as structured essays (Long Answer Questions - LAQ), SAQ & MCQ's. Marks for each part should be indicated separately.

- The learner **must secure at least 40% marks in each of the two papers in each subject with minimum 50% of marks in aggregate (both papers together) to pass.**

- Practical/clinical examinations will be conducted in the laboratories. The objective will be to assess proficiency and skills to conduct experiments, clinical examination, interpret data and form logical conclusion, wherever applicable.

- Viva/oral examination should assess candidate's skill in analysis and interpretation of common investigative data, X-rays, identification of specimens, ECG, etc. [wherever applicable] and attitudinal, ethical and professional values.

- **There shall be one main university examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the phase I university examination, for students who have failed in the university examination. The student must clear the supplementary examination to enter. Phase II MBBS. If student fails in supplementary exam, then will have to take up the subject is the next university exam.**

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

Phase 1 university examination

- The first Professional examination shall be held at the end of first Professional training (1+12 months), in the subjects of Human Anatomy, Physiology and Biochemistry.

- A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial attendance at any University examination shall be counted as an availed attempt.

Phase I

Table: Examination components, Subjects and Distribution of Marks

	ANATOMY	**PHYSIOLOGY**	**BIOCHEMISTRY**
Theory Paper			
No. of Papers & Maximum Marks for each paper.	**2×100=200**	**2×100=200**	**2×100=200**
Total theory	**200**	**200**	**200**
PRACTICAL			
1. Practical exam	**80**	**80**	**80**
2. Viva-voce	**20**	**20**	**20**
Total practical	**100**	**100**	**100**

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		**Formative assessment**	
Part completion tests	5	Early clinical exposure	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2
Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Table: Type, number of questions and distribution of marks for written paper

TYPES OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
Long essay	**2**	**15**
SAQ	**10**	**5**
MCQ's	**20**	**1**

- No negative marks for MCQ's – in question paper pattern.
- The Time limit for MCQ'S for 20 minutes of the total duration of 3 hours.

10. SUBMISSION OF LABORATORY RECORD

a. At the time of Practical Examination each candidate shall submit to the Examiners his/her laboratory record duly certified by the Head of the Department as a bonafide record of the work done by the candidate. The Lab record will contain the certified skills.

11. ELIGIBILITY FOR EXAMINATION

The following criteria to be met by the students to be eligible for the university exams:

a. Shall have undergone satisfactorily the approved course of study in the subject/subjects for the prescribed duration.

b. Shall have attended not less than 75% of the total classes conducted in theory and not less than 80% of the total classes conducted in practical separately to become eligible to appear for examination in that subject/subjects.

c. Minimum of 40% marks to be obtained **separately** in theory and practical to appear for University exam. At least 50% marks of the total marks **combined** in theory and practical assigned for internal assessment is to be obtained in a particular subject. Out of three internal exams conducted, the marks secured in the third internal exam shall be taken into account along with the best among the I & II internal exams. Average of these two internal assessments marks should be calculated and submitted to the university.

d. Learners must have **completed the required certifiable competencies for** that phase of training and completed **the logbook** appropriate for that phase **of training to be eligible** for appearing at the final university examination of that subject.

12. CRITERIA FOR PASS

For declaration of pass in any subject in the University examination, a candidate shall pass both in Theory and Practical examination components separately as stipulated below:

- The Theory component consists of marks obtained in University Written papers only. For a pass in theory, a candidate must secure at least 40% marks in each of the two papers with minimum 50% of marks in aggregate (both papers together).
- For a pass in practical examination, a candidate shall secure not less than 50% marks in aggregate, i.e., marks obtained in university practical examination and viva voce added together.
- **Internal assessment marks will reflect as a separate head of passing at the university examination.**
- A candidate securing less than 50% marks in **aggregate** in Theory and or Practical examination (Practical + viva) in a subject shall be declared to have failed in that subject and is required to **appear for both** Theory and Practical again in the subsequent examination in that subject.

13. AWARD OF DEGREE :

The university on satisfactory completion of the compulsory internship shall award the degree.

14. DECLARATION OF CLASS

a. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of **grand total marks (university examination)** prescribed will be declared to have passed the examination with distinction.

b. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in First Class.

c. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in Pass Class.

d. A candidate passing a university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by him/her in the examination.

Note: Please note fraction of marks will not be rounded off for clauses (a), (b) and (c)

SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
MODEL QUESTION PAPER

Anatomy Paper –I: Upper limb, Head and Neck, Neuro Anatomy, Concerned Embryology, Histology, General Anatomy & General Histology.

Date: **Time: 3 hours** **Maximum marks:100**

Instructions: 1. Answer all questions
2. Draw neat and labeled diagrams wherever necessary

I. Write Essay on **2X15=30m**

1. Describe the Median nerve under the following headings 1+3+7+4
   (i) Root value (ii) Gross course
   (iii) Branches & its distribution (iv) Applied aspect
2. Describe the Tongue under the following headings 1+2+5+5+2
   (i) Presenting parts (ii) Muscles (iii) Nerve supply
   (iv) Lymphatic drainage (v) Applied aspect

II. Write Short notes on **10X5=50m**

3. Rhomboid fossa
4. Cleft lip (Harelip)
5. Histological features of Thyroid gland
6. Otic ganglion
7. How to respect cadaver
8. Epiphyses
9. Pyriform fossa
10. Structure of passing through foramen magnum
11. Cephalic vein
12. Ansacervicalis

III. Multiple Choice Questions **20X1=20m**

- Only one correct answer to be there
- All of the above should not be incorporated
- None of the above should not be incorporated

SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
MODEL QUESTION PAPER

Paper: Anatomy Paper –II Lower limb, Thorax, Abdomen, Pelvis, Perineum, Concerned Embryology, Histology, Genetics & General Embryology.

Date:23.09.2020 **Time: 3 hours** **Maximum marks: 100**

Instruction: 1. Answer all questions
2. Draw neat and labeled diagrams wherever necessary

I. **Write Essay on** **2X15=30m**

1. Describe the knee joint under the following headings 1+2+5+5+2
(i) Type (ii) Bony components (iii) Ligaments
(iv) Movements & Muscles responsible (v) Applied aspect

2. Describe the Uterus under the following headings 3+2+5+3+2
(i) Situation and position (ii) Parts and relations (iii) Supports
(iv) Blood supply (v) Applied aspect

II. Write Short notes on **10X5=50m**

3. Interior of right atrium
4. Intraembryonic mesoderm
5. Microscopic structure of pancreas
6. Down's syndrome
7. First rib
8. Major openings of Thoraco Abdominal diaphragm
9. Thoracic duct
10. Gluteus maximus
11. Portacaval anastomosis
12. Femoral nerve

III. Multiple Choice Questions **20X1=20m**

- Only one correct answer to be there
- All of the above should not be incorporated
- None of the above should not be incorporate

SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
MODEL QUESTION PAPER

Paper: Physiology Paper –I **Date:** **Time:3hours** **Maximum marks:100**

Syllabus: Cell Physiology, Biophysics, Body fluids ,Blood, CVS, Respiration, Digestion, Excretion, Regulation of body temperature.

I. Answer all of the following: (2X15=30M)

1. What are different types of immunity? Describe acquired immunity in detail. What is auto immunity. (3+8+4)

2. Discuss the mechanism of oxygen transport in blood. What is oxygen debt? Add a note on artificial respiration. (7+4+4)

II.Write short notes on all of the following 10X5=50M

1.Transport across cell membrane
2.Short term regulation of blood pressure
3.Enteric nervous system
4.Factors affecting glomerular filtration
5.Classification of anemias
6.JGA
7.Deglutition reflex
8.Erythroblastosisfoetalis
9.Body fluid compartments
10.Periodic breathing

III. 20 MCQ's 20X1=20

- Only one correct answer to be there
- All of the above should not be incorporated
- None of the above should not be incorporated

SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
MODEL QUESTION PAPER

Paper: Physiology Paper –II **Date:** **Time: 3 Hours** **Maximum marks:100**

Syllabus: Endocrines, Reproduction, Muscle and Nerve, CNS, ANS and Special senses

I. Answer all of the following: (2X15=30M)

1. List the descending pathways. Trace the pathway of pyramidal tract. Describe the functions of pyramidal tract. List the signs and symptoms of pyramidal tract lesion. (2+5+4+4=15M)

2.Mention the normal serum calcium concentration. Explain the hormonal regulation of calcium. Add a note on tetany (2+9+4=15)

II. Write short notes on all of the following (10X5=50M)

1.Organ of Corti
2.PAPEZ Circuit
3.Visual Cycle
4.Dwarfism
5.Adrenal Androgens
6.Properties of synapse
7.Contraceptive methods in female
8.Referred pain
9.Spermatogenesis
10.EC coupling in skeletal muscle

III. 20 MCQ's 20X1=20

- Only one correct answer to be there
- All of the above should not be incorporated
- None of the above should not be incorporated

SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
MODEL QUESTION PAPER

Paper: Biochemistry Paper –I Date: Time: 3 Hours Maximum marks: 100

Draw neat and labeled diagrams wherever necessary

I. Answer all questions 2X15= 30 marks

1. Give an account of the sources, chemistry, functions, RDA and deficiency manifestations of Vitamin A. (2+1+6+2+4)
2. What is the normal blood pH? Mention the various homeostatic mechanisms for regulation of blood pH. Describe in detail the renal mechanisms for regulation of pH. (1+4+10)

II. **Short answer questions 10X5= 50 marks**

3. Describe aerobic glycolysis along with its significance.
4. Factors affecting enzyme activity.
5. Transport mechanisms across cell membrane.
6. Substrate level phosphorylation.
7. Ketogenesis and its significance.
8. Enumerate the professional qualities of a physician.
9. Balanced diet.
10. Normal serum sodium levels and its homeostasis.
11. Collagen structure, types and its function.
12. Calcium homeostasis.

III. **Multiple choice questions 1X20= 20 marks**

- Only one correct answer to be there
- All of the above should not be incorporated
- None of the above should not be incorporated

SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
MODEL QUESTION PAPER

Paper: Biochemistry Paper –II Date: Time:3 Hours Maximum marks:100

Draw neat and labeled diagrams wherever necessary

IV. Answer all questions 2X15= 30 marks

1. Give an account of the metabolism of Phenylalanine. What are the biologically Important compounds obtained from tyrosine? Write a note on phenylketonuria. (5+7+3=15)
2. Describe the process of the DNA replication. Add a note on types of DNA damage. (10+5=15)

V. **Short answer questions 10X5= 50 marks**

1. Assessment of glomerular functions of the kidney
2. Adaptive immunity
3. Detoxification
4. Salvage pathways of nucleic acid metabolism
5. Thyroid function tests
6. Oncogenes
7. Role of insulin in well fed state
8. Transamination
9. Polymerase chain reactions
10. Empathy in patient encounters

VI. **Multiple choice questions 1X20=20 marks**

- Only one correct answer to be there
- All of the above should not be incorporated
- None of the above should not be incorporated

SYLLABUS
Anatomy

Total duration – I year – 743 hrs
Course commences from 1st August, 2019 and ends at September, 2020.

THEORY – 220 hrs.			**SGT/INTEGRATEDLEARNING/TUTORIALS/PRACTICALS- 415 hrs**		**SDL - 40 hrs**
	Region	**Hours**	**Region**	**Hours**	
1.	General Anatomy	12	Integrated teaching	10	
2.	Upper limb	17	Upper limb	56	
3.	Lower limb	17	Lower limb.	52	
4.	Thorax	13	Thorax.	30	
5.	Head and neck	34	Head and neck.	76	
6.	Abdomen pelvis and perineum	28	Abdomen, pelvis & perineum	70	
7.	Brain and spinal cord	17	Brain and spinal cord	30	
8.	General Histology Systemic Histology	11 21	Histology	70	
9.	General Embryology	10	Embryology	06	
10.	Systemic Embryology	30	Genetics	05	
11.	Genetics	10	Radiology	10	
Total		220 hrs	Total	415	

Didactic lectures: **220 hrs**. - General Anatomy, Gross Anatomy, Embryology, Histology, Genetics.

SGT/Integrated learning/Tutorials/Practicals (415 hrs.)

SDL – 40 hrs

ECE – 30 hrs

AETCOM – 11 hrs

Assessment – 27 hrs

Total Anatomy hours – 743 hrs (220+415+40+30+11+27)

GENERAL ANATOMY-12 Hrs

1. Introduction to Anatomy - 1hr
2. Terminology (AN: 1.1) - 1 hr
3. Skeletal system (AN: 2.1-2.4, 26.6) - 2 hrs
4. Arthrology (AN: 2.5, 2.6) - 2 hrs
5. Muscular system (AN:3.1,3.3) - 1 hr
6. Nervous system (AN:7.1-7.8) - 1 hr
7. Cardiovascular system(AN:5.1-5.8) - 2 hr
8. Lymphatic system (AN:6.1-6.3) - 1 hr
9. Integumentary system (AN:4.1-4.5) - 1 hr

GENERAL HISTOLOGY

	THEORY – 11 hrs.	**PRACTICALS 12 x2 = 24 hrs.**
1.	Microscope, common artifacts	Microscope and common artifacts
2.	Epithelial tissue(AN:65.1,65.2)	Simple epithelia
3.	Epithelial tissue(AN:65.1,65.2)	Stratified epithelia, Glandular epithelia
4.	Connective tissue (AN:66.1,66.2)	Connective tissue (AN:66.1,66.2)
5.	Cartilage (AN:71.2)	Cartilage – hyaline, elastic, white fibro cartilage (AN:71.2)
6.	Bone(AN:71.1)	Bone – T.S & L.S(AN:71.1)
7.	Muscular tissue(AN:67.1-67.3)	Muscles- Skeletal, cardiac, smooth(AN:67.1-67.3)
8.	Nervous tissue(AN:68.1-68.3)	Types of neurons, Peripheral nerve(AN:68.1- 68.3)
9.	Blood vessels(AN:69.1-69.3)	Blood vessels (AN:69.1-69.3)
10.	Lymphoid tissue (Lymphnode, tonsil) (AN:70.2)	Lymph Node, Tonsil, Thymus, Spleen (AN:70.2)
11.	Lymphoid tissue (Thymus, spleen) (AN:70.2)	Revision of all slides

SYSTEMIC HISTOLOGY

	THEORY – 21 Hrs.	**PRACTICALS 23 X 2 = 46 Hrs.**
1.	Salivary Glands (AN:70.1)	Salivary Glands (AN:70.1)
2.	GIT - Tongue, Tooth (AN:43.2)	Tongue, Tooth (AN:43.2)
3.	GIT–Oesophagus, (AN:52.1)	GIT–Oesophagus, (AN:52.1)
4.	Stomach (AN:52.1)	Stomach- Fundus, Pylorus(AN:52.1)
5.	GIT–Small Intestine (AN:52.1)	Small Intestine – Duodenum, Jejunum, Ileum (AN:52.1)
6.	GIT – Large Intestine, Appendix(AN:52.1)	Large Intestine, Appendix(AN:52.1)
7.	Liver (AN:52.1)	Liver (AN:52.1)
8.	GIT - Gall Bladder , Pancreas(AN:52.1)	Gall Bladder, Pancreas(AN:52.1)
9.	Respiratory System– Trachea, Lungs(AN:25.1)	Respiratory System -Trachea, Lung(AN:25.1)
10.	Urinary System- Kidney, Ureter, Urinary bladder (AN:52.2)	Urinary System – Kidney, Ureter, Urinary bladder (AN:52.2)
11.	Female Reproductive System – Ovary, Uterine tube (AN:52.2)	Female Reproductive System – Ovary, Uterine tube(AN:52.2)
12.	Female Reproductive System – Uterus, Vagina (AN:52.2)	Female Reproductive System – Uterus, Vagina (AN:52.2)
13.	Female Reproductive System – Placenta, Umbilical cord, Mammary Gland (AN:52.3)	Placenta, Umbilical cord, Mammary Gland(AN:52.3)
14.	Male Reproductive System – Testis, Epididymis (AN:52.2)	Testis, Epididymis(AN:52.2)
15.	Male Reproductive System – Vas Deferens, Prostate (AN:52.2)	Vas Deferens, Prostate (AN:52.2)
16.	Endocrine System - Pituitary, Thyroid Gland (AN:43.2)	Endocrine System - Pituitary, Thyroid Gland (AN:43.2)
17.	Endocrine System - Parathyroid, Supra renal gland (AN:43.2)	Endocrine System - Parathyroid, Supra renal gland (AN:43.2)

18.	Nervous System – Spinal Cord, Cerebrum (AN:64.1)	Spinal Cord, Cerebral Cortex (AN:64.1)
19.	Nervous System- Cerebellum, Sections Of Medulla, Pons, Mid brain (AN:64.1)	Cerebellar Cortex, Medulla, Pons, Mid brain(AN:64.1)
20.	Special Senses - Cornea, Retina (AN:43.2) , Organ of Corti (AN:40.3)	Cornea , Retina (AN:43.2) Organ of Corti (AN:40.3)
21.	Skin and Appendages(AN:72.1)	Skin – Thick, Thin Skin (AN:72.1)
22.		Total Histology Slides Revision
23.		Total Histology Slides Revision

GENETICS THEORY - 10 HOURS

1. Chromosomes (AN:73.1-73.3)
2. Patterns of Inheritance (AN:74.1-74.4)
3. Principles Of Genetics ,Chromosomal Aberrations & Clinical Genetics (AN:75.1-75.5)
4. Prenatal Diagnosis (AN:81.1-81.3)

GENETICS PRACTICALS - 4 hrs

1. Sex-chromatin
2. Pedigree chart
3. Karyotyping

EMBRYOLOGY - 40 hrs.

GENERAL EMBRYOLOGY 10 HOURS

1. Introduction to embryology (AN:76.1,76.2)
2. Growth and Differentiation (AN:76.1, 76.2)
3. Gametogenesis-Spermatogenesis and Oogenesis(AN:77.1-77.3)
4. Fertilization , Cleavage , Implantation (AN:77.4-77.6)
5. Changes In 2nd Week (AN:78.1-78.5)
6. Changes In 3rd Week (AN:79.1-79.6)
7. Differentiation of Germ Layers (AN: 80.1- 80.7)
8. Foldings of Embryo & Development of Limb Buds (AN:13.8, 20.10)
9. Placenta and Foetal Membranes (AN: 80.1- 80.7)
10. Multiple Births & Twinning (AN:80.4)

SYSTEMIC EMBRYOLOGY - 30 HOURS

1. Digestive System - 8 Hrs
   - Branchial Apparatus (AN: 43.4)
   - Development of Face, Nose, Palate, Teeth, Tongue & Associated Anomalies (AN: 43.4, 39.1)
   - Development of GIT & Associated Glands (AN: 52.1)
2. Cardio Vascular System - 8 Hrs
   - Development of Heart & Associated Anomalies (AN: 25.2,25.4)
   - Development of Major Arterial System (AN: 25.5,25.6)
   - Development of Major Venous System (AN: 25.6)
   - Foetal Circulation (AN:25.3)
3. Genito-Urinary System - 8 Hrs
   - Development of Kidney, Ureter, Bladder, Urethra and associated Anomalies(AN:52.7)
   - Male Reproductive System (AN:52.8)
   - Female Reproductive System(AN: 52.8-)
   - External Genitalia (AN: 52.8)
4. Development of Nervous System (AN: 64.1,64.2,64.3) - 2
5. Development of Eye & Ear (AN: 43.4,40.6)-1
6. Development of Endocrine Glands (AN:43.2)-1
7. Development of Skin (AN:72.1)& Its Appendages and Mammary Gland (AN:9.3)-1
8. Development of Respiratory System (AN:25.2) – 1

Regional Anatomy- Upper Limb

	Osteology-6hrs	**Theory-17hrs.**	**Practicals-50 Hrs**
1.	Clavicle (AN:8.1-8.4)	Pectoral Muscles and Clavipectoral Fascia(AN:9.1,10.11)- 1	General Introduction -2
2.	Scapula (AN:8.1,8.2,8.4)	Mammary Gland (AN:9.2,)-1	Introduction to Upper Limb, Skin Incision (AN: 13.1,13.2)-2
3.	Humerus (AN:8.1,8.2, 8.4)	Axilla and Its Contents Includes Axillary Artery (AN:10.1,10.2,10.4,10.7) - 1	Pectoral Region (Mammary Gland) (AN:9.2)- 2
4.	Radius (AN:8.1,8.2, 8.4)	Brachial Plexus (AN:10.3,10.5,10.6) - 1	Clavipectoral Fascia, Pectoral Muscles (AN:9.1,10.11) -2

5.	Ulna (AN:8.1,8.2, 8.4)	Muscles of Arm, Back and Scapula(Includes Deltoid Muscle) (AN:10.8-10.11,11.1) - 1	Axilla and Its Contents (AN:10.1-10.7)- 4
6.	Articulated Hand (AN:8.5,8.6,13.4)	Cubital Fossa (AN:11.5), Anastomosis around Scapula (AN:10.9) and Elbow(AN:11.6) -1	Back Dissection, Muscles of Back (AN:10.8,10.9) -4
7.		Muscles of Forearm(AN:12.1,12.11) -1	Cutaneous Innervation (AN: 13.2) Venous And Lymphatic Drainage of Upper Limb(AN:11.3,13.1)- 2
8.		Flexor (AN:12.3,12.4) and Extensor Retinaculae (AN:12.14),Dorsum of hand(AN:12.15) -1	Shoulder Region(Inter muscular Spaces, Deltoid) (AN:10.13,10.10)- 4
9.		Palm(AN:12.5,12.6,12.9,12.10) -2	Shoulder Joint (AN:10.12) -2
10.		Cutaneous Innervation (AN: 13.2), Venous and Lymphatic Drainage of Upper Limb(AN:11.3,13.1)- 1	Anterior Compartment of Arm (AN:11.1,11.2) -2
11.		Joints of Shoulder Girdle(Includes Shoulder Joint) (AN:10.12,13.4) -1	Cubital Fossa (AN:11.3,11.5,11.6) -2
12.		Elbow Joint and Radioulnar Joints(AN:13.3)- 1	Posterior Compartment of Arm (AN:11.1)- 2
13.		Wrist and 1st Carpometa carpal Joints (AN:12.6,13.3)- 1	Front of Forearm and Hand (AN:11.4,12.1-12.10)- 6
14.		Nerves of Upper Limb(Includes Axillary Nerve, Median ,Ulnar and Radial Nerves) (AN:10.13,11.2,11.4,12.2,12.3,12.7,12.8)-2	Back of Forearm and Hand(AN:12.11-12.15) -4
15.		Arteries of Upper Limb(AN:11.2,12.2,12.7)-1	Joints of Upper Limb (Includes- Elbow, Wrist, Carpo Metacarpal and Inter Carpal, Inter Phalangeal Joints) (AN:13.3-13.5) -6
16.			Radiological Anatomy (AN: 13.5)-2
17			Surface Marking (AN:13.7)-2

Regional Anatomy- Lower Limb

	Osteology-10hrs	Theory-17 Hrs.	Practicals-42 Hrs
1.	Hipbone (AN:14.1-14.4)-2	Front of Thigh (Femoral Triangle) (AN:15.1-15.4,20.3-20.5,20.10)-1	Introduction of Lower Limb and Front of Thigh (AN:15.1,-15.4, 20.3-20.5,20.10,20.7) -6
2.	Femur (AN:14.1-14.4) -2	Adductor Compartment & Adductor Canal (AN:15.1,15.2,15.5)-1	Medial Side of Thigh (AN:15.1,15.2,15.5)-2
3.	Tibia, Fibula (AN:14.1-14.4)-4	Gluteal Region (AN:16.1,16.2,16.3)-1	Gluteal Region (AN:16.1-16.3)-4
4.	Articulated Foot (AN:14.1-14.4)-2	Back of Thigh and Popliteal Fossa (AN: 16.4,16.5,16.6)-1	Popliteal Fossa (AN:16.6)-2
5.		Hip Joint (AN: 17.1,17.2,17.3)-1	Back of Thigh(AN:16.4,16.5)-2
6.		Anterior Compartment of Leg and Dorsum of Foot (AN:18.1-18.3)-1	Hip Joint(AN:17.1-17.3)-2
7.		Posterior Compartment of Leg, Lateral compartment of leg (AN:19.1,19.2,19.3,19.4,19.5)-1	Anterior Compartment of Leg and Dorsum of Foot (AN:18.1-18.3)-4
8.		Knee Joint (AN:18.4,18.5,18.6,18.7)-2	Posterior Compartment and Lateral Compartment of Leg (AN:19.1-19.5)-6
9.		Ankle Joint and Retinaculae around Ankle Joint(AN:20.1,20.3)-1	Retinaculae around Foot (AN:20.3)-2
10.		Venous and Lymphatic Drainage of Lower Limb (AN:20.3,20.4,20.5)-1	Sole(AN:19.6,19.7)-4
11.		Arches of Foot (AN:19.5,19.6,19.7)-1	Knee Joint(AN:18.4-18.7)-2
12.		Sole(AN:19.6,19.7)-2	Ankle, Subtalar and Joints of Foot (AN:20.1,20.2)-2
13.		Tibiofibular Joint, Subtalar and Joints of Foot (AN:20.1,20.2)-1	Radiological Anatomy (AN:20.6)-2
14.		Nerves of Lower Limb (AN:15.1,15.2,16.116.2,16.5,18.2,19.2)-1	Surface Marking (AN:20.7,20.8,20.9)-2
15.		Arteries of Lower Limb (AN18.2,19.2,20.8)-1	

Regional Anatomy- Thorax

	Osteology-4hrs	Theory-13hrs.	Practicals- 26 Hrs
1.	Sternum -1	Inter costal spaces (AN:21.4-21.7)	Inter costal spaces (AN:21.4-21.7)-2
2.	Ribs – 1	Mediastinum (AN:21.11)	Mediastinum (AN:21.11) -2
3.	Thoracic Vertebrae – 1	Pleura (AN:24.1,25.2,25.9)	Pleura (AN:24.1,25.2,25.9)-2
4.	Thoracic Cage - 1	Lungs (AN:24.2,24.3,24.5,25.1,25.2)	Lungs (AN:24.2,24.3,24.5,25.1,25.2)-2
5.		Pericardium (AN:22.1)	Middle Mediastinum (Pericardium) (AN:22.1)-2
6.		Heart – External Features (AN:22.2) Internal Features (AN:22.2) Blood Supply (22.3)-4	Heart – External Features (AN:22.2) Internal Features (AN:22.2) Blood Supply (22.3)-4
7.		Venous Drainage of Thorax (AN:22.5)	Superior Mediastinum (Arch of Aorta) (AN:23.4)-2
8.		Trachea & Oesophagus (AN:23.1,24.6,25.1,25.2,25.9,25.8)	Trachea & Oesophagus (AN:23.1,24.6,25.1,25.2,25.9,25.8)-2
9.		Arch of Aorta & Thoracic Duct (AN: 23.4,23.2)	Venous Drainage of Thorax (AN:22.5) Thoracic Duct (AN:23.2)-2
10.		Diaphragm (AN: 47.13)	Diaphragm (AN: 47.13)-2
11.			Radiological Anatomy (AN: 25.7,25.8)-2
12.			Surface Marking (AN:25.9)-2

Regional Anatomy- Head & Neck

	Osteology-10 Hrs	Theory-34hrs.	Practicals-66 Hrs
1.	Skull Osteology (AN:26.1-26.7) -8	Scalp (AN:27.1,27.2)-1	Scalp, Temple, Face (AN:27.1-27.2) – 6
2.	Hyoid Bone, Cervical Vertebrae (AN:26.7)-1	Face (AN: 28.1-28.4 28.6-28.8) – 1	Side of Neck – Posterior Triangle (AN:29.1-29.4) – 4
3.	Mandible – 1	Lacrimal Apparatus (AN:31.4)-1	Dissection of Back (AN: 41.1,42.2) – 2
4.		Posterior Triangle of Neck (AN:29.1 -29.4) – 1	Anterior Triangles of Neck (AN:32.1-32.2,34.1,34.2)-8
5.		Anterior Triangle of Neck (AN: 32.1,32.2)(AN:34.1,34.2)-2	Cranial Cavity (AN:30.1-30.5) -6
6.		Deep Cervical Fascia (AN: 35.1) – 1	Deep Dissection of Neck (AN: 35.1-35.10) – 4
7.		Dural Folds & Dural Venous Sinuses(AN: 30.3,30.4)-1	Pre vertebral region (AN:35.1) – 2
8.		Thyroid Gland (AN:35.2,35.8)-1	Deep dissection of Face (AN:28.1-28.10)-2
9.		Bony Orbit & Extra Ocular Muscles (AN: 31.1- 31.3)-1	Orbit (AN:31.1-31.3)-4
10.		Cranial Nerves -III &IV,VI (AN:31.2,31.5)-1	Parotid region (AN:28.9-28.10)-2
11.		Parotid Gland (AN: 28.9,28.1)-1	Temporal & Infra Temporal fossa (Anl33.1-33.4)-8
12.		Infratemporal Fossa and its contents (AN:33.1,33.4)-2	Submandibular region (AN:34.1,34.2)-2
13.		Muscles of Mastication And Temporo mandibular Joint (AN: 33.1,33.3-33.5)-1	Mouth (Tongue) and Pharynx (AN:39.1,36.3,36.5)-2
14.		Submandibular Region (AN:34.1,34.2)-1	Nasal cavity - (AN:37.1-37.3)-2
15.		Soft Palate And Palatine Tonsil (AN:36.1- 36.5)-1	Larynx (AN:38.1-38.3)-4
16.		Tongue(AN:39.1,39.2)-1	Organs of Hearing and Equilibrium(AN:40.1-40.5) -2

17.		Pharynx(AN:36.3,36.5)-1	Eye Ball(AN:41.1-41.3)-2
18.		Nasal septum and Paranasal air sinuses (AN:37.1,37.2)-1	Joints of Neck(AN:43.1)-2
19.		Lateral wall of nose (AN:37.1)-1	Radiological Anatomy (AN: 43.7-43.9)-2
20.		Larynx (AN:38.1-38.3)-2	Surface Marking (AN:43.6)-2
21.		Middle Ear, Tympanic Membrane (AN:40.2,40.4)-1	
22.		Internal Ear,(AN:40.3) Auditory Tube (AN:40.5)-1	
23.		Cranial Nerves –VII (AN:43.1,58.3,28.1)-1	
24.		Eye Ball (AN:41.1-41.3)-1	
25.		Visual Pathway (AN:30.5)-1	
26.		Cranial Nerves -V(AN: 33.1)-1	
27.		Cranial Nerves -X(AN: 35.7)-1	
28.		Cranial Nerves -IX,XI,XII (AN: 35.7,39.2)-1	
29.		Peripheral Parasympathetic Ganglia (AN:33.1,34.1,28.9)-1	
30.		Lymphatic Drainage of Head & Neck(AN:28.5,35.5)-1	
31.		Atlanto Occipital & Atlanto Axial Joints (AN:43.1)-1	

REGIONAL ANATOMY - BRAIN AND SPINAL CORD

	THEORY – 17 Hrs.	**PRACTICALS – 30 Hrs.**
1.	Spinal Cord – External Features, Meninges, Blood Supply, Tracts (AN:57.1-57.5) – 3	Spinal Cord – External Features, Meninges (AN:57.1-57.5) – 2
2.	Brain Stem- Medulla Oblongata(AN:58.1-58.4), Pons (AN:59.1-59.3), Midbrain(AN:61.1-61.3) – 3	Cerebrum –Surfaces, External Features, Meninges, Blood Supply, Functional areas(AN:62.2,62.6) -6
3.	Cerebellum, cerebellar Peduncles(AN:60.1-60.3) – 2	Brainstem(AN:58.1-58.4) -4
4.	Cerebrum-External Features, functional areas, Blood Supply(AN:62.2,62.6) - 2	Cerebellum, cerebellarPeduncles (AN:60.1-60.3) - 4
5.	White Mater of Cerebrum, Corpus Callosum , Internal Capsule (AN:62.3) -1	White Matter of Cerebrum, Thalamus, Hypothalamus, Basal Ganglia (AN:62.3) - 6
6.	Ventricles – Lateral, III, IV, CSF (AN:63.1-63.2) – 2	Ventricles(AN:63.1-63.2) - 4
7.	Thalamus, Hypothalamus(AN:62.5) – 1	Study of sections – 4
8.	Basal Ganglia, Limbic System and Olfactory Nerve (AN:62.4) – 1	
9.	Autonomic Nervous System (AN:7.1)-1	
10.	Cranial Nerve – VIII (AN:)-1	

Regional Anatomy- Abdomen & Pelvis

	Osteology-4hrs	Theory-28 Hrs.	Practicals-66 Hrs
1.	Lumbar Vertebrae, Sacrum (AN:53.4) -2	Anterior Abdominal Wall (AN:44.6) -1	Anterior Abdominal Wall (AN:44.1-44.6) -6
2.	Bony Pelvis (AN:53.2,53.3)- 2	Rectus Sheath and Its Contents (AN:44.3) -1	Inguinal Canal (AN:44.5,14.4) -2
3.		Inguinal Canal (AN:44.5,14.4) -1	Male External Genitalia (AN:46.1,46.2)- 4
4.		Testis and Spermatic Cord Epididymis (AN:46.1,46.2)- 1	Dissection of Loin(AN:45.3)-2
5.		Peritoneum (AN:47.147.2)- 2	Peritoneum (AN:47.147.2)- 4
6.		Stomach (AN:47.5)- 1	Spleen (AN:47.5)- 2
7.		Spleen & Pancreas (AN:47.5)- 1	Stomach (AN:47.5) -2
8.		Liver (AN:47.5)- 1	Coeliac Trunk (AN:47.9) -2
9.		Celiac Trunk (AN:47.9) -1	Small Intestine, Mesentery and Vessels (AN:47.5,47.9) -2
10.		Duodenum(AN:47.5) -1	Large Intestine (AN:47.5)- 2
11.		Extra hepatic biliary apparatus (AN:47.5)- 1	Duodenum (AN:47.5) -2
12.		Caecum and Appendix (AN:47.5)- 1	Pancreas and Portal Vein(AN:47.5,47.10)- 2
13.		Abdominal Aorta (AN:47.9)- 1	Liver(AN:47.5)- 2
14.		Kidney (AN:47.5)- 1	Kidney(AN:47.5)- 2
15.		Ureters (AN:47.5)- 1	Suprarenal Glands (AN:47.5) -2
16.		Suprarenal Glands (AN:47.5)- 1	Diaphragm(AN:47.13)- 2
17.		IVC, Portal Vein & Portacaval Anastomosis (AN:47.8,47.10) -1	Posterior Abdominal Wall (AN:45.1,45.3) -4
18.		Perineal Pouches, Pelvic Diaphragm, Perineal Body (AN:48.1,49.2)- 2	Urinary Bladder (AN:48.2)- 2

19.		Urinary Bladder(AN:48.2)- 1	Uterus ,Ovaries and Uterine Tube (AN:48.2) -2
20.		Seminal Vesicles and Prostate (AN:48.2)- 1	Rectum and Anal Canal(AN:48.2)- 2
21.		Uterus and Vagina (AN:48.2)- 1	Vessels of Pelvis(AN:48.3)-4
22.		Ovaries and Uterine Tubes (AN:48.2)- 1	Pelvic Diaphragm (AN:48.1, 49.1-49)-4
23.		Rectum, Ischiorectal Fossa (AN:49.4) and Anal Canal(AN:48.2)- 2	Perineum (AN:49.1,49.3) -4
24.		Internal Iliac Artery (AN:48.3)- 1	Radiological Anatomy (AN: 54.1-54.3)-2
25.		Lumbar and Sacral Plexus (AN:45.2,48.4)- 1	Surface Marking (AN:55.1,55.2)-2

List of Histology Slides

General Histology

1. Epithelial Tissue
2. Connective Tissue
3. Bone, Cartilage
4. Muscular Tissue
5. Nervous Tissue
6. Blood Vessels
7. Lymphoid Tissue

Systemic Histology

1 Trachea
2 Lung
3 Serous Salivary Gland
4 Mucous Salivary Gland
5 Mixed Salivary Gland
6 Tongue
7 Tooth
8 Esophagus
9 Stomach – Fundus
10 Stomach – Pylorus
11 Duodenum
12 Jejunum
13 Ileum
14 Colon– Large Intestine

15 Vermiform Appendix
16 Liver
17 Pancreas
18 Gall Bladder
19 Kidney
20 Ureter
21 Urinary Bladder
22 Ovary
23 Fallopian Tube
24 Uterus
25 Vaginal Wall
26 Placenta
27 Umbilical Cord
28 Mammary Gland
29 Testis
30 Epididymis
31 Vas Deferens
32 Prostate
33 Thyroid
34 Hypophysis Cerebri
35 Supra-Renal Gland
36 Cerebrum
37 Cerebellum
38 Spinal Cord
39 Cornea
40 Retina
41 Skin

Practicals in Genetics

Pedigree charts & photographs

1. Sex-Chromatin (Barr Body)
2. Male Karyotype
3. Female Karyotype
4. Down Syndrome, [21 Trisomy]
5. Edward Syndrome
6. Patau Syndrome
7. Turner Syndrome, [45 XO]
8. Klinefelter Syndrome, [47 XXY]
9. Super Female, [47 XXX]
10. Autosomal Dominant Inheritance
11. Autosomal Recessive Inheritance
12. X- Linked Recessive Inheritance
13. X- Linked Dominant Inheritance
14. Y- Dominant Inheritance
15. Structural anomalies of chromosomes.

Embryology charts & Models

General Embryology

1. Spermatogenesis
2. Spermiogenesis
3. Oogenesis
4. Fertilization
5. Neural crest cells
6. Formation of blastocyst
7. Formation of intra embryonic mesoderm
8. Formation of neural tube
9. Intra embryonic coelom
10. Neural crest derivatives
11. Somites
12. Placental abnormalities
13. Placenta previa
14. Abnormal sites of implantation

15. Development of mammary gland

GIT & Associated glands

16. Fate of cartilages of Pharyngeal arches
17. Pharyngeal pouches
18. Complete cleft palate
19. Oblique facial cleft
20. Types of cleft lip
21. Development of tongue
22. Development of tooth
23. Rotation of midgut
24. Development of liver
25. Development of pancreas

Cardiovascular system:

26. Aortic arches
27. Arteries of head and neck
28. Arteries of lower limb
29. Arteries of upper limb
30. Dorsal aorta branches
31. Inter ventricular septum
32. Development of inter atrial septum
33. Development of inferior vena cava
34. Development of portal vein
35. Foetal circulation

Urogenital system:

36. Subdivisions of primitive urogenital sinus
37. Utero vaginal canal
38. Development of ovary
39. Development of testis
40. Mesonephric duct

Endocrine system:

41. Development of thyroid gland
42. Development of pituitary gland
43. Development of suprarenal gland

Special senses:

44. Development of eye
45. Development of ear
46. Development of skin

Scheme of University examination – Anatomy

Theory: 3 hrs duration

Anatomy Paper -1 - 100M

Anatomy Paper -2 - 100M

Scheme of theory examination each held on 2 consecutive days

1. Two structured essay questions 2 x 15 = 30 marks
2. 10 short answer type questions 10 x 5 = 50 marks
3. 20 multiple choice questions 20 x 1 = 20 marks

Total = 100 marks

Theory paper wise distribution of syllabus:

Paper I

1. Upper limb
2. Head & neck
3. Neuro anatomy [Brain and spinal cord
4. Concerned embryology & histology
5. General anatomy
6. General histology

Paper II

1. Lower limb
2. Thorax
3. Abdomen, pelvis, perineum
4. Concerned embryology & histology
5. Genetics
6. General embryology

Scheme of practical:

Part – I - 40M

Gross Anatomy

a) Major exercise – Dissected parts from Head and Neck, Thorax, Abdomen and Pelvis -20M

b) Minor exercise – Dissected parts from extremities - 10M

c) Surface marking - 5M

d) Clinically oriented question -5M

Part – II - 40M

Histology including genetics

a) Spotters - 10M

b) Stained slides for discussion (2 slides) - 20M

c) Genetic exercise -10M

Orals - 20M

a) Soft parts - 5M

b) Osteology - 5M

c) Radiology - 5M

d) Embryology - 5M

Books Recommended:

General Anatomy: Any one of the following books

1. Hand book of general anatomy - BD Chaurasia
2. General Anatomy - Vishram Singh
3. Text book of General anatomy - Shobha Rawlani and Shivlal Rawlani

Reference Book:

1. Principles of General Anatomy – A.K. Datta

Embryology – Any one of the following books

1. Text book of Clinical Embryology – Vishram Singh
2. Textbook of Human Embryology - Yogesh Sontakke.

Reference Book:

1. Essentials of Human Embryology - A.K. Datta
2. Langman's Medical Embryology
3. Clinical Embryology - Keith L. Moore

Human Histology - Any one of the following books

1. Textbook of Histology – Inderbir Singh – 7th Edition
2. Textbook of Histology – G.P.PAL
3. Textbook of Human Histology – Yogesh Sontakke

Reference Books:

1. Wheater's Functional Histology – A Text and Colour Atlas – 5th Edition
2. Junqueira's – Basic Histology Text and Atlas

Genetics - Any One of the following Books

1. Human Genetics –S.D Gangane
2. Principles of Clinical Genetics – Yogesh Ashok Sontakke
3. Essentials of Medical Genetics – A.K. Datta

Reference Book:

1. Medical Genetics –G.P.PAL
2. Emery's Elements of Medical Genetics – 14th Edition

Dissection Manuals

1. Manual of practical Anatomy - Cunningham's (Dissection Manuals I, II & III volumes)

Reference Book:

1. Dissection Manual With CD – Mercy Navis

Gross Anatomy - Any one of the following books

1. Text book of anatomy - Vishram Singh – 3 Volumes
2. Human anatomy - B.D.Chaurasia – 4 Volumes
3. Essentials of Human Anatomy - A.K.Datta (3volumes)

Reference Books:

1. Gray's Anatomy- The Anatomical basis of clinical practice
2. Clinically Oriented Anatomy – Keith L. Moore
3. Lee McGregors – Synopsis of surgical Anatomy

Neuro Anatomy - Any one of the following books

1. Clinical Neuro Anatomy - Vishram Singh
2. Human Neuro Anatomy - I.B.Singh

References Books:

1. Neuro Anatomy - A.K.Datta
2. Clinical Neuroanatomy – Richard S.Snell

Atlas of Anatomy

1. Theime's Atlas of Anatomy
2. Netter's Atlas of Human Anatomy
3. Netter's Essential Histology
4. Difiore's Atlas of Histology With Functional Correlation, 12th Edition

Dictionary:

1. Pocket Book of Dorland Dictionary – Elsevier

PHYSIOLOGY

Goal:

The broad goal of teaching the undergraduate students in Physiology is to provide the student a comprehensive knowledge of the normal functions of the organ systems of the body and to facilitate an understanding of the physiological basis of health and disease.

Objectives

a. Knowledge:

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

1. Explain the normal functioning of all the organ systems and their interactions for well-coordinated total body function.
2. Assess the relative contribution of each organ system to the maintenance of the milieu interior.
3. Elucidate the physiological aspects of normal growth and development.
4. Describe the physiological responses and adaptations to environmental stress.
5. List the physiological principles underlying the pathogenesis and treatment of disease

b. Skills:

1. Conduct experiments designed for study of physiological phenomenon.
2. Interpret experimental/investigative data;
3. Conduct and interpret clinical examination in normal healthy subject;
4. Distinguish between normal and abnormal data derived as a result of tests, which he/she has performed and observed in the laboratory.

c. Attitude and communication skills:

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

1. Show due respect to persons who volunteer to be clinically examined for the purpose of learning.
2. communicate effectively with peers, teachers and volunteers during clinical examination
3. Demonstrate the ability of team work

d. Integration:

At the end of the integrated teaching the student should acquire an integrated knowledge of the organ structure, function and the regulatory mechanisms.

List of systems included in Physiology:

- General Physiology
- Hematology
- Nerve-Muscle Physiology
- Gastro-Intestinal Physiology
- Cardiovascular Physiology

- Respiratory Physiology
- Renal Physiology
- Endocrine Physiology
- Reproductive Physiology
- Neurophysiology (Central Nervous System and Special Senses)
- Integrated Physiology

Physiology Syllabus

THEORY

General Physiology (PY 1.1-1.9) (8 hrs)

Structure and functions of a mammalian cell**;** Homeostasis, Intercellular communication**;** Apoptosis; Transport mechanisms across cell membranes; Fluid compartments of the body; pH & Buffer systems in the body; Evaluation of functions of the cells and products in clinical care and research.

Hematology: (PY 2.1 - 2.13) (16 hrs)

Components of blood: formation, regulation and functions; plasma proteins – origin, types, variations and functions; Hemoglobin- synthesis, variants, functions and its breakdown & Jaundice; Blood indices; Anemia and its classification; Hemostasis: mechanism, regulation & disorders Anticoagulants; Blood groups, blood banking and transfusion; Immunity: types, mechanism & regulation; ESR; Lymph-composition, circulation and functions

Nerve & Muscle Physiology: (PY 3.1 - 3.18) (10hrs)

Neuron and neuroglia: structures, types, functions; Resting membrane potential; Action potential in nerve, skeletal & smooth muscle; Nerve fibres: classification, functions & properties; nerve injuries, degeneration and regeneration in peripheral nerve; Neuromuscular junction: structure, transmission of impulses, neuro-muscular blocking agents, Myasthenia gravis; Muscle fibres: structure, types & functions; Muscle contraction; molecular basis (skeletal, smooth), Isotonic Vs. Isometric, Energy sources and metabolism, gradation of muscle activity; muscle dystrophy, Myopathies; Strength-duration curve

Gastrointestinal Physiology: (PY 4.1 - 4.10) (10hrs)

Functional anatomy and broad functions of digestive system, enteric nervous system; GI Secretions- composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion; GI movements- types, regulation, functions, reflexes; role of dietary fibres; Digestion and absorption of nutrients; GI hormones- source, regulation, functions; Gut-brain axis; structure and functions of liver and gall bladder; gastric function tests, pancreatic exocrine function tests & liver function tests, Pathophysiology - Achalasia cardia, peptic ulcer, gastro oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease.

Cardiovascular Physiology: (PY 5.1 - 5.16) **(25hrs)**

Functional anatomy of heart; Pacemaker tissue and conducting system-generation, conduction of cardiac impulse; Properties of cardiac muscle; Cardiac cycle; ECG- recording, normal ECG, uses, cardiac axis, Abnormal ECG in common arrhythmias, changes with hypertrophy & MI; Haemodynamics; Heart rate- factors affecting, regulation; Cardiac output- factors, regulation, measurement; Blood pressure- components, determinants, factors, regulation and applied aspect, Regional circulation- autoregulation, microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, fetal, pulmonary and splanchnic circulation; Pathophysiology- shock, syncope, heart failure & coronary artery disease

Respiratory Physiology: (PY 6.1-6.10) **(12hrs)**

Functional anatomy of respiratory tract, dead space; Mechanics of respiration; Pressure volume changes during ventilation; Lung volume and capacities; Alveolar surface tension; Compliance; Airway resistance; alveolar ventilation, V/P ratio; Diffusion capacity of lungs; Transport of respiratory gases- Oxygen and Carbon dioxide; Neural and chemical regulation of respiration; Physiology of high altitude and deep sea diving; Principles of artificial respiration, oxygen therapy; Patho-physiology of dyspnoea, hypoxia, cyanosis, asphyxia, drowning, periodic breathing; Lung function tests & its clinical significance

Renal Physiology: (PY 7.1 - 7.9) **(10hrs)**

Structure and functions of kidney & juxta glomerular apparatus, role of renin-angiotensin system ; Renal blood flow; Mechanism of urine formation, concentration and diluting mechanism;

Concept and significance of 'clearance' tests; Renal regulation of fluid and electrolytes & acid-base balance; Structure and innervation of urinary bladder, physiology of micturition, cystometry, and its abnormalities; Artificial kidney(dialysis) and renal transplantation; Renal Function Tests

Endocrine Physiology: (PY 8.1 - 8.6) **(16 hrs)**

Mechanism of action of steroid, protein and amine hormones; Synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus; Physiology of bone and calcium metabolism; Physiology of growth; Physiology of Thymus & Pineal Gland; Hormone function tests ; Obesity & metabolic syndrome; Stress response

Reproductive Physiology: (PY 9.1 - 9.12) **(10hrs)**

Sex determination; sex differentiation and their abnormalities; Puberty: onset, progression, stages; early and delayed puberty; Male reproductive system: functions of

testis, spermatogenesis and its regulation, Cryptorchidism ; Female reproductive system: functions of ovary and its control, menstrual cycle: Hormonal, uterine and ovarian changes; Tests for ovulation; Physiological effects of sex hormones; Contraceptive methods for male and female; Effects of removal of gonads on physiological functions; Physiology of pregnancy, fetoplacental unit, pregnancy tests, parturition & lactation; Semen analysis; Causes and principles of management of infertility; Hormonal changes and their effects during perimenopause and menopause; Psychological and psychiatric disturbances associated with reproductive physiology.

Neurophysiology: (PY 10.1 - 10.20) (37 hrs)

Organization of nervous system; Sensory system: types, functions and properties of synapse, receptors, reflex; Somatic sensations & sensory tracts; Physiology of pain; Motor system: organization, motor tracts, mechanism of maintenance of tone, control of voluntary movements ; Posture and equilibrium & vestibular apparatus; Reticular activating system, Autonomic nervous system ; Spinal cord: functional organization and lesions ; Formation, circulation and function of CSF; Blood brain barrier; Neurotransmitters.

Organization, connections and functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities; Higher mental functions ; Physiology of sleep, memory, learning and speech and their disorders; EEG.

Special senses- Smell and taste sensation and their abnormalities; Functional anatomy of ear and auditory pathways & physiology of hearing, Deafness, hearing tests; Functional anatomy of eye, Image formation, Visual pathway and its lesions, Physiology of vision including acuity of vision, colour vision, field of vision, refractive errors, physiology of pupil; light reflex, accommodation reflex, dark and light adaptation; Auditory & visual evoked potentials

Integrated Physiology: (PY 11.1 - 11.14) (6 hrs)

Temperature regulation: mechanism, adaptation to altered temperature (heat and cold environment), mechanism of fever, cold injuries and heat stroke; Exercise- cardio-respiratory and metabolic adjustments during exercise (isotonic and isometric), exercise in heat and cold, physical training effects; Physiological consequences of sedentary lifestyle; Brain death; Physiology of Infancy*; Physiology of aging-free radicals and antioxidants*; Physiology of meditation*.

(* 'Non-core' competencies as per "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India").

PRACTICAL

The following list of practical is minimum and essential. Additional exercises can be included as and when feasible and required. All the practicals have been categorized as **'Procedures to be performed'** and **'Demonstrations'.** The procedures are to be performed by the students during practical classes to acquire skills. These would be included in the practical during University examination. Those categorized as 'Demonstrations' are to be shown to students during practical

classes. Questions based on these would be given in the form of data, charts, graphs, problems and case histories for interpretation by students during university examination.

I. Procedures to be performed by the students:

a. Haematology:

1. RBC count
2. WBC Count
3. Differential Leucocyte Count
4. Estimation of haemoglobin
5. Blood grouping
6. Bleeding time
7. Clotting time
8. Calculate RBC indices - MCV, MCH, MCHC.

b. Procedures to be performed on human subjects:

1. Mosso's ergography.
2. Recording of Blood Pressure, pulse rate at rest and effect of posture.
3. Effect of mild and moderate exercise on blood pressure, pulse rate and respiratory rate using Harvard step test.
4. Record and interpret Lead II ECG. Given a normal ECG, determine cardiac axis.
5. Spirometry – Lung volumes and capacities, MVV, Timed vital capacity.
6. Peak Expiratory Flow Rate
7. Demonstrate Basic Life Support in a simulated environment
8. Visual field by Perimetry

c. Clinical Examination:

1. Components of history taking and general physical examination
2. Examination of radial pulse
3. Examination of Cardiovascular system
4. Examination of Respiratory system
5. Examination of abdomen
6. Examination of Higher mental functions
7. Examination of Sensory system
8. Examination of Motor system including reflexes.
9. Examination of Cranial Nerves

II. Demonstrations:

I.Haematology:

1. Erythrocyte sedimentation rate
2. Haematocrit
3. Reticulocyte count
4. Platelet count
5. Osmotic fragility

2. Record Arterial pulse tracing using finger plethysmography*
3. Stethography
4. Tests of cardiovascular autonomic functions*

(* 'Non-core' competencies as per "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India")

III. Interpretation- charts: clinical case histories, graphs, charts, problems

(Suggested topics for preparation of these are given under **ANNEXURE I**.

Chart also includes - Interpret growth chart*, Interpret anthropometric assessment of infants*: (*these two charts are 'Non-core' competencies as per "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India")

IV. Computer assisted learning:

(i) Amphibian nerve - muscle experiments and interpretation of graphs

- Simple muscle twitch
- Effect of various strengths of stimuli on Simple muscle twitch
- Effect of changes in temperature on Simple muscle twitch
- Effect of two successive stimuli on muscle contraction
- Effect of multiple successive stimuli (treppe, clonus, tetanus)
- Study of fatigue in skeletal muscle
- Velocity of nerve conduction
- Effect of load on muscle
- Measurement of isometric contractions using nerve muscle preparation

(ii) Amphibian cardiac experiments and interpretation of graphs

- Normal cardiogram
- Effect of temperature on frog heart
- Effect of Stannius ligatures
- Properties of cardiac muscle – all or none law, staircase effect, refractory period in a beating heart (extrasystole and compensatory pause), refractory period in a quiescent heart
- Effect of vagus on frog's heart
- Action of drugs on vagus (nicotine and atropine)
- Perfusion of isolated heart and effect of ions (NaCl, KCl, $CaCl_2$)
- Perfusion of isolated heart and effect of drugs (adrenaline, acetyl choline, atropine followed by Ach)

SKILL CERTIFICATION:

The list of certifiable skills is given below. The general instructions, blank template, samples of certification checklist suggested for skill certification are provided as **ANNEXURE - IIa, IIb, IIc, IId.**

List and number of sessions for skill certification as prescribed by MCI:

	Topics	Number of skills required To be certified as per MCI
PY5.12	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	3
PY6.9	Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment	1
PY 10.11	Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment	5
PY 10.20	Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer / simulated environment	4

SUGGESTED AREAS FOR INTEGRATION:

As per the "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India"

EARLY CLINICAL EXPOSURE:

- **Clinical visits: 12 hours** (Suggested format for assessing participation in ECE sessions is provided as **ANNEXURE III which could be a part of the practical record book**)

  Suggested hospital visits: (can include more than the below suggestions)

  Anemia, Diabetes, Fever, Stroke, Jaundice, Visit to blood bank, Computerized lung function tests, acid peptic disease, endoscopy procedure, dialysis unit, hemiplegia, etc.

- **Basic science correlations: 18 hours**

  Discussion based on case vignettes, graphs, clinical videos, patient in classroom setting, etc linked to various systems in physiology.

SELF-DIRECTED LEARNING:

Twenty-five hours of dedicated time for self-directed learning is provided for Physiology.

AETCOM MODULES TO BE COVERED UNDER PHYSIOLOGY:

AETCOM module number (as per MCI document) *	Topic
1.2	What does it mean to be a patient?
1.4	Foundations of communication

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

Suggested format for reflective writing for the above AETCOM modules is given in ANNEXURE IV. This could be a part of the practical record book.

LOG BOOK:

Suggested Template of logbook is attached as annexure. The minimum elements that needs to be included are mentioned in the template provided **for log book.**

TEACHING HOURS AND METHODS:

Curricular component	Time allotted in hours
Lectures	160
Small group teaching / tutorials / integrated learning /practical	310
Self-directed learning	25
Early clinical exposure (basic science correlation and clinical skills)	30 (18 +12)
Total	**525**
AETCOM module 1.2 and 1.4	15 (8+7)

Note: It is recommended that **didactic teaching** be restricted to **less than one third of the total time** allotted for that discipline.

SCHEME OF EXAMINATION:

INTERNAL ASSESSMENT:

Scheme for calculation of Internal Assessment marks:

Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory written paper	40	Practical exam (30 marks) and viva- voce (10 marks)	40
Formative assessment		**Formative assessment**	
Part completion tests	5	Early clinical exposure	5
Attendance	5	Log Book	5
Total	**50**		**50**

UNIVERSITY EXAMINATION

SCHEME FOR MARKS DISTRIBUTION FOR UNIVERSITY EXAM:

Theory		Practical	
Paper I	100	Practical exam (Practical I to IV)	80
Paper II	100	Viva voce	20
Total	**200**	**Total**	**100**
Internal assessment	50	Internal assessment	50

A. THEORY: 200 Marks

There shall be two theory papers of 100 marks each and duration of each paper will be of 3 hours.

Type of questions	Number of questions	Marks for each question	Total Marks
Long essay	2	15	30
Short essay	10	5	50
MCQ's	20	1	20
Total Marks			100

Blue print for theory question papers:

Paper 1 (Max 100 marks)

Systems	**Marks Allocated**
Cell Physiology, Biophysics, Body fluids	05
Haematology	20
Respiratory System	20
Excretory System	15
Cardio Vascular System	25
Digestive System	15

Paper 2 (Max 100 marks)

Systems	Marks Allocated
Endocrine Physiology	20
Reproductive System	15
Muscle and Nerve Physiology	12
Central Nervous System	35
ANS and Special senses	10
Integrated Physiology	08

Note:

- **The systems assigned to the different papers are generally evaluated under those sections. However, a strict division of the subject may not be possible and some overlapping of systems is inevitable. Students should be prepared to answer overlapping systems.**
- **Example of the structured questions and case vignettes are given in the example question papers in ANNEXURE Va, Vb. <u>This is only a model paper</u>. The systems under each section of the paper (long essay, short essay and MCQ) and the system from which the case vignette may be prepared can vary. However, marks allotted to the various systems as given in the above tables must be adhered to (with minimal variation of distribution of marks)**
- **Atleast 1 SAQ in each subject from AETCOM Module.**

RECOMMENDED TEXT BOOKS :

1) Text book of Medical Physiology Author's: Venkatesh & H.H. Sudhakar
2) Text book of Physiology Author: AK Jain
3) Text book of Medical Physiology Author: G K pal
4) Text book of Medical Physiology Author: Indu khurana
5) Text book of Medical Physiology Author: Guyton & Hall
6) Review of Medical Physiology Author: Ganong

PRACTICALS :

1) Manual of Practical Physiology Author:C L Ghai
2) Manual of Practical Physiology Author:G K Pal
3) Manual of Practical Physiology Author:A K Jain

REFERENCE :

1) Understanding Medical Physiology - Author:R L Bijlani
2) Physiological Basis of Medical Practice Author's:Best & Taylor's
3) Principles of Physiology Author's: Berne& Levy
4) Vanders Human Physiology

ANNEXURE – I

List of suggested topics for the preparation of charts, clinical cases, graphs, clinical problems

(Note: many other topics from the syllabus can be considered and charts developed which is left to the discretion of individual institution)

i. General Physiology – Blood volume, feedback mechanisms flowchart

ii. Nerve muscle physiology – Myesthenia gravis, picture chart of neuromuscular junction

iii. Hematology – clinical cases of anemia, blood indices, peripheral smear, jaundice (prehepatic, post hepatic and hepatocellular),

iv. Cardiovascular system – problems on cardiac output, cardiac index, ejection fraction, clinical cases on hypertension, shock, heart failure; interpretation of ECG and calculation of heart rate from ECG,

v. Respiratory system – spirogram with calculation of lung volumes and capacities, dyspnoeic index, respiratory reserve, charts with FEV1/FVC in obstructive and restrictive conditions

vi. Renal system – Clearance tests, cystometrogram

vii. Gastrointestinal system- clinical cases on peptic ulcer, OGTT, Gastrooesophageal reflux disease

viii. Endocrine system – clinical case histories / pictorial charts for various endocrine disorders

ix. Reproductive system - spinnbarkeit pattern pictorial chart, Fern pattern chart, clinical case history of infertility, hormonal changes during menstrual cycle graph,

x. Central nervous system - pictorial chart of properties of synapses, reflex arc, clinical cases on any of the 12 cranial nerves, Brown Sequard syndrome, cerebellar dysfunction, sensory ataxia, Parkinson's disease, UMN lesion, LMN lesion.

xi. Special senses – visual acuity, perimetry, hearing loss, audiogram

xii. Basal metabolic rate

xiii. Integrated Physiology: Chart also includes - Interpret growth chart*, Interpret anthropometric assessment of infants*: (*these two charts are 'Non-core' competencies as per "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India")

xiv. Others

ANNEXURE- IIa

SUGGESTED FORMAT FOR CERTIFICATION OF SKILLS IN PHYSIOLOGY
GENERAL INSTRUCTIONS

General information:

1. There are 13 skills that need to be certified in Physiology
2. These skills will be tested in normal, healthy volunteers or simulated patient
3. The focus will be on whether students perform the procedures correctly
4. Since these are skills that need to be recertified at the end of clinical training, this certification is a **"First level Certification"**

Role of the certifier:

1. Observe the student perform the skill without any prompting or interference
2. At the end of the assessment ask the specific questions that need to be asked (based on the skill checklist)
3. Grade the student (A, B, C, D – see below)
4. Give feedback to the student on the errors, if any, at the end of the skill assessment.
5. Fill in the Certification Sheet

Assessment

Professional conduct and communication:

1. Is the student adequately groomed
2. Does the student introduce him/herself, greet the subject and obtain consent?
3. Does the student use the hand sanitizer?
4. Does the student give clear instructions to the subject?
5. Does the student thank the subject?
6. Does the student use the hand sanitizer at the end of the session?

Skill specific assessment:

1. Has the student conducted the given assessment completely?
2. Has the student conducted the given assessment correctly?
   (for the above two points please refer to the checklist for the specific skill)
3. How do you rate the student for this session?

Grade	Explanation of Grade	Action to be taken
A	Student has performed the assessment **without any error**	Can be certified for skill
B	Student has performed the assessment **with minor errors** that need to be rectified	Re-assessment for parts that have been performed incorrectly
C	Student has performed the assessment **with major errors**	Re-assessment of whole skill
D	Student has **not been able to perform** the assessment	Re-assessment of whole skill

(Note: columns for 'number of attempts' can be added in the template attached below)

ANNEXURE – IIb

CERTIFICATION SHEET – Blank Template:

Name of Student:

Subject:

Skill:

Competency Number:

Grading of Student (please circle the appropriate letter – A, B, C, D)

A	Student has performed the assessment without any error
B	Student has performed the assessment with minor errors that need to be rectified
C	Student has performed the assessment with major errors
D	Student has not been able to perform the assessment

SKILL CHECKLIST
Satisfactory (√), unsatisfactory (X)

	Attempt I Date:	**Attempt II Date:**	**Attempt 'n' …….. Date:**
Professional conduct and communication			
Steps • • .... • ...			
Grade			
I have received detailed feedback on my performance including my grade, the errors that I have committed and actions to be taken. (student's signature)			

Assessor name and signature with date of certification:

ANNEXURE – IIc

Sample Skill certification checklist: Examination of reflexes

Name of Student:

Subject:

Skill:

Competency Number:

Grading of Student (please circle the appropriate letter – A, B, C, D)

A	Student has performed the assessment without any error
B	Student has performed the assessment with minor errors that need to be rectified
C	Student has performed the assessment with major errors
D	Student has not been able to perform the assessment

(Note: columns for 'number of attempts' can be added in the template attached below)
SKILL CHECKLIST (Examination of Reflexes)
Satisfactory (√), unsatisfactory (X)

	Attempt I Date:	**Attempt II Date:**	**Attempt 'n'…… Date:**
Professional conduct and communication			
Step Superficial reflexes: • Explains procedure to subject for each of the following: Plantar reflex: • Asks the subject to lie down with foot wear removed • With the help of a blunt object stroke the sole, from heel along the lateral border of foot and medially along the metatarso-phalangeal joint. • Reports the finding (flexor response/Babinski's sign) • Mentions the level of integration on asking (L5, S1) Abdominal reflex:			

• Asks the subject to lie down with foot wear removed • With the help of a key, strokes parallel to costal margin. Both below and above naval region • Observes and reports the contraction of abdominal muscles • Mentions the level of integration on asking (T8 to T12) Deep reflexes: Biceps jerk: • Places subject's forearm in semi-flexed position supported by his/her forearm in relaxed state. • Places thumb on the tendon of biceps in cubital fossa. • With the help of knee hammer taps on the thumb. • Observes and reports (the contraction of biceps and flexion of forearm) • Mentions the level of integration on asking (C5, C6) Triceps jerk: • Supports the forearm of subject on his/her arm at right angles. • Taps the tendon of triceps just above olecranon. • OR • Asks the subject to place his hand on opposite shoulder and taps triceps tendon. • Observes and reports. (the contraction of triceps and extension of forearm) • Mentions the level of integration on asking (C6, C7) Supinator jerk: • The subject's forearm is held in semi-prone position and asks to rest his hand on the student's hand. • Taps the styloid process of the radius. • Observes and reports (contraction of supinator flexion of elbow and eversion of wrist) • Mentions the level of integration on asking (C5, C6) Knee jerk: (ask to demonstrate either sitting or supine position) Sitting position: • Asks the subject to sit on chair with legs relaxed and not touching the ground / legs crossed. Knee of the examining lower limb is exposed. With knee hammer, taps on the patellar tendon just above tibial tuberosity			

Lying down position: • Asks the subject to liedown supine • Positions the limb at 60 angle from bed • The student passes the hand underneath the testing limb, rests the hand on the opposite limb and the limb to be tested is slightly raised • The tendon is tapped • Observes and reports (contraction of quadriceps and extension of knee) • Mentions level of integration (L2, L3, L4) Ankle jerk: (ask to demonstrate either sitting or supine position) Standing position: • Asks the subject to place the limb to be examined on the stool with knee flexed at right angles to thigh • Dorsiflexes the ankle • Taps the tendoachillis with knee hammer • Makes the subject lie down. Positions the leg slightly flexed at the knee and foot slightly dorsiflexed. • Holds the big toe gently and taps tendoachillis • Observes and reports (contraction of gastrocnemius muscle with plantar flexion) Mentions level of integration (S1, S2)			
Grade			
I have received detailed feedback on my performance including my grade, the errors that I have committed and actions to be taken. (student's signature)			

Assessor name and signature with date of certification:

ANNEXURE IId

Sample Skill certification checklist: Measurement of Blood pressure at rest

Name of Student:

Subject:

Skill:

Competency Number:

Grading of Student (please circle the appropriate letter – A, B, C, D)

A	Student has performed the assessment without any error
B	Student has performed the assessment with minor errors that need to be rectified
C	Student has performed the assessment with major errors
D	Student has not been able to perform the assessment

(Note: columns for 'number of attempts' can be added in the template attached below)

SKILL CHECKLIST (measurement of Blood Pressure)

	Attempt I Date:	**Attempt II Date:**	**Attempt 'n'…… Date:**
Professional conduct and communication			
Steps: · Positions subject (sitting-with their feet on floor, legs uncrossed and their back supported/ supine-lying down) and rests for 5min approx · Exposes the subjects arm at least 5 inches above the elbow: Sleeve can be rolled up but must be able to fit a finger under it or remove constrictive clothing. · Squeezes all air out of cuff before applying to subject · Arm is supported, at heart level, palm of hand turned up · Place cuff snugly on bare arm.			

·The centre of the bladder is positioned over the line of the artery. ·The lower edge of the bladder is 2-3 cm above the elbow crease ·The palpatory systolic pressure is measured by palpating for the radial artery, closing the valve, and pumping up the cuff. (Deflates cuff slowly and notes the point of reappearance of pulse) · The student reports the Palpatory Systolic Pressure ·Releases the air from the cuff and waits 30 seconds. -Elevates the pressure 20-30mm Hg above the palpatory systolic pressure. · Uses stethoscope properly (direction of ear pieces). Checks the stethoscope amplification for sound. · Position the diaphragm of the stethoscope over the brachial artery. · Deflates slowly at about 2mmHg/second ·Releases the remaining air in the cuff after recording BP by opening the valve completely and removing the cuff. · If the student needs to recheck, completely deflates, waits 1-2 minutes and then reinflates. ·Documents: pt. position, arm used, cuff size, blood pressure Measurement			
Grade			
Name and signature of the assessor			
I have received detailed feedback on my performance including my grade, the errors that I have committed and actions to be taken.			

Certifiers name and signature with date of certification:
Signature of the student:

ANNEXURE III

(Note: questions could be added/modified to this document which is at the discretion of individual institution. This appendix could be a part of practical record/logbook of Physiology)

SUGGESTED FORMAT FOR ASSESSING PARTICIPATION IN EARLY CLINICAL EXPOSURE SESSIONS

Session number: **Date:**

Roll No:

Department visited:

Objectives

1.

2.

3.

1. Briefly describe what you learnt from this session/ clinical visit in relation to the objectives. (in 100-150 words)

2. Apart from the above learning, what did you observe that influenced (Positive/negative) you? (in 100-150 words)

ANNEXURE IV

(Note: questions could be added/modified to this document which is at the discretion of individual institution. This appendix could be a part of practical record/logbook of Physiology)

SUGGESTED FORMAT FOR AETCOM SESSIONS

Name of the Facilitator: Date:

AETCOM module Number: Session number:

AETCOM Topic:

Competencies / Objectives:

1.

2.

3.

1. Briefly describe what you learnt from this AETCOM session in relation to the objectives. (in 100-150 words)

2. Apart from the above learning, what did you observe that influenced (Positive/negative) you during this session? (in 100-150 words)

BIOCHEMISTRY

GOAL

The broad goal is to teach Biochemistry to undergraduate students to make them understand in molecular terms, all chemical processes of living cells, understand the molecular basis of disease processes which will help them in understanding clinical conditions and application of the knowledge in treatment.

OBJECTIVES

A. KNOWLEDGE

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

1. Describe the molecular and functional organization of a cell and its subcellular components;
2. Delineate structure, function and how functional groups relate to biomolecular reactions, interactions;
3. Summarize the fundamental aspects of enzymology and clinical application wherein regulation of enzymatic activity is altered;
4. Describe digestion and assimilation of nutrients and consequences of malnutrition;
5. Integrate the various aspects of metabolism and their regulatory pathways;
6. Explain the biochemical basis of inherited disorders with their associated sequelae;
7. Describe mechanisms involved in maintenance of body fluid and pH homeostasis;
8. Outline the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine;
9. Summarize the molecular concepts of body defense and their application in medicine;
10. Outline the biochemical basis of environmental health hazards, biochemical basis of cancer and carcinogenesis;
11. Familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis and interpretation of a given data;
12. Suggest laboratory investigations to support theoretical concepts and clinical diagnosis.

B. SKILLS:

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

1. Make use of conventional techniques/instruments to perform biochemical analysis relevant to clinical screening and diagnosis;
2. Analyze and interpret investigative data;
3. Demonstrate the skills of solving scientific and clinical problems and decision Making.

C. INTEGRATION

The knowledge acquired in Biochemistry should help the students to integrate molecular events with structure and function of the human body in health and disease.

COURSE CONTENT AND TEACHING HOURS

A. TEACHING HOURS

TOTAL: 250 HOURS

THEORY SYLLABUS

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
SGT= Small group teaching; SDL= Self directed learning; CBL= case based learning; HI= Horizontal integration; VI= Vertical integration								
	Introduction to Biochemistry		1			1		
BI1.1	**Basic Biochemistry**	**Describe the molecular and functional organization of a cell and its subcellular** 1. Cell: Types and Functions 2. Cellular components: types of cells, functional role of subcellular organelles, marker enzyme 3. Cell membrane structure and functions: structure -function relationships, 4. Cell membrane transport: active transport, passive transport, endocytosis, exocytosis 5. Cytoskeleton: structure and functions of microtubules, actin filaments, intermediate filaments	2	1		3	HI (Physiology)	1
BI2.1	**Enzymes**	**Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature.** 1. Define enzyme, isoenzyme, alloenzyme, coenzyme and co-factors	1			1		

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		2. Enzymes - IUBMB classification with 4examples 3. Enzymes - general characteristics,enzyme specificity, active site 4. Coenzymes						
BI2.2		**Observe the estimation of SGOT & SGPT** Estimation and interpretation of SGOT and SGPT	-	-	-	-		
BI2.3		**Describe and explain the basic principles of enzyme activity** 1. Mechanism of enzyme action 2. Factors affecting enzyme activity 3. Regulation of enzyme activity	1			1		
BI2.4		**Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes.** 1. Enzyme inhibition with examples 2. Therapeutic role of enzymes	1			1	VI (Pathology, General Medicine)	1
BI2.5		**Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions.** 1. Isoenzymes 2. Enzymes used as diagnostic markers	1	1		2	VI (Pathology, General Medicine)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI2.6		**Discuss use of enzymes in laboratory investigations (Enzyme-based assays)** 1. Enzyme kinetics 2. Principles for the estimation of enzymes 3. Role of enzymes in molecular biology and immunoassays	1	1	2	4	VI (Pathology, General Medicine)	
BI2.7		**Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions.** 1. Reference ranges, interpretation of laboratory reports of enzymes and isoenzymes in diseases of heart, muscle, liver, bone, pancreas 2. Enzymes as tumour markers			2	2	VI (Pathology, General Medicine)	
BI3.1	**Chemistry and metabolism of carbohydrates**	**Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body** 1. Definition and classification of carbohydrates with examples and their properties 2. Monosaccharides, derivatives of monosaccharides and their biomedical importance 3. Oligosaccharides, polysaccharides-composition and biomedical importance	2			2		

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI3.2		**Describe the processes involved in digestion and assimilation of carbohydrates and storage.** 1. Digestion of carbohydrates 2. Absorption of carbohydrates, role of glucose transporters and their importance 3. Glycogen metabolism- conversion of glucose to glycogen	1			1		
BI3.3		**Describe and discuss the digestion and assimilation of carbohydrates from food.**					VI (General Medicine)	1
		1. Digestible and undigestible carbohydrates, dietary fibre 2. Clinical aspects of carbohydrate digestion and absorption, lactose intolerance						
BI3.4		**Define and differentiate the pathways of carbohydrate metabolism, (glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt).**	3			3	VI (General Medicine)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		1. Glycolysis - steps, energetics, regulation, aerobic and anaerobic glycolysis, Cori's cycle 2. Rapaport Leubering cycle and its significance 3. Pyruvate dehydrogenase complex and its co enzymes 4. Gluconeogenesis- substrates, key enzymes, steps in relation to glycolysis, regulation 5. Glycogenesis and glycogenolysis - steps, energetics and regulation; 6. Minor metabolic pathways of glucose: HMP shunt – steps, regulation and significance Uronic acid pathway – steps and significance Metabolism of galactose and fructose						
BI3.5		**Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders.** 1. Role of hormones in the regulation of	1		1	2		
		carbohydrate metabolism 2. Inborn errors of carbohydrate metabolism - glycogen storage disorders, disorders associated with fructose and galactose metabolism 3. Diabetes mellitus and hypoglycemia						
BI3.6		**Describe and discuss the concept of TCA cycle as a amphibolic pathway and its regulation.**	1	1		2		

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		Citric acid cycle - reactions, energetics, regulation, significance						
BI3.7		**Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate)** Inhibitors of enzymes of glycolysis and citric acid cycle and their importance	1		1	2		
BI3.8		**Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.** Laboratory tests done for inborn errors of carbohydrate metabolism and their interpretation		1		1	VI (Pathology, General Medicine)	1
BI3.9		**Discuss the mechanism and significance of blood glucose regulation in health and disease.** 1. Metabolism of glucose in fed and fasting states 2. Regulation of blood glucose 3. Diabetes mellitus and its complications	1		1	2	VI (General Medicine)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
I3.10		**Interpret the results of blood glucose levels and other laboratory investigations related to disorders of carbohydrate metabolism.** 1. Normal blood sugar levels, glycated hemoglobin 2. Laboratory investigation for diabetes mellitus – glucose tolerance test and its interpretation			1	1	VI (General Medicine)	
BI4.1	**Chemistry and metabolism of lipids**	**Describe and discuss main classes of lipids (Essential/non-essential fatty acids, cholesterol and hormonal steroids, triglycerides, major phospholipids and sphingolipids) relevant to human system and their major functions.**	3			3	VI (General medicine)	1
		1. Definition, classification, functions and biological importance of lipids 2. Classification of fatty acids with examples, essential fatty acids and their importance 3. Composition and importance of triglycerides 4. Phospholipids - classification with examples, biological functions and clinical significance 5. Cholesterol-functions and derivatives						
BI4.2		**Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism.**	4		1	5		

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		1. Composition of dietary lipids 2. Digestion and absorption of dietary lipids - role of bile acids and various digestive						
		enzymes 3. Absorption of lipids - including small, medium and long chain fatty acids 4. Disorders of lipid digestion and absorption 5. Metabolism of triglycerides and phospholipids 6. Fatty acid oxidation 7. Biosynthesis of fatty acids 8. Ketone body metabolism 9. Metabolism of cholesterol						
BI4.3		**Explain the regulation of lipoprotein metabolism & associated disorders.** 1. Formation and cellular uptake and the fate of chylomicrons, VLDL, LDL and HDL. 2. Hyper and hypolipoproteinemias 3. Fatty liver	1	1		2		
BI4.4		**Describe the structure and functions of lipoproteins, their functions, interrelations & relations with atherosclerosis.** 1. Lipoproteins - classes, structure, functions and clinical importance 2. Apolipoproteins – classes, functions and clinical importance 3. Atherosclerosis – concept of CVD risk factors, lipids and lipoproteins and CVD			1	1		

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI4.5		**Interpret laboratory results of analytes associated with metabolism of lipids.** 1. Various components of lipid profile and their reference ranges 2. Inborn errors of lipid metabolism and lipid storage disorders			1	1		
BI4.6		**Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.** 1. Eicosanoids 2. Prostaglandins, prostacyclins, thomboxanes and leukotrienes -synthesis and functions 3. Therapeutic applications of prostaglandins 4. Anti inflammatory drugs – mechanism of action	1	1		2		
BI4.7		**Interpret laboratory results of analytes associated with metabolism of lipids.** 1. Various patterns of dyslipidemias 2. Lipid and lipoprotein levels in various hyperlipoproteinemias			1	1		

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI5.1	**Chemistry and metabolism of proteins**	**Describe and discuss structural organization of proteins.** 1. Amino acids: Classification of amino acids: based on side-chains, nutritional requirement, metabolic fate 2. Proteins: Definition, Classification based on chemical nature and solubility, nutritional value 3. Functions 4. Properties of Proteins 5. Structure of proteins: Levels of organization, bonds stabilizing structure 6. Outlines of elucidation of protein structure 7. Separation techniques for proteins and amino acids 8. Plasma proteins	3			3		
BI5.2		**Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies** 1. Structure-function relationship: Haemoglobin, collagen, enzymes 2. Biologically active peptides			1	1	VI (Pathology, General Medicine)	1
BI5.3		**Describe the digestion and absorption of dietary proteins** 1. Digestion of proteins 2. Absorption of amino acids: transporters, meisters cycle 3. Disorders associated with absorption of amino acids	1			1	VI (Pediatrics)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI5.4		**Describe common disorders associated with protein metabolism** 1. Amino acid pool 2. General pathways of metabolism: transamination and deamination 3. Inter-organ transport of amino aicds 4. Ammonia: formation, transport and detoxification through urea cycle, urea cycle disorders, ammonia toxicity 5. Metabolic fate of amino acid carbon skeleton 6. Metabolism of individual amino acids: alanine, serine, histidine, acidic amino acids- aspartate, glutamate, sulphur containing amino acids, aromatic amino acids- phenyl alanine, tyrosine, tryptophan, branched chain amino acids-valine, leucine, isoleucine, basic amino acids- arginine, lysine 7. Special products derived from amino acids 8. Inborn errors of metabolism associated with amino acids 9. One carbon metabolism	6	2	2	10	VI (Pediatrics)	
BI5.5		**Interpret laboratory results of analytes associated with metabolism of proteins.** 1. Urea 2. Creatinine 3. Screening test. Guthrie test for PKU (phenyl ketonuria).			2	2	VI (General Medicine)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.1 .	Metabolism and homeostasis	**Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states** 1. The metabolic fates of carbohydrates, lipids and proteins 2. Integration of metabolism 3. Metabolic profile of individual organs 4. Organ-specific metabolic pathways active in the fasting and well fed states	2			2	VI (General Medicine)	1
BI6.2		**Describe and discuss the metabolic processes in which nucleotides are involved.** 1. Nitrogen bases: purines, pyrimidines-structure, functions 2. Nucleosides, Nucleotides-structure, functions 3. Nucleoside derivatives 4. Biologically important nucleotides and synthetic nucleotides 5. Metabolism of Purines: Sources of carbon atoms of purine ring, de novo synthesis, salvage pathway 6. Metabolism of pyrimidines: Sources of carbon atoms of pyrimidine ring, de no synthesis, salvage pathway	2	2		4		
BI6.3		**Describe the common disorders associated with nucleotide metabolism.** 1. Disorders of purine metabolism: Gout: primary, secondary; Lesch-Nyhan syndrome 2. Disorders of pyrimidine metabolism: orotic aciduria			1	1	HI (Physiology	1

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.4		**Discuss the laboratory results of analytes associated with gout & Lesch Nyhan syndrome** 1. Uric acid 2. HGPRTase			1	1	VI (General Medicine)	1
BI6.5		**Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency.** 1. Definition and classification of vitamins 2. Chemistry, structure, sources, metabolism, functions, daily requirement, deficiency disorders and hypervitaminosis of vitamins including thiamine, riboflavin, niacin, pyridoxine, pantothenic acid, biotin, folic acid, vitamin B12, vitamin C, vitamin A, vitamin D, vitamin E, vitamin K	5	2	1	7	VI (General Medicine)	1
BI6.6		**Describe the biochemical processes involved in generation of energy in cells.** 1. Bioenergetics, exergonic and endergonic reactions 2. High and low energy compounds 3. Electron transport chain, shuttle pathways, biological oxidation and oxidative phosphorylation 4. Inhibitors of ETC, uncouplers and their significance 5. Brown adipose tissue and its importance	2			2		
BI6.7		**Describe the processes involved in**	4	2	2	8	VI (General	1

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		maintenance of normal pH, water &electrolyte balance of body fluids and the derangements associated with these. 1. Distribution of body water and its composition in various compartments 2. Distribution of major electrolytes in various compartments of the body 3. Water and electrolyte balance mechanisms 4. Disorders of water and electrolyte balance 5. Acids, bases and buffers 6. Body buffers and their functions 7. Mechanism of acid base balance 8. Disorders of acid base balance					Medicine), HI (Physiology)	
BI6.8		**Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.** 1. Importance of Arterial Blood Gas analysis in acid base disorders and its interpretation 2. Anion gap and its importance		2	2	4	VI (General Medicine)	1
BI6.9		**Describe the functions of various minerals in the body, their metabolism and homeostasis.** 1. Macro and micro minerals 2. Sources, functions, metabolism, regulation and RDA of minerals including sodium, potassium, calcium, phosphorous, chloride, iodine, magnesium, manganese, iron, copper, sulphur, zinc, molybdenum, cobalt, fluoride, selenium, chromium	3	2		5	VI (General Medicine), HI (Physiology)	1

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.10		**Enumerate and describe the disorders associated with mineral metabolism.**	1		1	3	VI (General Medicine)	1
		1. Signs and symptoms, reference ranges and laboratory investigations of disorders associated with minerals including sodium, potassium, calcium, phosphorous, chloride, iodine, magnesium, manganese, iron, copper, sulphur, zinc, molybdenum, cobalt, fluoride, selenium, chromium 2. Heavy metal poisoning and toxicology						
BI6.11		**Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism.**	1		1	1	VI (General Medicine, Pathology), HI (Physiology)	1
		1. Haem – structure, functions of haem and haem containing compounds, biosynthesis and catabolism 2. Bilirubin metabolism 3. Disorders of haem metabolism – porphyrias						
BI6.12		**Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance.**	1		2	3	VI (General Medicine, Pathology)	1

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		1. Structure and functions of haemoglobin and myoglobin 2. Structure function relationship 3. Haemoglobin – major types, structure function relationship, derivatives of haemoglobin (carboxyHb, metHb, glycated Hb), and their importance 4. Molecular basis of haemoglobinopathies including sickle cell anaemia and thalassemias						
BI6.13		**Describe the functions of the kidney, liver,**	2	2	4	8	VI (General	1
		thyroid and adrenal glands. 1. Cell signalling: Introduction of concept of Autocrine, paracrine, juxtacrine, endocrine systems 2. Classification of hormones 3. General Principles of hormonal action 4. Metabolic roles of thyroid and adrenal gland hormones 5. Functions of liver 6. Functions of Kidney					Medicine, Pathology)	
BI6.14		**Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).** 1. Hepatic function tests 2. Renal function tests 3. Thyroid function tests 4. Function tests related to adrenal glands	3	2	2	8	VI (General Medicine, Pathology)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.15		**Describe the abnormalities of kidney, liver, thyroid and adrenal glands** 1. Renal failure 2. Liver dysfunction, jaundice 3. Hyperthyroidism and hypothyroidism 4. Hyper and Hypoadrenalism			2	3	VI (General Medicine, Pathology)	
BI7.1		**Describe the structure and functions of DNA and RNA and outline the cell cycle.** 1. DNA: structural organization 2. RNA: types, structure, functions 3. miRNA: types, function and importance 4. Cell cycle	1		2	3		
BI7.2		**Describe the processes involved in replication & repair of DNA and the transcription & translation mechanisms**	3	1	2	6		
		1. Central dogma of life 2. DNA metabolism: cell cycle and its regulation, replication, inhibitors of replication and its importance 3. DNA repair and defects associated with repair mechanisms DNA mutations: causes, types, consequences 4. RNA metabolism: Tanscription, post-transcriptional modifications, inhibitors of transcription and its importance 5. Protein Biosynthesis: Genetic code, Translation, post-translational modifications, inhibitors of translation and its importance 6. Regulation of gene expression 7. Protein folding						

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI7.3		**Describe gene mutations and basic mechanism of regulation of gene expression** 1. Mutations: types, consequences 2. Regulation of gene expression: concept of operon, induction, repression, gene-amplification, gene switching	1		1	1	VI (Pediatrics)	1
BI7.4		**Describe applications of molecular technologies like recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis.** 1. Genetic engineering and its clinical applications 2. Nucleotide polymorphisms and disease 3. Gene therapy 4. Techniques used in molecular diagnostics: PCR, Blotting techniques, DNA sequencing, RFLP, nanotechnology	1	2	1	4	VI (General medicine, Pediatrics)	
		5. Introduction to Bioinformatics						
BI7.5		**Describe the role of xenobiotics in disease** 1. Metabolism and detoxification of xenobiotics - Phase I and phase II reactions 2. Diseases caused	1			1		
BI7.6		**Describe the anti-oxidant defence systems in the body** 1. Reactive oxygen species 2. Generation of free radicals 3. Normal antioxidant defence mechanisms: enzymatic and non-enzymatic 4. Damage caused by free radicals to biomolecules: lipid peroxidation, protein carbonylation, DNA oxidation	1			1		

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI7.7		**Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.** 1. Role of oxidative stress in cancer: oxidative stress induced DNA damage, mutations 2. Role of oxidative stress in complications of diabetes: oxidative stress induced formation of advanced glycation end products, activation of prtotein kinase C pathway, oxidation of LDL and atherogenesis 3. Role of oxidative stress in atherosclerosis: oxidative stress induced endothelial dysfunction, oxidation of LDL and formation of fatty streak	1	1		2	VI (General medicine, Pathology)	1
BI8.1	**Nutrition**	**Discuss the importance of various dietary components and explain importance of dietary fibre** 1. Major dietary components, calorific value of foods, components of a balanced diet 2. Dietary fibre - sources, RDA, nutritional importance	1			1	VI (General medicine, Pathology, Pediatrics)	1
BI8.2		**Describe the types and causes of protein energy malnutrition and its effects** 1. Nitrogen balance, biological value of proteins 2. Kwashiorkar and Marasmus	1		1	2	VI (General medicine, Pathology, Pediatrics)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI8.3		**Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.** 1. Respiratory coefficient, basal metabolic rate, specific dynamic action 2. Calculation of energy requirements and prescription of diet in health including childhood and adolescence, pregnancy and lactation, and in disease conditions such as diabetes mellitus, chronic kidney disease, and coronary artery disease and prescription of diet			1	1	VI (General medicine)	
BI8.4		**Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity** 1. Indicators of nutritional status including body mass index 2. Overweight and obesity – definition, causes and health risks associated			1	1	VI (General medicine, Pathology)	
BI8.5		**Summarize the nutritional importance of commonly used items of food including fruits and vegetables.(macro-molecules & its**			1	1	VI (Community medicine General medicine,	
		importance) 1. Food pyramid, glycemic index 2. Mutual supplementation of cereals and pulses					Pediatrics)	

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI9.1	**Extracellular matrix**	**List the functions and components of the extracellular matrix (ECM)** 1. ECM proteins: collagen, elastin, fibronectin, laminin, muscle proteins, keratins, actin, myosin, troponins 2. Functions of ECM proteins	1			1		
BI9.2		**Discuss the involvement of ECM components in health and disease.** 1. Biochemistry of ageing 2. Abnormalities of collagen 3. Malignant hyperthermia, muscular dystrophy 4. Cataract 5. Prions and Alzheimer's disease			1	1	VI (General Medicine)	1
BI9.3		**Describe protein targeting & sorting along with its associated disorders.** 1. Signal peptides for protein sorting 2. Defects in protein sorting: Zellweger syndrome, primary hyperoxaluria, cyctic fibrosis, inclusion cell disease	1			1		
BI10.1	**Oncology and Immunity**	**Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis** 1. Cell cycle: regulation, programmed cell death (apoptosis) 2. Abnormal cell growth 3. Biochemical basis of carcinogenesis 4. Oncogenic markers 5. Biochemical basis of cancer therapy:	2	2		4	VI (OBG, General surgery, Pathology)	1

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		alkylating agents, antimetabolites, topoisomerase inhibitors, antibiotics, hormones, receptor blockers, radiotherapy etc (competency) 6. Monoclonal antibodies and their application						
BI10.2		**Describe various biochemical tumor markers and the biochemical basis of cancer therapy** 1. Tumour markers 2. Biochemical basis of cancer therapy: alkylating agents, antimetabolites, topoisomerase inhibitors, antibiotics, hormones, receptor blockers, radiotherapy etc (competency) 3. Monoclonal antibodies and their application			2	2	VI (OBG, General surgery, Pathology)	
BI10.3		**Describe the cellular and humoral components of the immune system & describe the types and structure of antibody** 1. Antigens: concept of epitope, hapten 2. Antibodies: Types, structure, functions 3. Cells of the immune response 4. Cytokines, inflammatory markers, adhesion molecules 5. Cell mediated immunity and humoral immunity	2			2	VI (OBG, General surgery, Pathology)	2

Competency number	Topic	Competency	Lectures (80 hours)	SGT/SDL (30 hours)	CBL/Tutorial (50 hours)	Total (160 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI10.4		**Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses.** 1. Innate and adaptive immunity 2. Induction of immune response and types of immune response 3. Hypersensitivity reactions 4. Immune tolerance and autoimmunity		1	1	2	VI (General medicine, Pathology), HI (Physiology)	
BI10.5		**Describe antigens and concepts involved in vaccine development.** 1. Antigen: properties 2. Concept of vaccine development (competency)					VI (Pathology, Pediatrics, Microbiology)	

TEACHING HOURS:

Theory: 160 hours (80 Lectures+50 Small group teaching/Self directed learning + 30 Case based learning/tutorials)

Practical: 70 hours

Early clinical exposure (ECE): 30 hours (12 hrs clinical skills + 18 hrs Basic science correlation)

TEACHING LEARNING METHODS:

Sr.No	Teaching learning method	No. of hours
1	Lectures	80
2	Small group teaching (SGT)/Self directed learning (SDL)	50
3	Case based learning/Tutorials	30
4	Integrated teaching	20
5	Practicals	70
TOTAL		250 Hours
Early clinical exposure		30 Hours
AETCOM		12 Hours

DIVISION OF SYLLABUS FOR MBBS EXAMS

PAPER – I	PAPER – II
Cell-Molecular & Functional Organization	Protein Chemistry and Metabolism
Extracellular matrix	Integration of metabolism
Carbohydrate Chemistry and Metabolism	Nucleic Acid Chemistry and Metabolism
Lipid Chemistry and Metabolism	Molecular Biology
Enzymes	Functional Tests
Biological Oxidation	Cell-Cell Interactions
Hemoglobin	Endocrine Systems
Mineral Metabolism	Carcinogenesis
Vitamin	Detoxification
Energy metabolism and Nutrition	Immunology
Fluid, Electrolyte and Acid-Base Balance	Clinical Chemistry

PRACTICAL SYLLABUS

No of hours: 70
Part 1: Qualitative Experiments –16hrs
Part 2: Quantitative Experiments – 30hrs
Part 3: Demonstration Experiments – 18 hrs
Part 4: Interpretation experiments-6 hrs

S No.	Name of the practical	Competencies covered	Teaching method	Hours	Assessment method
1	**Basics of Laboratory:** Commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal 1. Specimen collection and processing: collection of blood, urine and other body fluids, types of anticoagulants used, urine preservatives, handling of specimens and transport 2. Preanalytical variation: Biological variation, specimen collection related causes of variation, post collection variation 3. Analytical goals: precision, accuracy, bias, sensitivity and specificity 4. Biological reference intervals of common analytes 5. Basics of automation, quality control programs (internal and external quality control), laboratory information system 6. Critical alerts and its importance 7. Biomedical waste management	**BI11.1**	Lecture	4	Written/ Viva voce
2	**Analysis of normal urine:** Reference ranges of normal constituents in urine and interpretation	**BI11.3**	Lecture & Instructions	4	Written/ Viva voce
3	**Analysis of normal urine**	**BI11.4**	Practicals	4	Skill assessment
4	**Analysis of Abnormal constituents in urine**: Case study (diabetes mellitus, Jaundice, nephrotic syndrome, proteinuria) and interpretation of abnormal constituents in urine	**BI11.4, BI11.17, BI11.20**	Lecture & Instructions, case study	2	Written/ Viva voce
5	**Analysis of Abnormal constituents in urine**	**BI11.4, BI11.20**	Practicals	2	Skill assessment
6	**Principles of colorimetry and spectrophotometry, demonstration of colorimeter**	**BI11.6, BI11.18, BI11.19**	Lecture	2	Written/ Viva voce

7	**Renal function tests (RFT):** Estimation of serum urea, creatinine and creatinine clearance, Reference ranges, Case study (renal failure) and interpretation	**BI11.7, BI11.17, BI11.21, BI11.22**	Lecture & Instructions, case study	2	Written/ Viva voce
8	**Renal function tests (RFT)**: Estimation of serum urea, creatinine and creatinine clearance	**BI11.7, BI11.21, BI11.22**	Practicals	2	Skill assessment
9	**Estimation of serum calcium, phosphorous, uric acid**, Reference ranges, Case study (Gout) interpretation	**BI11.11, BI11.17,**	Lecture & Instructions	2	Written/ Viva voce
10	**Estimation of serum calcium, phosphorous, uric acid**	**BI11.11**	Practicals	4	Skill assessment
11	**Serum Electrolytes:** demonstration of ISE, Case study and interpretation of electrolyte	**BI6.7, BI11.16, BI11.19**	Lecture & Demonstration, Case study	2	Written/ Viva voce
12	**Glucose tolerance test** - Estimation of plasma glucose, Normal GTT, Reference ranges, Case study of GTT (all patterns including diabetes mellitus) and interpretation, demonstration of glucometer	**BI11.17, BI11.21**	Lecture & Instructions, DOAP, Case study	2	Written/ Viva voce
13	**Glucose tolerance test**: Estimation of plasma glucose- GTT (FPG, PP-1 & 2 hr)	**BI11.21**	Practicals	2	Skill assessment
14	**Estimation of serum Lipid profile:** serum total cholesterol, HDL cholesterol, Triglycerides, Reference ranges, Case study (dyslipidemia)and interpretation	**BI11.9, BI11.10, BI11.12, BI11.17,**	Lecture & Instructions	2	Written/ Viva voce
15	**Estimation of serum Lipid profile**: serum total cholesterol, HDL cholesterol, Triglycerides	**BI11.9, BI11.10, BI11.12**	Practicals	2	Skill assessment
16	**Liver function test:** Estimation of serum proteins, albumin, albumin:globulin ratio, Reference ranges, case study (liver diseases) and interpretation	**BI11.8, BI11.17, BI11.21, BI11.22**	Lecture & Instructions	2	Written/ Viva voce
17	**Liver function test:** Estimation of serum proteins, albumin and albumin:globulin ratio	**BI11.8, BI11.21, BI11.22**	Practicals, DOAP	2	Skill assessment
18	**Liver function test:** Estimation of serum bilirubin, SGOT, SGPT, alkaline phosphatase, Reference ranges, case study of types of Jaundice and interpretation	**BI11.12, BI11.13, BI11.14, BI11.17**	Lecture & Instructions	2	Written/ Viva voce
19	**Liver function test:** Estimation of serum bilirubin	**BI11.12**	Practicals	2	Skill assessment

20	**Liver function test:** Estimation of Liver enzymes - SGOT	**BI2.2, BI11.12**	Practicals	2	Skill assessment
21	**Liver function test:** Estimation of Liver enzymes - SGPT	**BI2.2, BI11.12**	Practicals	2	Skill assessment
22	**Liver function test:** Estimation of Liver enzymes - ALP	**BI11.14**	Practicals	2	Skill assessment
23	**CSF analysis:** CSF formation, function, composition, Case study and interpretation	**BI11.15**	Lecture	2	Written/ Viva voce
24	**Screening of urine for inborn errors:** Case study of aminoacidurias, carbohydrate metabolism, Demonstration of paper chromatography, TLC	**BI11.5, BI11.16**	Lecture & Demonstration, Case study	2	Written/ Viva voce
25	**Screening of urine for inborn errors:** Screening of urine for inborn errors - carbohydrate, amino acids, porphyrias & poisoning	**BI11.5**	Practicals	2	Skill assessment
26	**Estimation of pH:** Preparation of buffers, , uses of buffers, demonstration of pH meter	**BI11.2, BI11.19**	Lecture & Demonstration	2	Written/ Viva voce
27	**Serum protein electrophoresis:** Principle, applications, interpretation, demonstration of Serum Protein electrophoresis, Polyacrylamide gel electrophoresis	**BI11.16**	Lecture & Demonstration	4	Written/ Viva voce
28	**ABG analysis:** Case study and interpretation of acid-base disorders, demonstration of ABG analyzer	**BI11.16, BI11.17, BI11.19**	Lecture & Demonstration, case study	2	Written/ Viva voce
29	**Immunoassays:** Principle, applications, interpretation, demonstration of ELISA, Immunodiffusion	**BI11.16**	Lecture & Demonstration	2	Written/ Viva voce
30	**Automation and quality control:** Basics of Autoanalyser and Quality control	**BI11.16, BI11.19**	Demonstration	2	Written/ Viva voce
31	**Isolation of DNA** from blood/,tissue	**BI11.16**	Demonstration	2	Written/ Viva voce
32	**Diet planning and importance of fat in diet:** Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food	**BI11.23, BI11.24**	Small group teaching	2	Written/ Viva voce
	Total hours			70	

EXAMINATION:

i. Assessment methods for Theory (Formative and Summative):

No.	Question	Marks	Total Marks
1.	Long answer questions	2x15	30
2.	Short answer questions	10x5	50
3.	Multiple choice questions	10x2	20
Total :			100rks

ii. Assessment pattern for practicals:

S. No.	Question	Marks	Total Marks
1.	Spotters	5 x1	05
2.	Qualitative	1x25	25
3.	Quantitative	1 x30	30
4.	Interpretation of lab reports	1x20	20
5.	Viva	20	20
Total :			100 Marks

CERTIFICATION OF SKILL ACQUISITION:

To be certified using checklists

Sr No	Competency number: Competency to certified	No. required to certify
1	**BI11.4:** Perform urine analysis to estimate and determine normal constituents	1
2	**BI11.4:** Perform urine analysis to estimate and determine abnormal constituents	1
3	**BI11.20:** Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states	1
4	**BI11.21:** Demonstrate estimation of glucose in plasma	1
5	**BI11.7, BI11.20:** Demonstrate the estimation of serum Creatinine and Creatinine clearance	1
6	**BI11.21:** Demonstrate estimation of urea in serum	1
7	**BI11.7, BI11.21:** Demonstrate estimation of serum protein, albumin and A:G ratio	1

RECOMMENDED BOOKS:

1. Textbook of Biochemistry for Medical students-D.M.Vasudevan
2. Biochemistry: U.Satyanarayana
3. Textbook of Medical Biochemistry: Dinesh Puri

REFERENCE BOOKS:

1. Harper’s illustrated Biochemistry: Robert Murray
2. Principals of Biochemistry: Lehninger
3. Biochemistry: Lupert Stryer
4. Biochemistry (Lippincott's Illustrated Reviews)
5. Practical Clinical Biochemistry: Harold Varley

NOTE: Latest editions to be followed

Community Medicine

Topic: Concept of health and disease
Number of Competencies: 6
Number of procedures for certification:
Total number of hours required: 17

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM1.1	Define and describe the concept of Public Health	**K**	**KH**	**Y**	**2 hrs**	
CM 1.2	Define health; describe the concept of holistic health including concept of spiritual health and the relativeness & determinants of health	**K**	**KH**	**Y**	**3 hrs**	
CM 1.3	Describe the characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease	**K**	**KH**	**Y**	**3 hrs**	
CM 1.4	Describe and discuss the natural history of disease	**K**	**KH**	**Y**	**3 hrs**	
CM 1.5	Describe the application of interventions at various levels of prevention	**K**	**KH**	**Y**	**3 hrs**	
CM 1.8	Describe the Demographic profile of India and discuss its impact on health	**K**	**KH**	**y**	**3 hrs**	

SPECIFIC LEARNING OBJECTIVES (SLO's)			
TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, small group discussion		**Written, Viva voce**	

Topic: Relationship of social and behavioral sciences to health and disease

Number of Competencies: 2

Number of procedures for certification:

Total number of hours required: 4

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 2.1	Describe the steps and perform clinico socio-cultural and demographic assessment of the individual, family and community	**S**	**SH**	**Y**	2 hrs	
CM 2.2	Describe the socio-cultural factors, family (types), its role in health and disease & demonstrate in a simulated environment the correct assessment of socio-economic status	**S**	**SH**	Y	2 hrs	

SPECIFIC LEARNING OBJECTIVES (SLO's)

TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion		Written / Viva voce	

Topic: Environmental Health Problems

Number of Competencies: 1

Number of procedures for certification:

Total number of hours required: 4

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 3.1	Describe the health hazards of air, water, noise, radiation and pollution	**K**	**KH**	**Y**	**4 hours**	

SPECIFIC LEARNING OBJECTIVES (SLO's)

TEACHING AND LEARNING		ASSESSMENT METHODS	
Teaching methods		Assessment method	
Theory	Practical	Theory	Practical
Lecture, Small Group Discussion		Written examination, Viva voce	

Topic: Nutrition

Number of Competencies: 2

Number of procedures for certification:

Total number of hours required: 5

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 5.1	Describe the common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions	**K**	**KH**	**Y**	**3**	
CM 5.2	Describe and demonstrate the correct method of performing a nutritional assessment of individuals, families and the community by using the appropriate method	**S**	**SH**	**Y**	**2**	

SPECIFIC LEARNING OBJECTIVES (SLO's)			
TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion DOAP sessions		**Written, Viva voce**	**Skill assessment**

Topic: Health Education

Number of Competencies:2

Number of procedures for certification:

Total number of hours required: 5

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 4.1	Describe various methods of health education with their advantages and limitations	**K**	**KH**	**Y**	**3**	
CM 4.2	Describe the methods of organizing health promotion and education and counselling activities at individual family and community settings	**K**	**KH**	**Y**	**2**	

SPECIFIC LEARNING OBJECTIVES (SLO's)

TEACHING AND LEARNING		ASSESSMENT METHODS	
Teaching methods		Assessment method	
Theory	Practical	Theory	Practical
Lecture, Small Group Discussion		Written, Viva voce	

Topic: Hospital Waste Management

Number of Competencies: 3

Number of procedures for certification:

Total number of hours required: 5

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 14.1	Define and classify hospital waste	**K**	**KH**	**Y**	**2**	
CM 14.2	Describe various methods of treatment of hospital waste	**K**	**KH**	**Y**	**2**	
CM 14.3	Describe laws related to hospital waste management	**K**	**KH**	**Y**	**1**	

SPECIFIC LEARNING OBJECTIVES (SLO's)			
TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion, visit to hospital		**Written, Viva voce**	

Topic: Health care of the Community

Number of Competencies: 4

Number of procedures for certification:

Total number of hours required: 12

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 17.1	Define and describe the concept of health care to community	**K**	**KH**	**Y**	**3**	
CM 17.2	Describe community diagnosis	**K**	**KH**	**Y**	**3**	
CM 17.4	Describe National policies related to health and health planning and millennium development goals	**K**	**KH**	**Y**	**3**	
CM 17.5	Describe Health Care Delivery in India	**K**	**KH**	**Y**	**3**	
SPECIFIC LEARNING OBJECTIVES (SLO's)						

TEACHING AND LEARNING		ASSESSMENT METHODS	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion		**Written and viva voce**	

***** One internal assessment in 1st year MBBS, in formative assessment pattern, as per MCI guidelines.

SVIMS UNIVERSITY

(A University established by an act of A.P State Legislature)

TIRUPATI

MBBS
PHASE - I

SVIMS - SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
LOG BOOK

Name of the Student:

Academic Year :

INDEX

BONAFIDE CERTIFICATE

This is to certify that this log book is the bonafide record of Ms……..whose particulars along is given above. Her log of competencies acquired, are as noted in the entries in this log book as per the Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2018, during the period ……..to……..

Signature with date

Head, Department of Anatomy:

Head, Department of Physiology:

Head, Department of Biochemistry:

Principal/Dean :

BASIC PROFORMA OF THE STUDENT

Photo

PARTICULARS OF THE STUDENT:

Name of the student:

Date of Birth :

Father's name :

Mother's name :

Address :

Contact no :

Email id :

Signature: .....

GUIDELINES FOR LOG BOOK:
GENERAL INFORMATION:

1. The log book is a record of the academic / non-academic activities of the student.
2. Each medical student is responsible for maintaining their logbook.
3. Entries in the log book will be in accordance with activities done in the pre-clinical departments.
4. Some sections of the logbook are subject specific and have to be scrutinized by the head of the concerned department
5. It is the responsibility of the student to enter their activity in respective pages and get them duly signed by the supervising faculty.
6. The log book shall be kept as record work of the candidate for that department /specialty and be submitted to department as a Bonafide record of the candidate before appearing for the university examination.

Anatomy

Format for assessing professionalism

Quarter	Overall attendance (5)	Timely submission of record books (5)	complete the record book (5)	Behaves respectfully with peers and teachers (5)	Total (20)	Date	Signature of student	Signature of mentor
1st								
2nd								
3rd								

Guidelines for scoring (to be shown to the student and discussed with them)

Attendance – 95-100% - 5; 90-94% - 4; 85-89% - 3; 80-84% - 2

Timely submission of records – Always submits the record on time – 5; Often submits the record on time – 4; Sometimes submits the record on time – 3; Rarely submits the record on time – 2

Completes the record - Diagrams are neatly drawn with complete labelling – 5; Diagrams are of above average quality with nearly complete labelling – 4; Diagrams are of average quality with partial labelling- 3; Diagrams are of below average quality with inadequate labelling – 2

Behaves respectfully with peers and teachers – Always speaks politely and demonstrates the appropriate body language with peers and teachers – 5; Often speaks politely and demonstrates the appropriate body language with peers and teachers – 4; Sometimes speaks politely and demonstrates the appropriate body language with peers and teachers –3; Rarely speaks politely and demonstrates the appropriate body language with peers and teachers –2;

Format for assessing participation in ECE sessions

Name:……

Date:……..

ECE session…….

1 = strongly disagree 2 = Disagree 3 = no preference 4 = agree. 5 = strongly agree.						
Critical appraisal		**1**	**2**	**3**	**4**	**5**
1	Clarifies, defines and analyses the problem from the scenario / interaction with patient					
2	Identifies learning objectives					
3	Demonstrates initiative and curiosity					
Utilization of learning resources						
4	Utilises relevant resource materials effectively					
5	Applies knowledge to new situations to solve problems and to reach decisions					
Group work						
6	Organized and prepared for small group sessions					
7	Shares thoughts and opinions with peers actively					
Attitudes and Communication Skills						
8	The oral expression is clear enough to be understood					
9	Provides and accepts constructive feedback					
10	Contributes to group harmony (listens to conflicting opinions and tolerates shortcomings of others)					

Comment:
To describe the strengths and suggested areas for improvement of the reviewed student and to assist him/ her to be a more effective learner.

Format for monitoring academic performance and providing feedback

Sl. No.	Marks obtained		Feedback	Date	Signature of student	Signature of mentor
1.	Test 1					
2.	1st Internal Examination					
	Theory					
	Practical					
3.	Overall 1st quarter marks					
4.	Test 2					
5.	2ndInternal Examination					
	Theory					
	Practical					
6.	Overall 2nd quarter marks					
7.	Test 3					
8.	3rd Internal Examination					
	Theory					
	Practical					
9.	Overall 3rd quarter marks					

Format for monitoring performance in student seminars

SEMINARS

Sl no	Date	Topic	Level of participation [attended/presented]	Remarks if any	Signature of faculty/mentor
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

Certification of Skill Acquisition in Anatomy

S. No.	Code No.	Competency	Certification date	Signature of faculty
1.	AN25.1	Identify, draw and label a slide of trachea and lung		
2.	AN65.1	Identify epithelium under the microscope & describe the various types that correlate to its function		

Practical completion certificate

This is to certify that the prescribed Anatomy practicals for the I MBBS have been performed by the student satisfactorily

Date **Signature of Faculty/Mentor**

Physiology

Format for assessing professionalism

Quarter	Overall attendance (5)	Timely submission of record books (5)	the record book (5)	Behaves respectfully with peers and teachers (5)	Total (20)	Date	Signature of student	Signature of mentor
1st								
2nd								
3rd								

Guidelines for scoring (to be shown to the student and discussed with them)

Attendance – 95-100% - 5; 90-94% - 4; 85-89% - 3; 80-84% - 2

Timely submission of records – Always submits the record on time – 5; Often submits the record on time – 4; Sometimes submits the record on time – 3; Rarely submits the record on time – 2

Completes the record well– Diagrams are neatly drawn with complete labelling – 5; Diagrams are of above average quality with nearly complete labelling – 4; Diagrams are of average quality with partial labelling- 3; Diagrams are of below average quality with inadequate labelling – 2

Behaves respectfully with peers and teachers–Always speaks politely and demonstrates the appropriate body language with peers and teachers – 5; Often speaks politely and demonstrates the appropriate body language with peers and teachers – 4; Sometimes speaks politely and demonstrates the appropriate body language with peers and teachers –3; Rarely speaks politely and demonstrates the appropriate body language with peers and teachers–2;

Format for monitoring academic performance and providing feedback – Internal assessments and formative assessments

Assessment	Marks	Feedback of faculty/mentor		Date	Signature Of student	Signature Of mentor
		Positive points	Points that could be improved			
I Internal assessment						
Theory paper **Practical + viva**						
Formative assessment part I						
Theory: (System reviews) **Practical:** • **Practical record completion** • **Early clinical exposure** • **Skill certification**						
II Internal assessment						
Theory paper **Practicals + viva**						
Formative assessment part II						
Theory: (System reviews) **Practicals:** • **Practical record completion** • **Early clinical exposure** • **Skill certification**						

Third Internal assessment						
Theory paper **Practicals + viva**						
Formative assessment part III						
Theory: (System reviews) **Practicals:** • **Practical record completion** • **Early clinical exposure** • **Skill certification**						

Format for monitoring performance in student seminars

SEMINARS

Sl no	Date	Topic	Level of participation [attended/presented]	Remarks if any	Signature of faculty/mentor

Format for Certification of skills

(Note: the skill checklists are to be used as a guide for evaluation could be a part of the practical record book and a documentation of the same could be kept in the department. The following is for logbook entry of confirming the completion of skill certifications)

Sl No	Date	Skill	Date of certification	Signature of Observer
1		Record blood pressure & pulse at rest		
2		Effect of posture on blood pressure and pulse rate (supine to standing posture)		
3		Effect of different grades of exercise on blood pressure and pulse rate		
4		Demonstrate the correct clinical examination of the respiratory system		
5		Demonstrate the correct clinical examination of the Higher mental functions		
6		Demonstrate the correct clinical examination of sensory system		
7		Demonstrate the correct clinical examination of motor system		
8		Demonstrate the correct clinical examination of reflexes		
9		Demonstrate the correct clinical examination of cranial nerves		
10		Demonstrate clinical examination of Testing of visual acuity, colour and field of vision		
11		Demonstrate the correct clinical examination of hearing		
12		Demonstrate the correct clinical examination of Testing for smell		
13		Demonstrate the correct clinical examination of taste sensation		

Format for Early clinical exposures and related activities

Sl No	Date of visit	Title of the visit	Signature of the mentor

Format for AETCOM

Date	Topic	Signature of the mentor

Documentation and feedback for self-directed learning

Sl no	Date	Topic	Feedback	Signature of faculty/mentor

Practical completion certificate

This is to certify that the prescribed Physiology practicals for the I MBBS have been performed by the student satisfactorily

Date **Signature of Faculty/ Mentor**

Biochemistry

a. Format for monitoring academic performance and providing feedback

Sl. No.	Marks obtained		Feedback	Date	Signature of student	Signature of mentor
1.	Test 1					
2.	1st Internal Examination					
	Theory					
	Practical					
3.	Overall 1st quarter marks					
4.	Test 2					
5.	2ndInternal Examination					
	Theory					
	Practical					
6.	Overall 2nd quarter marks					
7.	Test 3					
8.	3rd Internal Examination					
	Theory					
	Practical					
9.	Overall 3rd quarter marks					

b. Format for assessing Professionalism

Quarter	Overall attendance (5)	Timely submission of record books (5)	The record book (5)	Behaves respectfully with peers and teachers (5)	Total (20)	Date	Signature of student	Signature of mentor
1st								
2nd								
3rd								

Guidelines for scoring (to be shown to the student and discussed with them)

Attendance – 95-100% - 5; 90-94% - 4; 85-89% - 3; 80-84% - 2

Timely submission of records – Always submits the record on time – 5; Often submits the record on time – 4; Sometimes submits the record on time – 3; Rarely submits the record on time – 2

Completes the record – Excellent: Presentation of content above expectations – 5; Good: Presentation of content meets expectations – 3; Needs Improvement: Presentation of content below expectations -1.Content: Includes Tables, Charts, Diagrams, Calculations etc.

Behaves respectfully with peers and teachers–Always speaks politely and demonstrates the appropriate body language with peers and teachers – 5; Often speaks politely and demonstrates the appropriate body language with peers and teachers – 4; Sometimes speaks politely and demonstrates the appropriate body language with peers and teachers –3; Rarely speaks politely and demonstrates the appropriate body language with peers and teachers–2;

SEMINARS

Sl no	Date	Topic	Level of participation [attended/ presented]	Remarks if any	Signature of faculty/ mentor
1.					
2.					
3.					
4.					
5.					

c. Format for participation in EARLY CLINICAL EXPOSURE

Name of the Facilitator:

ECE session No: **Area/Specialty visited:**

Clinical Skills (Concepts learnt during ECE sessions):

Objectives

1.

2.

3.

1. Briefly describe what you learnt from this clinical visit in relation to the objectives. (in 100-150words)

2. A part from the above learning, what did you observe that influenced (Positive/ negative) you? (in 100-150words)

Signature of Facilitator

**Scoring pattern can be decided by SVIMS-SPMCW*

d. Format for SELF DIRECTED LEARNING Topics

(Minimum one entry per term)

Name of the Facilitator:

SDL Topic:

SUMMARY OF CONCEPTS LEARNT (Concept map):

Signature of Facilitator

**Scoring pattern can be decided by SVIMS-SPMCW*

CERTIFICATION OF SKILL ACQUISITION INBIOCHEMISTRY

SL. NO	COMPETENCY NO	TOPIC	CERTIFICATION DATE	SIGNATURE OF FACULTY
1.	BI11.4	Perform urine analysis to estimate and determine normal and abnormal Constituents		
2.	BI11.20	Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states.		
3.	BI11.21	Demonstrate estimation of glucose		
4.	BI11.21	Demonstrate estimation of urea		
5.	BI11.7/ BI11.21	Demonstrate estimation of serum creatinine and creatinine clearance		
6.	BI11.8/BI11.21	Demonstrate estimation of serum total proteins, albumin & A:G ratio		

Certification of Competencies - Skill Acquisition

Format for checklist General Guidelines

(All checklists for skill certification need not be essentially a part of log book. They should be used as a guide for evaluation)

Sl No	Assessment criteria	Date of each evaluation*		
	Overall performance (A/B/C)			
	Name of Evaluator			
	Signature of evaluator			

Competency Description:

*Number columns as per requirement

Each criteria may be assessed by different tools (OSPE/Practical/viva) using appropriate scoring pattern.

Marking of each assessment criteria **√ if student meets the expectation for each criteria**
X if student does not meet the expectation for each criteria

Overall Performance in these assessments can be graded as below:

- **Meets expectations(ME)**
  A: Student is able to perform all the test and report the test results with appropriate interpretations independently and can be certified
- **Does not meet expectations (DME)** -
  Student needs further training to perform and report the test results with appropriate interpretations independently and are evaluation to certify the same.
  B: > than 50% of criteria meets expectation, reevaluation needed only for criteria which have not met the expectation.
  C: < than 50% of criteria meets expectation, reevaluation needed for the entire competency

Feedback to students: After each assessment, the respective faculty to give the feedback to students regards the areas for improvement/ reassessment

Checklist 1:
Description of competency: Perform urine analysis to estimate and determine normal constituents (BI 11.4)

Sl No	Assessment criteria	Date of evaluation		
1	Student is able to list all physical characteristics of normal urine			
2	Student is able to perform the physical examination of urine sample for Volume, appearance, colour, odour, pH and specific gravity			
3	Student is able to interpret the results of all the above physical examination of urine sample			
4	Student is able to list common organic constituents (Urea, Uric acid, Creatinine, Urobilinogen) of normal urine and the tests to be performed			
5	Student is able to explain the principles of all organic tests performed for normal constituents of urine			
6	Student is able to perform relevant tests for organic constituents of urine according to the procedure given			
7	Student is able to interpret the results of all the tests for organic constituents of normal urine along with normal levels in urine			
8	Student is able to list common inorganic constituents (Calcium, Phosphate, Ammonia) of normal urine and the tests to be performed			
9	Student is able to explain the principles of all organic tests performed for normal constituents of urine			
10	Student is able to perform relevant tests for inorganic constituents of urine according to the procedure given			
11	Student is able to interpret the results of all the tests performed for inorganic constituents of normal urine along with normal levels in urine			
12	Student is able to interpret the physiological and pathological variations in organic and inorganic constituents of urine			
	Overall performance (A/B/C)			
	Appropriate feedback given to student (yes/No)			
	Name of Evaluator			
	Signature of evaluator			
	Signature of student			

It is hereby certified that the student is competent to perform the above mentioned skill

Date of certification:

Name and Signature of Evaluator:

Checklist 2

Description of competency: Perform urine analysis to determine Abnormal constituents, interpret the findings and correlate with pathological states (BI 11.4 and BI 11.20)

Sl No	Assessment criteria	Date of evaluation		
1	Student is able to list the common abnormal constituents of urine (reducing substance, ketone bodies, proteins, blood, bile salts, bile pigments)			
2	Student is able to perform the physical examination of abnormal urine sample for Volume, appearance, colour, odour, pH and specific gravity			
3	Student is able to interpret the results of all the above physical examination of urine sample in different pathological conditions			
4	Student is able to list the relevant chemical tests to be performed to detect abnormal constituents of urine			
5	Student is able to explain the principles of all the chemical tests correctly			
6	Student is able to perform all the chemical tests correctly according to the procedure given			
7	Student is able to interpret the observations of all the tests as positive or negative correctly			
8	Student is able to explain the biochemical basis of combination of positive findings on physical examination and chemical analysis of given abnormal urine sample			
9	Student is able to interpret and associate various abnormal physical findings with different pathological conditions			
10	Student is able to interpret and associate various abnormal constituents with different pathological conditions			
	Overall performance (A/B/C)			
	Appropriate feedback given to student (yes/No)			
	Name of Evaluator			
	Signature of evaluator			
	Signature of student			

It is hereby certified that the student is competent to perform the above-mentioned skill

Date of certification:

Name and Signature of Evaluator:

Checklist 3

Description of competency: Demonstrate estimation of Glucose in serum (BI 11.21)

Sl No	Assessment criteria	Date of evaluation		
1	Student is able to explain the Principle of the given method of estimation of Glucose			
2	Student is able to mention other methods for estimation with advantages and disadvantages			
3	Student is able to perform the estimation of Serum glucose in given sample according to the given procedure correctly			
4	Student is able to calculate the concentration of the given analyte using the appropriate formula.			
5	Student is able to write the report of the given test requested correctly with appropriate units and reference intervals			
6	Student is able to mention the preanalytical errors that could affect the test result			
7	Student is able to mention the right collection tube and right time for collecting fasting and post prandial samples			
8	Student is able to interpret the report of the given sample according to current standard guidelines using biological reference intervals of fasting, postprandial and random glucose.			
9	Student is able to relate the findings of estimation performed with clinical condition appropriately			
10	Student is able to extrapolate the results of serum glucose in different clinical conditions appropriately			
	Overall performance (A/B/C)			
	Appropriate feedback given to student (yes/No)			
	Name of Evaluator			
	Signature of evaluator			
	Signature of student			

It is hereby certified that the student is competent to perform the above-mentioned skill

Date of certification:

Name and Signature of Evaluator:

Checklist 4

Description of competency: Demonstrate estimation of serum creatinine and create nine clearance (BI 11.7, BI 11.21)

Sl No	Assessment criteria	Date of evaluation		
1	Student is able to explain the Principle of the given method of estimation of Serum Creatinine			
2	Student is able to mention other methods for estimation with advantages and disadvantages			
3	Student is able to perform the estimation of Serum Creatinine in given sample according to the given procedure correctly			
4	Student is able to calculate the concentration of the given analyte using the appropriate formula.			
5	Student is able to write the report of the given test requested correctly with appropriate units, reference intervals and interpret the result correctly.			
6	Student is able to mention the non-Creatinine interferences that could affect the test result			
7	Student is able to calculate Creatinine clearance using appropriate formula correctly and interpret the results			
8	Student is able to mention the indications for Creatinine clearance and its advantages.			
9	Student is able to calculate estimated Creatinine clearance using different formulae, different urine Creatinine ratios with their advantages.			
10	Student is able to explain the biochemical basis of altered levels of Creatinine in serum and urine in different pathological conditions			
	Overall performance (A/B/C)			
	Appropriate feedback given to student (yes/No)			
	Name of Evaluator			
	Signature of evaluator			
	Signature of student			

It is hereby certified that the student is competent to perform the above-mentioned skill

Date of certification:

Name and Signature of Evaluator:

Checklist 5

Description of competency: Demonstrate estimation of urea in serum (BI 11.21)

Sl No	Assessment criteria	Date of evaluation		
1	Student is able to explain the Principle of the given method of estimation of Serum Urea			
2	Student is able to mention other methods for estimation with advantages and disadvantages			
3	Student is able to perform the estimation of Serum Urea in given sample according to the given procedure correctly			
4	Student is able to calculate the concentration of the given analyte using the appropriate formula.			
5	Student is able to write the report of the given test requested correctly with appropriate units and reference intervals			
6	Student is able to mention the preanalytical errors/ interferences that could affect the test result			
7	Student is able to calculate Blood urea nitrogen and explain its importance			
8	Student is able to enumerate various pre renal, renal and post renal causes for Uremia			
9	Student is able to relate the findings of estimation performed with clinical condition appropriately			
10	Student is able to extrapolate the results of serum urea in different clinical conditions appropriately			
	Overall performance (A/B/C)			
	Appropriate feedback given to student (yes/No)			
	Name of Evaluator			
	Signature of evaluator			
	Signature of student			

It is hereby certified that the student is competent to perform the above mentioned skill

Date of certification:

Name and Signature of Evaluator:

Checklist 6

Description of competency: Demonstrate estimation of serum protein, albumin and A:G ratio(BI 11.8, BI 11.21)

Sl No	Assessment criteria	Date of evaluation		
1	Student is able to explain the Principle of the given method of estimation of Serum Total Protein and Serum Albumin			
2	Student is able to perform the estimation of Serum Total Protein and Serum Albumin in given sample according to the given procedure correctly			
3	Student is able to calculate the concentration of the given analyte using the appropriate formula.			
4	Student is able to calculate Total globulin level and A:G ratio correctly			
5	Student is able to write the report of the given test requested correctly with appropriate units and reference intervals			
6	Student is able to enumerate and explain the causes for Hypoproteinemia/ Hypoalbuminemia correctly			
7	Student is able to enumerate and explain the causes of Hyperproteinemia correctly			
8	Student is able to enumerate and explain the causes of reversed A:G ratio correctly			
9	Student is able to relate the findings of estimation performed with clinical condition appropriately			
10	Student is able to extrapolate the results of serum total protein and serum albumin in different clinical conditions appropriately			
	Overall performance (A/B/C)			
	Appropriate feedback given to student (yes/No)			
	Name of Evaluator			
	Signature of evaluator			
	Signature of student			

It is hereby certified that the student is competent to perform the above mentioned skill

Date of certification:

Name and Signature of Evaluator:

Practical completion certificate

This is to certify that the prescribed Physiology practicals for the I MBBS have been performed by the student satisfactorily

Date **Signature of Faculty/Mentor**

Other academic/non-academic activities

CONFERENCE/CME/WORKSHOP ATTENDED

SL NO	DATE	PARTICULARS	REMARKS IF ANY	SIGNATURE OF STAFF

SCIENTIFIC PROJECT PRESENTATIONS/REPORTS/ OUTREACH ACTIVITIES

SL NO	DATE	PARTICULARS	SIGNATURE OF STAFF

ACHIEVEMENTS/ AWARDS /ANY OTHER ACTIVITIES

SL NO	DATE	PARTICULARS	SIGNATURE OF FACULTY

EXTRA CURRICULAR ACTIVITIES

S. NO	DATE	PARTICULARS	SIGNATURE OF FACULTY

SVIMS- SRI PADMVATHI MEDICAL COLLEGE FOR WOMEN::TIRUPATI

Minutes of the 2nd Board of Studies (1st MBBS) Meeting held at College Council Hall, SVIMS-SPMCW on 29.06.2020 from 11 AM onwards.

The following Members are attended the Meeting:

1. Dr. M.Hanumantha Rao
   Dean, Senior Professor,
   Dept. of Anesthesiology
   SVIMS, Tirupati
   - Chairman
2. Dr. M.Sharan B Singh
   Principal I/c
   SVIMS-SPMC(W), Tirupati
   - Member Secretary
3. Registrar
   SVIMS, Tirupati
   - Member
4. Controller of Examinations
   SVIMS, Tirupati
   - Member

Subject experts for Anatomy:

5. Dr. C. Sreekanth
   Assoc. Professor & HoD i/c
   Dept. of Anatomy, SVIMS-SPMCW, Tirupati
   - Member
6. Dr. T. Jayachandra Pillai,
   Professor & Head of Anatomy,
   SVMC, Tirupati
   - External expert
7. Dr.Mutyalapati Venkata ramulu
   Associate Professor of Anatomy
   Apollo Institute of Medical Sciences & Research, Chittoor
   - External expert

Subject experts for Biochemistry:

8. Dr. P.V.L.N. Srinivasa Rao
   Senior Professor & HoD
   Dept. of Biochemistry
   SVIMS, Tirupati
   - Member
9. Dr. Madhavi Kondeti
   Professor & HoD, Dept. of Biochemistry,
   S.V. Medical College, Tirupati.
   - External expert
10. Dr.Tirumalasetty Ranga Rao
    Professor & HoD, Dept. of Biochemistry
    Apollo Institute of Medical Sciences & Research, Chittoor
    - External expert

Subject experts for Physiology:

11. Dr. M.Sharan B Singh
    Professor & HoD, Dept. of Physiology,
    SVIMS-SPMCW, Tirupati
    - Member
12. Dr. Venkatachalam
    Professor & HoD, Dept. of Physiology,
    SVMC, Tirupati
    - External expert

13. Dr.K.N.Maruthy, - External expert
Professor & HoD, Dept. of Physiology,
Narayana Medical College, Nellore.

Subject experts for Community Medicine:

14. Dr. K.Nagaraj - Member
Professor & HoD,
Dept. of Community Medicine
SVIMS, SPMC(W), Tirupati

15. Dr. G.Ravi Prabhu - External expert
Professor & HoD,
Dept. of Community Medicine
S.V. Medical College, Tirupati

16. Dr. Nagoor Khader Valli, - External expert
Professor & HoD I/c,
Dept. of Community Medicine
Apollo Institute of Medical Sciences & Research,
Chittoor.

At the outset, the Chairman of the 2nd Board of Studies (1st MBBS) of SVIMS-SPMCW has extended a warm welcome to all the faculty members and subject experts who attended the meeting and given permission to 1. Dr.Tirumalasetty Ranga Rao 2. Dr. K.N.Maruthy & 3. Dr. Nagoor Khader Valli to attend the meeting through Video Conference (via Zoom Pro with Meeting Id: 6534352039 & pw:88442)

I. Agenda on New Regulations:

1. New Regulations and teaching approach as per CBME of MCI: **Approved**
2. Duration of the course: **Approved**
3. Promotion: **Approved**
4. Attendance: **Approved**
5. Internal Assessment: **Approved and suggested**
   - Dean, SVIMS suggested to mention No negative marks for MCQ's – in question paper pattern.
   - The Time limit for MCQ'S for 20 minutes of the total duration of 3 hours
6. Re-Admission after discontinuation of study: **Approved**
7. Vacation: **Approved**
8. Compulsory internship: **Approved**
9. Award of degree: **Approved**
10. Classification of results: **Approved**
11. Pattern/Scheme of University Examination: **Approved**
12. Model Question papers: **Approved**
13. Student Log Book: **Approved**

II. Agenda on Syllabus of 1st MBBS:

1. **ANATOMY** **Approved**

2. **BIOCHEMISTRY** **Approved and suggested the following changes**

The external experts Dr. Dr. Madhavi Kondeti & Dr. Tirumalasetty Ranga Rao Suggested modifications in the marks distribution of the university practical examination. The marks for quantitative experiment to be reduced to 30 instead of 40 members and the marks for the interpretations to be increased to 20 instead of 10 marks.

3. **PHYSIOLOGY** **Approved**

4. COMMUNITY MEDICINE — **Approved and suggested the Following change**

one internal assessment for Community Medicine, in formative assessment pattern, as per MCI guidelines.

5. Agenda on the Format of the Student Log Book: **Approved and suggested the following changes**

1. Reverse the orders (1-5) in the format for assessing participation in ECE sessions.
2. Feedback provided (positive/could be improved) should be replaced with feedback in the format for monitoring academic performance and providing feedback in all the departments.
3. Change the sentence " instead of takes the trouble completes the record well" to " completes the record well".
4. Certification of two skills to be added in the Anatomy part in log book.

N. Khadervali 29/06/2020
Dr. Nagoor Khader Valli,
Professor, Dept. of Community medicine
Apollo Institute of Medical Sciences & Research, Chittoor.

29.06.20
Dr. G. Ravi Prabhu
Professor & Head of community medicine
S.V. Medical College, Tirupati

K. Nagaraj 29/6/2020
Dr. K. Nagaraj
Dept. of Community medicine
SVIMS-SPMCW, Tirupati

29/6/2020.
Dr. K.N.Murthy
Professor & Head of Physiology
Narayana Medical College, Nellore.

29/6/20
Dr. Venkatachalam
Professor & Head of Physiology
S.V. Medical College, Tirupati

M. Sharan B Singh 29/6/2020
Dr. M. Sharan B Singh
Professor & HoD
Dept. of Physiology
SVIMS-SPMCW, Tirupati

29/6/2020
Dr. Tirumalasetty Kanga Rao
Professor & Head of Biochemistry
Apollo Institute of Medical Sciences & Research, Chittoor.

29/6/2020
Dr.Madhavi Kondeti
Professor & Head of Biochemistry
S.V. Medical College, Tirupati.

29/6/20
Dr. P.V.L.N. Srinivasa Rao
Sr.Professor & HoD
Dept. of Biochemistry
SVIMS-SPMCW, Tirupati

29/6/2020
Dr. Mutyalapati Venkata ramulu
Associate Professor of Anatomy
Apollo Institute of Medical Sciences & Research, Chittoor.

Dr. T. Jayachandra Pillai
Professor & Head of Anatomy
S.V. Medical College, Tirupati

29/6/2020
Dr. C. Sreekanth
Professor & 30 Di/c
Dept. of Anatomy
SVIMS-SPMCW, Tirupati

29/6/2020
Controller of Examinations
SVIMS, Tirupati

29/6/2020
Registrar
SVIMS, Tirupati

M. Sharan B Singh 29/6/20
Dr. M. Sharan B Singh
Principal, SVIMS-SPMCW,
& Member Secretary

Dr. M. Hanumantha Rao
Dean, SVIMS &
Chairman

SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN

TIRUPATI – 517 507

MBBS COURSE

Agenda of
2nd BOARD OF STUDIES MEETING
for 2nd MBBS COURSE
As per MCI/NMC Regulations on Graduate Medical Education as amended up to 2019
(Applicable for students admitted to First MBBS from Academic Year 2019-20 Onwards)

SVIMS UNIVERSITY
(A University established by an Act of A.P State Legislature)
TIRUPATI

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN

TIRUPATI

MBBS COURSE

2nd Board of Studies Meeting held on **22.02.2021**
for 2nd MBBS Students

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SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES,
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN TIRUPATI

MBBS COURSE

Members for BOS

1. Dr. B. Siddartha Kumar - Chairman
   Dean, SVIMS
   Senior Professor
   Dept. of Medicine
   SVIMS, Tirupati

2. Dr. Sharan B Singh. M - Member Secretary
   Principal I/c
   SVIMS-SPMC(W), Tirupati

3. Dr. K.V. Sreedhar Babu
   Registrar - Member
   SVIMS, Tirupati

4. Dr. V. Suresh
   Controller of Examinations - Member
   SVIMS, Tirupati

5. Dr. K. Umamaheswara Rao - Member
   Professor & HoD
   Dept. of Pharmacology
   SVIMS-SPMCW, Tirupati

6. Dr. V.L.M. Raman - External expert
   Professor of Pharmacology
   ACSR Govt. Medical College
   Nellore

7. Dr.D.Anusha - External expert
   Professor of Pharmacology
   SRMC Medical College
   Chennai

8. Dr. N. Rukmangadha - Member
   Professor & HoD
   Dept. of Pathology
   SVIMS, Tirupati

9. Dr. Anuradha - External expert
   Professor & HoD, Dept. of Pathology
   S.V. Medical College, Tirupati

10. Dr. Sandhya Sundaram - External expert
Professor & HoD, Dept. of Pathology
SRMC & RI, Porur, Chennai

11. HoD i/c, Dept. of Microbiology - Member
SVIMS-SPMCW, Tirupati.

12. Dr. C.H.Srinivasa Rao - External expert
Professor & Head, Dept. of Microbiology
SVMC, Tirupati

13. Dr.R.Eshwar Singh - External expert
Professor, Dept. of Microbiology
Gadag Institute of Medical Sciences
Gadag, Karnataka.

14. Dr. K.Bhaskar Reddy - Member
Professor & HoD, Dept. of Forensic Medicine
SVIMS-SPMCW, Tirupati

15. Dr. Jagadeesh Narayana Reddy - External expert
Professor & Head of Forensic Medicine & Toxicology
Vaidehi Institute of Medical Sciences & Research Centre
Bangalore

16. Dr.S.Phanindra - External expert
Professor & HoD, Dept. of Forensic Medicine,
Narayana Medical College, Nellore

17. Dr. K.Nagaraj - Member
Professor & HoD,
Dept. of Community Medicine
SVIMS, SPMC(W), Tirupati

18. Dr. Pankaj B Shah - External expert
Professor & HoD
Dept. of Community Medicine
SRMC & RI
SRIHER, Chennai

19. Dr. G.Ravi Prabhu - External expert
Professor & HoD of Community Medicine
S.V.Medical College
Tirupati

20. Dr. Alladi Mohan - Member
Senior Professor & HoD
Dept. of Medicine
SVIMS, Tirupati

21. Dr.Kothiwale VA - External expert
Professor of Medicine &
Registrar, KAHER
Belagavi (Belgaum)

22. Dr. Y.Mutheeswaraiah, - Member
Professor & HoD
Dept. of General Surgery,
SVIMS, SPMC(W), Tirupati

23. Dr. S.Nagamunaiah - External expert
Professor of General Surgery
SVMC, Tirupati

24. Dr. K.Vanaja - Member
Assoc. Professor & HoD I/c
Dept. of OBG
SVIMS, SPMC(W), Tirupati

25. Dr. N. Deepika - External expert
Associate Professor of OBG
MVJ Medical college & Research Hospital,
Hoskote, Bangalore.

PREAMBLE

The undergraduate medical curriculum of the Medical Council of India/NMC is created to ensure that the medical doctor who emerges from the MBBS training program is capable of assisting the nation to achieve its goal of health for all. In addition, it aspires to ensure that the "graduate" meets or exceeds global bench-mark in knowledge, attitude, skills and communication. This intent is at the core of the Graduate Medical Regulations, 2019.

The Graduate Medical Regulations, 2019 represents the first major revision to the medical curriculum since 1997 and hence incorporates changes in science and thought over two decades. A significant advance is the development of global competencies and subject-wise outcomes that define the roles of the "Indian Medical Graduate". Learning and assessment strategies have been outlined that will allow the student to achieve these competencies/outcomes. Effective appropriate and empathetic communication, skill acquisition, student-doctor method of learning, aligned and integrated learning and assessment are features that have been given additional emphasis in the revised curriculum.

The revised curriculum is to be implemented by all medical colleges under the ambit of Medical Council of India/NMC from August 2019. The roll out will be progressive over the duration of the MBBS course.

This document represents a compilation of the resource material that was used in the Curricular Implementation Support Program (CISP) and has attempted to provide a stepwise and comprehensive approach to implement the curriculum. It details the philosophy and the steps required in a simple and richly illustrated manner. Teaching slide decks, faculty guides and online resource material supplement this document. The document is to be used in conjunction with the Competency document, AETCOM module and the GMR document.

This draft syllabus has been created from the list of competencies mentioned in the Competency Based Curriculum (CBC) developed by the Medical Council of India /NMC for the First MBBS Batch of 2019-20.

The content to be covered under each topic has been mentioned as bulleted points. For each topic, competency numbers have been mentioned as per the competency list mentioned above. The content that is related to non-core competencies (these competencies need not be assessed in the summative examination) have been marked by an asterisk (*).

Guidelines have been suggested for the various teaching and learning (TL) methods along with the time allotted for them in the curriculum. Relevant information has also been provided about the recent additions in the CBC, namely integration, early clinical exposure (ECE), self directed learning (SDL), the AETCOM (attitude ethics and communication skills) modules and electives. Regardless of the TL methods that are used, it is expected that they follow adult learning principles. The regulations related to the internal examination and university examination have been mentioned along with detailed suggestions for the conduct of the theory, practical and viva voce examinations. The document ends with a list of learning resources that both the students and teachers can utilize.

NEW REGULATIONS FOR MBBS DEGREE COURSE

SECTION I

Introduction to CBME based curriculum:

The Medical Council of India /NMC has revised the undergraduate medical education curriculum so that the Indian Medical Graduate is able to recognize ″health for all″ as a national goal and should be able to fulfil her societal obligations. The revised curriculum has attempted to enunciate the competencies the student must be imparted and should have learnt, with clearly defined teaching learning strategies and effective methods of assessment. Communicating effectively and sympathetically with patients and their relatives has been visualized as a core area of the revised curriculum. These and other goals identified in the curriculum are to be implemented in all medical colleges under the ambit of Medical Council of India/ NMC from August 2019 and to smoothen this process Guidelines have been prepared for its effective implementation. In response to the need for a seamless introduction of the curriculum into the Undergraduate system, all medical colleges need to upgrade the teaching-learning skills of their faculty. Earlier experience with implementation of curricular changes suggests that a carefully managed, sustainable approach is necessary to ensure that every college has access to the new skills and knowledge enunciated in the new curriculum. Faculty training and development thus assumes a key role in the effective implementation and sustenance of the envisaged curricular reforms.

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 student 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 her social obligations towards realization of this goal.

b. Learn every aspect of National policies on health and devote her 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 her position as a member of the health team at the primary, secondary or tertiary levels, using her clinical skills based on history, physical examination and relevant investigations.

B. be competent to practice preventive, promotive, curative, palliative and rehabilitative medicine in respect to the commonly encountered health problems.

C. appreciate rationale for different therapeutic modalities; be familiar with the administration of "essential medicines" and their common adverse effects.

D. be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

E. possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

F. be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:

I. Family Welfare and Maternal and Child Health (MCH)
II. Sanitation and water supply
III. Prevention and control of communicable and non-communicable diseases
IV. Immunization
V. Health Education
VI. Indian Public Health Standards (IPHS), at various levels of service delivery
VII. Bio-medical waste disposal
VIII. Organizational and/or institutional arrangements.

G. acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, hospital management, inventory skills and counseling.

H. be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.

I. be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

J. be competent to work in a variety of health care settings. 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.

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

Goals and Roles for the Student:

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

- Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- Leader and member of the health care team and system with capabilities to collect analyze, synthesize and communicate health data appropriately.
- Communicator with patients, families, colleagues and community.
- Lifelong student committed to continuous improvement of skills and knowledge.
- 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 as listed in clause 2, 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, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral 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 frame works.
- 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:

    I. Disease prevention,
    II. Health promotion and cure,
    III. Pain and distress alleviation, and
    IV. 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 outcomes.
- Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- 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 student 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 listed in sub-clause 2 and 3 above:

- There shall be a "Foundation Course" to orient medical students to MBBS programme, and provide them with requisite knowledge, 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 student's interest and eliminate redundancy and overlap.
- Teaching-learning methods shall be student 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 student 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.

INTEGRATION

Integration is a learning experience that allows the student to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application. It is recommended that the principles of integration be applied to such an extent that the curriculum retains the strengths of subject based education and assessment, while also providing experiences that will allow students to integrate concepts. Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). As far as possible, it is desirable that teaching/learning occurs in each phase through study of organ systems or disease blocks in order to align the learning process. Clinical cases must be used to integrate and link learning across disciplines.

Alignment implies the teaching of subject material that occurs under a particular organ system / disease concept from the same phase in the same time frame i.e., temporally. It is recommended that alignment be the major method to be followed, allowing similar topics in different subjects to be learnt separately but during the same time frame.

Integration implies that concepts in a topic / organ system that are similar, overlapping or redundant are merged into a single teaching session in which subject based demarcations are removed. For the purpose of this document, topics from other phases that are brought into a particular phase for the purpose of reinforcement or introduction will also be considered as integrated topics. A linker is a session that allows the student to link the concepts presented in an aligned topic. In a small proportion (not to exceed 20% of the total curriculum) an attempt can be made to share topics or correlate topics by using an integration or linker session. The integration session most preferred will be a case-based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed.

Care must be taken to ensure that achievement of phase-based objectives is given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary. As much as possible, the necessary correlates from other phases must also be introduced while discussing a topic in a given subject. Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year. Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the student has internalized and integrated the concept and its application.

In summary:

Horizontal integration can be facilitated by the following methods.

- Alignment of timetables of the three first year subjects wherever possible
- Consciously connecting what is learned in one subject with the other subjects during teaching and learning activities
- Joint sessions by all the three departments which may be in the form of lectures, case-based learning or seminars.

Vertical integration can be facilitated by the following methods.

- Discussing relevant clinical case scenarios during teaching and learning sessions
- Guest lectures by clinicians or para-clinical faculty
- Hospital visits to see relevant patient presentations, radiological imaging and operative procedures.

AETCOM MODULE:

The overall goal of undergraduate medical education program as envisaged in the revised Graduate Medical Education Regulations - 2019 is 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. In order to fulfil this goal, the IMG must be able to function appropriately, ethically and effectively in her roles as clinician, leader and member of the health care team and system, communicator, lifelong student and as a professional. In order to effectively fulfil the above-mentioned roles, the IMG must obtain a set of competencies at the time of graduation. In order to ensure that training is in alignment with the goals and competencies, Medical Council of India /NMC has proposed new teaching learning approaches including a structured longitudinal programme on attitude, ethics and communication

Eight AETCOM modules will be taught in second phase and the following departments will be responsible for implementation and assessment of these modules.

- **MODULE 2.1 , 2.3 & 2.8 - COMMUNITY MEDICINE**
- **MODULE 2.2 - FORENSIC MEDICINE**
- **MODULE 2.4 - PATHOLOGY**
- **MODULE 2.5 & 2.6 - PHARMACOLOGY**
- **MODULE 2.7 - MICROBIOLOGY**

GUIDELINES: Reflection writing to be recorded in practical record/log book in each subject

ELECTIVES:

An elective can be defined as a brief course made available to the student during her undergraduate study period, where she can choose from the available options depending upon their interest and career preferences. Introduction of electives in undergraduate medical curriculum is an important step for providing flexible choices in student's areas of interest, direct individual experience and this will help in developing self- directed learning skills. The range of electives that can be offered to the students will depend upon the local logistics and resources available for the medical institutions (within or nearby). These can be in a wide range that can include electives from educational, community and research-project related, directly or indirectly with health care, super- specialty clinical electives and specific laboratory electives.

Method:

- Two months are allotted for elective rotations after completion of the exam at end of the third MBBS Part I examination and before commencement of third MBBS Part II.
- It is compulsory for students to do an elective. The protected time for electives should not be used to make up for missed clinical postings, shortage of attendance or any other purpose.
- The student shall rotate through two elective blocks of 04 weeks each.
- Block 1 shall be done in a pre-selected preclinical or para-clinical or other basic sciences laboratory OR under a faculty researcher in an ongoing research project. During the electives regular clinical postings shall continue.
- Block 2 shall be done in a clinical department (including specialties, super-specialties, ICUs, blood bank and casualty) from a list of electives developed and available in the institution OR as a supervised learning experience at a rural or urban community clinic.
- Institutions will determine the number and nature of electives beforehand, names of the supervisors, and the number of students in each elective based on the local logistics, available resources and faculty.
- Each institution will develop its own mechanism for allocation of electives.
- It is preferable that electives are made available to the students in the beginning of the academic year.
- The student must submit a learning logbook based on both blocks of the elective.
- 75% attendance in the electives and submission of logbook maintained during elective is mandatory for eligibility to appear in the final MBBS examination.
- Students will be assessed in between and at the end of each elective posting.
- Feedback, comments and /or grades about the student's performance by the faculty mentor can be documented with the help of a checklist where both professional and academic attributes can be included.
- The performance of the students in the electives will also contribute towards internal marks.
- Student's feedback about the elective also needs to be documented in a structured format. This will help in gathering student's perceptions about various aspects of elective posting and help in program evaluation.
- Institutions may use part of this time for strengthening basic skill certification. The list of electives offered by the institution must be displayed for students.
- Each elective should have well defined objectives, expected outcomes, expectations from the students, their assessment mechanism and faculty guide or mentors.
- A faculty mentor should guide the student, monitor their learning activities and assess the students' performance with regular feedback.
- Examples of general electives include bioinformatics, tissue engineering / processing, computer and computer applications, genetics, human nutrition, laboratory sciences, research methodology, ethics and medical education.

SECTION II

REGULATIONS GOVERNING MBBS DEGREE COURSE
[Eligibility for Admission, Duration, Attendance and Scheme of Examination]

1. **ELIGIBILITY**
   As per guidelines of Medical Council of India / NMC.

2. **DURATION OF THE COURSE:**
   The duration of the MBBS course shall be 4 ½ academic years followed by one year compulsory rotating internship. Normally the MBBS course shall commence on the 1st Oct of an academic year.

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<tr><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th></tr>
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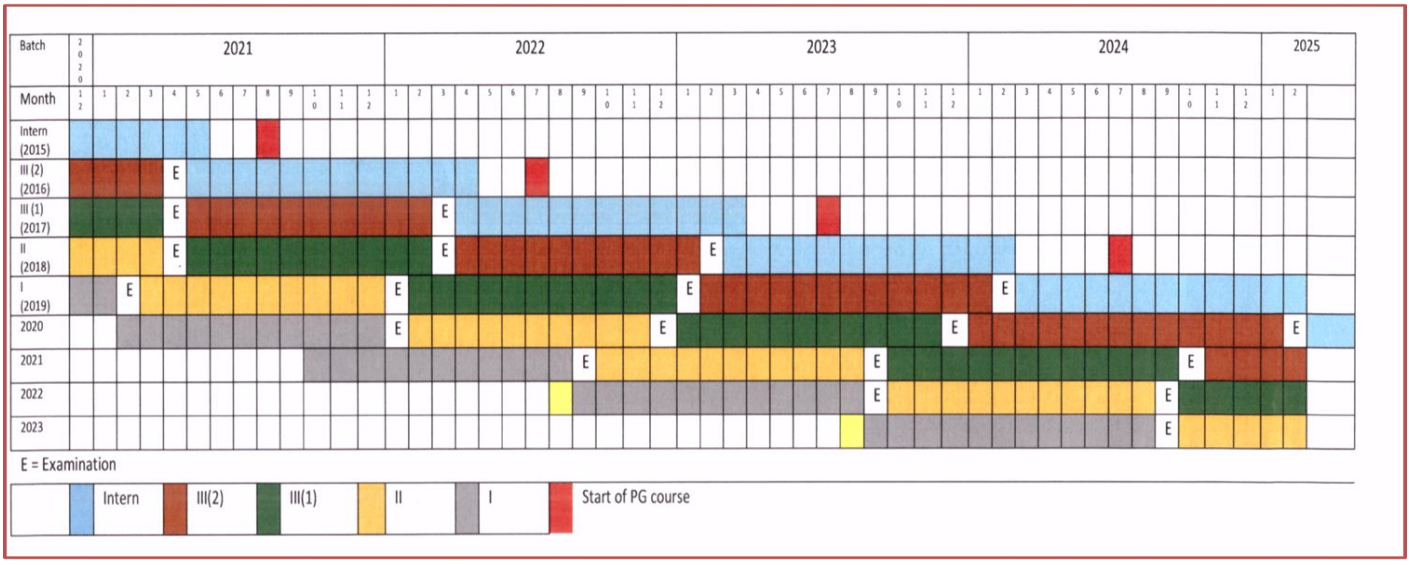
Revised Scheduling of MBBS curriculum from 2021-2024 due to COVID-19 Pandemic.



DISTRIBUTION OF SUBJECTS BY PROFESSONAL PHASE

Phase and Year of MBBS Training	Subjects and new teaching elements	Duration	University examination
First professional MBBS	Foundation course (1month) Human Anatomy, Physiology& Biochemistry Introduction of Community Medicine, Humanities Early Clinical Exposure Attitude. Ethics and Communication Module (AETCOM)	1+13 months	**First professional MBBS**
Second professional MBBS	Pathology, Microbiology, Pharmacology, Forensic Medicine And Toxicology Introduction to clinical subjects including community Medicine Clinical postings AETCOM	12 months	**Second professional MBBS**
Third professional MBBS-part I	General Medicine ,General Surgery, OBG, Paediatrics, Orthopaedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory Medicine, Radiodiagnosis & Radiotherapy, Anaesthesiology Clinical Subjects /postings AETCOM	12 months	**Third professional MBBS-part I**
Electives	Electives ,skills and assessment	2 months	
Third professional MBBS-part II	General Medicine ,Paediatrics, General Surgery, Orthopaedics, Obstetrics and Gynaecology, including Family welfare and allied Specialties Clinical Postings /subjects AETCOM	13 months	**Third professional MBBS-part II**

3. ATTENDANCE:

Every candidate should have attendance not less than 75% of the total classes conducted in theory and not less than 80% of the classes conducted in practical in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examination. 75% attendance in Professional Development Programme (AETCOM Module) is required for eligibility to appear for final examination in each professional year (vide Medical Council of India/NMC Notification on Graduate Medical Education (Amendment) Regulations 2019, published in the Gazette of India Part III, Section 4, Extraordinary issued on 4th November 2019)

- In subjects that are taught in more than one phase – the student 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 e.g., General Surgery and allied branches), the candidate must have 75% attendance in each subject and 80% attendance in each clinical posting.
- Students who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination.

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

2. TEACHING HOURS

Second Professional teaching hours

Subjects	Lecture (hours)	Small group learning (Tutorials / Seminars) /Integrated learning (hours)	Clinical Postings (hours) *	Self - Directed Learning (hours)	Total (hours)
Pathology	80	138	-	12	230
Pharmacology	80	138	-	12	230
Microbiology	70	110	-	10	190
Community Medicine	20	30	-	10	60
Forensic Medicine and Toxicology	15	30	-	5	50
Clinical Subjects	75**	-	540***		615
Attitude, Ethics & Communication Module (AETCOM)		29	-	8	37
Sports and extracurricular activities	-	-	-	28	28
Total	-	-	-	-	1440

* At least 3 hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories. Hours may be distributed weekly or as a block in each posting based on institutional logistics.

** 25 hours each for Medicine, Surgery and Gynecology & Obstetrics.

***The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday).

- Teaching and learning shall be aligned and integrated across specialties both vertically and horizontally for better student comprehension. Student centered learning methods should include problem oriented learning, case studies, community oriented learning, self- directed and experiential learning.

- 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.

Clinical Postings Hours:

Second Professional Clinical postings:

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

*In four of the eight weeks of electives, regular clinical postings shall be accommodated.

Clinical postings may be adjusted within the time framework.

1 This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I).

2 This includes maternity training and family welfare (including Family Planning).

3This posting includes Physical Medicine and Rehabilitation.

4 This posting includes Radiotherapy, wherever available.

5. RE-ADMISSION AFTER DISCONTINUATION OF STUDY:

Every student shall attend her classes (theory, practical and clinical) on all working days unless the leave of absence is sanctioned by the principal/dean. If a student absents continuously for a period of 91 days or more, before one year after discontinuation and seeks permission to attend the course, her application shall be addressed to the dean of the college and shall be forwarded to the registrar while permitting the student to rejoin. The vice-chancellor may grant leave of absence applying such conditions as deemed necessary. Candidates who are absent for continuous period of one year or more without permission shall be deemed to have forfeited the admission and her studentship shall stand cancelled without any further notice.

6. MIGRATION / TRANSFER OF CANDIDATES:

As per MCI/NMC Guidelines

7. VACATION:

The vacation for the students shall be 30 days in each academic year which includes 15 days during summer, one week during Sankranthi and one week during Dussehra, subject to update from NMC.

SCHEME OF EXAMINATION

8. INTERNAL ASSESSMENT:

General guidelines:

- Regular periodic examinations shall be conducted throughout the course. There shall be minimum three internal assessment examinations in each Para-clinical subject and no less than two examinations in each clinical subject in a professional year.
- At end of posting, clinical assessment shall be conducted for each clinical posting, in each professional year
- The third internal examination should be conducted on the lines of the university examination.
- When subjects are taught in more than one phase, the internal assessment must be done in each phase and must contribute proportionately to final assessment. For example, General Medicine must be assessed in second Professional, third Professional Part I and third Professional Part II, independently.
- Out of three internal exams conducted, the marks secured in the Pre-final exams shall be taken into account along with the best among the other internal assessment. Average of these two marks should be calculated and submitted to the university.

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		Formative assessment	
(Part completion tests/	5	Record	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2; 75-79%-1;

Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Example for calculation of internal assessment marks:

Theory :

1st Internal (100)	2nd Internals (100)	Pre-final (100+100)
70	60	70+70
70/100 x 40 (to convert out of 40)=28/40		140/200 x 40(to convert out of 40)=28/40

Among the 1st and 2nd internal assessment marks, best of the two is taken and Pre-final marks is compulsorily taken into account.

28+28/2=28/40 (average of 1st internal assessment marks and pre-final marks)
28+8 (Part completion test + attendance) =36/50
36/ 50(72% - minimum 40% required for eligibility in theory)

Practicals: 22/ 30
Viva: 8/10
Practicals + viva: 22+8= 30/40

30+8 (logbook + Record) = 38/50 (76% - minimum 40% required for eligibility in practicals)
Theory + practical= 36+38 =74/100 (74% - minimum 50%, theory + practical, required for eligibility to appear in University exam)

- Students must secure not less than 40 % marks in theory and practical separately and not less than 50% marks of the total marks (combined in theory and practical) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
- A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial measures by the institution. If she successfully completes the remediation measures, she is eligible to appear for University Examination. Remedial measures shall be completed before submitting the internal assessment marks online to the university.
- Internal assessment marks will reflect under separate head in the marks card of the university examination. The internal assessment marks (theory/practical) will not be added to the marks secured (theory/practical) in the university examination for consideration of pass criteria.
- The results of Internal Assessment should be displayed on the notice board within a 1-2 weeks of the test.
- Students must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

9. UNIVERSITY EXAMINATION

Examination schedule

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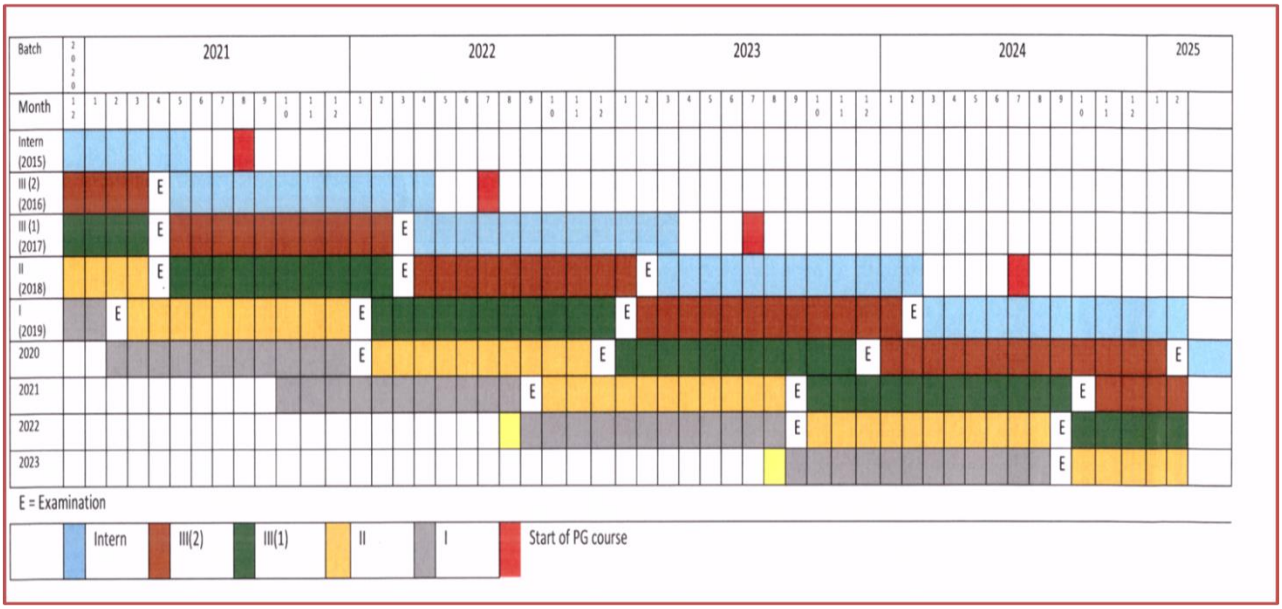

General guidelines:

- University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

- Nature of questions will include different types such as structured essays (Long Answer Questions - LAQ), Short Essays and Short Answers Questions (SAQ) and objective type questions (e.g. Multiple Choice Questions-MCQ). Marks for each part should be indicated separately. MCQs shall be accorded a weight age of not more than 20% of the total theory marks. In subjects that have two papers, the student must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass. There are no negative mark for wrong answer.

- Practical/clinical examinations will be conducted in the laboratories/ hospital wards. The objective will be to assess proficiency and skills to conduct experiments, clinical examination, interpret data and form logical conclusion, wherever applicable.

- There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.

- **A student shall not be entitled to graduate after *10 years of her joining of the first part of the MBBS course.**

- **A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial attendance at any University examination shall be counted as an availed attempt.**

- **SECOND PROFESSIONAL EXAMINATION:**

  The second professional examination shall be held at the end of second professional training (11 months), in the subjects of Pathology, Microbiology and Pharmacology.

Phase II

Table: Examination components, Subjects and Distribution of Marks

THEORY	PATHOLOGY	PHARMACOLOGY	MICROBIOLOGY
Written Paper			
No. of Papers & Maximum Marks for each paper.	**2×100=200**	**2×100=200**	**2×100=200**
Total theory	**200**	**200**	**200**
PRACTICAL			
1. Practical exam	**80**	**80**	**80**
2. Viva-voce	**20**	**20**	**20**
Total practical	**100**	**100**	**100**

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		Formative assessment	
(Part completion tests/	5	Record	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2 83-75%-1 Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Type number of questions and distribution of marks for written paper

TYPES OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
Long essay	**2**	**15**
Short essay	**10**	**5**
MCQs	**20**	**1**

10. SUBMISSION OF LABORATORY/ CLINICAL RECORD

At the time of Practical Examination each candidate shall submit to the Examiners her laboratory record duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

11. ELIGIBILITY TO APPEAR FOR PROFESSIONAL EXAMINATIONS

The following criteria to be met by the students to be eligible for the university exams:

a. Shall have undergone satisfactorily the approved course of study in the subject/subjects for the prescribed duration.
b. Shall have attended not less than 75% of the total classes conducted in theory and not less than 80% of the total classes conducted in practical separately to become eligible to appear for examination in that subject/subjects.
c. Minimum of 40% marks to be obtained **separately** in theory and practical AND atleast 50% marks of the total marks **combined** in theory and practical assigned for internal assessment is to be obtained in a particular subject to appear for university exam.
d. Students must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

12. Appointment of Examiners:

- Person appointed as an examiner in the particular subject must have at least five years of total teaching experience from the date of joining as assistant professor after obtaining postgraduate degree in the subject in a college affiliated to a recognized/approved/permitted medical college.
- For the Practical/ Clinical examinations, there shall be at least four examiners for 100 students, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner will act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained. Where candidates appearing are more than 100, two additional examiners (one external & one internal) for every additional 50 or part there of candidates appearing, be appointed.
- In case of non-availability of medical teachers, approved teachers without a medical degree (engaged in the teaching of MBBS students as whole-time teachers in a recognized medical college), may be appointed examiners in their concerned subjects provided they possess requisite doctorate qualifications and four years teaching experience (as assistant professors) of MBBS students. Provided further that the 50% of the examiners (Internal & External) are from the medical qualification stream.
- External examiners may not be from the same University.
- The internal examiner in a subject shall not accept external examinership for a college from which external examiner is appointed in her subject.
- A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college.
- External examiners shall rotate at an interval of 2 years.
- There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.
- All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.
- All theory paper assessment should be done as central assessment program (CAP) of concerned university.
- Internal examiners should be appointed from same institution for unitary examination in same institution.

For pooled examinations at one centre approved internal examiners from same university may be appointed.

- The grace marks up to a maximum of five marks may be awarded at the discretion of the University to a student for clearing the examination as a whole but not for clearing a subject resulting in exemption.

13. CRITERIA FOR PASS

For declaration of pass in any subject in the University examination, a candidate shall pass both in Theory and Practical examination components separately as stipulated below:

- The Theory component consists of marks obtained in University Written papers only. For a pass in theory, a candidate must secure at least 40% marks in each of the two papers with minimum 50% of marks in aggregate (both papers together).
- For a pass in practical examination, a candidate shall secure not less than 50% marks in aggregate, i.e., marks obtained in university practical examination and viva voce added together.
- **Internal assessment marks will reflect as a separate head of passing at the university examination.**

A candidate not securing 50% marks in aggregate in Theory or Practical examination + viva in a subject shall be declared to have failed in that subject and is required to appear for both Theory and Practical again in the subsequent examination in that subject.

14. DECLARATION OF CLASS

a. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of **grand total marks(university examination)** prescribed will be declared to have passed the examination with distinction.

b. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in First Class.

c. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in Pass Class.

d. A candidate passing a university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by her in the examination.

Note: Please note fraction of marks will not be rounded off for clauses (a), (b) and (c)

15. AWARD OF DEGREE:

The university on satisfactory completion of the compulsory internship shall award the degree.

Department of Pathology

PREAMBLE

Pathology bridges the gap between basic sciences and clinical medicine, so a proper understanding of pathological processes is crucial for medical practice. The main goals of undergraduate pathology teaching have always been to provide a language or framework for the description of disease and to provide students with knowledge of the functional and structural changes in disease so that clinical signs and symptoms can be understood and interpreted. The understanding of the pathological basis of disease is so vital for practice of medicine that its teaching needs to be integrated throughout the medical course.

The new Graduate Medical Education Regulations provides for an outcome driven undergraduate curriculum, to provide the orientation and the skills necessary for life-long learning, to enable proper care of the patient. The undergraduate medical curriculum has thus evolved from being teacher-centered to student centered, from discipline-based to integrated core and options-based and from passive acquisition of knowledge imparted by teachers to active problem-based learning. Skill acquisition is an indispensable component of the learning process in modern medicine. However the need for development of professional attitude, behaviour and communication skills befitting a medical practitioner is well perceived and emphasized by the new curriculum with incorporation of AETCOM sessions.

Pathology teaching is perceived as fact-based, but the present curriculum will evolve pathology into clinical oriented specialty. The key elements of the curriculum such as integrating basic science with clinical oriented learning, direct faculty feedback, interactive with experiential learning and competency-based student assessments will bring in remarkable changes in pathology teaching. These changes will provide the Indian Medical Graduate a strong foundation in the pathophysiological basis of disease which is critical to the formation of a competent clinician.

TABLE OF CONTENTS

GOAL AND OBJECTIVES

GOAL

The broad goal of the teaching of undergraduate student in Pathology is to provide the students with a comprehensive knowledge of the mechanisms and causes of disease, in order to enable him/her to achieve complete understanding of the natural history and clinical manifestations of disease.

OBJECTIVES

a) KNOWLEDGE

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

1. Describe the structure and ultrastructure of a sick cell, mechanisms of cell degeneration, cell death and repair and be able to correlate structuraland functional alterations.
2. Explain the pathophysiological processes which govern the maintenance of homeostasis, mechanisms of their disturbance and the morphological and clinical manifestations associated with it.
3. Describe the mechanisms and patterns of tissue response to injury such that she/he can appreciate the pathophysiology of disease processes and their clinical manifestations.
4. Correlate normal and altered morphology (gross and microscopic) of different organ systems in common diseases to the extent needed for understanding of disease processes and their clinical significance.

b) SKILLS

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

1. Describe the rationale and principles of technical procedures of the diagnostic laboratory tests and interpretation of the results.
2. Perform the simple bed-side tests on blood, urine and other biological fluid samples.
3. Draw a rational scheme of investigations aimed at diagnosing and managing the cases of common disorders.
4. Understand biochemical/physiological disturbances that occur as a result of disease in collaboration with preclinical departments.

c) INTEGRATION

At the end of training he/she should be able to integrate the causes of disease and relationship of different etiological factors (social, economic and environmental) and that contribute to the natural history of diseases most prevalent in India.

TERMS AND TEACHING GUIDELINES

1. LECTURE

Is a teaching learning method which includes traditional and interactive sessions involving a large group

2. SMALL GROUP DISCUSSION

Is an instructional method involving small groups of students in an appropriate learning context.

3. DOAP (Demonstration- Observation - Assistance - Performance)

A practical session that allows the student to observe demonstration, assists the performer, perform in a simulated environment, perform under supervision or perform independently.

4. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning , choosing and implementing appropriate learning methods.

5. SKILL ASSESSMENT

Is a session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know.

MINIMUM TEACHING HOURS

Sl No	Topic	Number of competencies	Lecture	SGD/ Tutorial	DOAP	SDL
1	Introduction to pathology	3	1	2	0	0
2	Cell Injury and Adaptation	8	5	4	4	0
3	Amyloidosis	2	0	2	0	0
4	Inflammation	4	4	2	4	0
5	Healing and repair	1	1	1	0	0
6	Hemodynamic disorders	7	4	2	2	1
7	Neoplastic disorders	5	6	4	4	0
8	Basic diagnostic Cytology	3	0	4	0	0
9	Immunopathology and AIDS	7	5	2	0	0
10	Infections and Infestations	4	1	6	0	1
11	Genetic and Paediatric diseases	3	3	0	0	0

12	Environmental and Nutritional diseases	3	2	0	0	2
13	Introduction to haematology	5	2	0	2	1
14	Microcytic Anaemia	3	1	0	1	0
15	Macrocytic Anaemia	4	1	0	1	0
16	Haemolytic Anaemia	7	3	2	2	0
17	Aplastic anaemia	2	1	0	0	0
18	Leucocytic disorders	2	2	4	2	0
19	Lymph node and spleen	7	1	4	2	0
20	Plasma cell disorder	1	0	2	0	0
21	Haemorrhagic disorders	5	3	2	0	0
22	Blood banking and transfusion	6	2	0	2	0
23	Clinical Pathology	3	0	2	2	0
24	Gastrointestinal Tract	7	4	4	2	0
25	Hepatobiliary system	6	2	4	2	0
26	Respiratory system	7	5	2	2	0
27	Cardiovascular system	10	2	8	2	0
28	Urinary tract	16	4	6	2	1
29	Male genital tract	5	2	0	2	0
30	Female genital tract	9	4	2	2	0
31	Breast	4	2	0	2	0

32	Endocrine system	9	2	4	2	4
33	Bone and soft tissue	5	2	2	2	2
34	Skin	4	1	0	0	0
35	Central Nervous system	3	1	2	2	0
36	Eye	1	-	-	-	-
	Revision at the end of first block (one)	-	-	-	2	-
	Revision at the end of second block (one)	-	-	-	2	-
	Revision at the end of third block (three)	-	-	-	6	-
	Total	**181**	**79**	**79**	**60**	**12**

COMPETENCIES, SPECIFIC LEARNING OBJECTIVES, TEACHING LEARNING AND ASSESSMENT METHODS

Number	COMPETENCY The student should be able to	Domain K/S/A /C	Level K/KH/SH/P	Core (Y/N)	Specific learning objectives (SLO)	Teaching-Learning Methods (TLM)	Assessment Method
TOPIC- INTRODUCTION TO PATHOLOGY (PA-1)							
PA 1.1	Describe the role of a pathologist in diagnosis and management of disease	K	K	Y	1.1.1. Describe the role of Pathologist in diagnosis and treatment. 1.1.2. Describe the role of Pathology in correlating clinical findings and disease process . 1.1.3. Enumerate different sections of Pathology and its diagnostic role.	Department orientation SGD (2hrs)	Written , Viva voce

PA 1.2	Enumerate common definitions and terms used in Pathology	K	K	Y	1.2.1. Define Etiology, Pathogenesis and Pathology. 1.2.2. Correlate the clinical findings with pathology.	Lecture (1hr)	Written, Viva voce
PA 1.3	Describe the history and evolution of Pathology	K	K	N	1.3.1. Describe the brief history and evolution of Pathology		
TOPIC- CELL INJURY AND ADAPTATION (PA-2)							
PA 2.1	Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance	K	KH	Y	2.1.1. Enumerate the different causes of cell injury.	Lecture (1hr)	Written, Viva voce
PA 2.2	Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury	K	KH	Y	2.2.1. Describe the pathogenesis of cell injury.(At least a few causes) 2.2.2. Enumerate the microscopic differences between reversible and irreversible cell injury. 2.2.3. Describe the mechanism of reversible and irreversible cell injury. 2.2.4. Enumerate few biochemical changes frequently associated with irreversible cell injury.	Lecture (1hr)	Written, Viva voce

					2.2.5. What is lipofuscin and mention its importance.		
PA 2.3	Intracellular accumulation of fats, proteins, carbohydrates, pigments	K	KH	Y	2.3.1. Enumerate the causes of intracellular and extracellular hyaline deposition 2.3.2. Enumerate the causes of fatty degeneration. Name the organs affected. 2.3.3. Discuss the pathogenesis of fatty liver. Describe the morphology of fatty liver. 2.3.4. Enumerate special stains used to demonstrate Fat, Glycogen and Calcium. 2.3.5 Enumerate the causes of intracellular accumulation of proteins. 2.3.6. Enumerate different types of pigments in health and disease. 2.3.7. Name special stains to demonstrate hemosiderin and melanin.	Lecture (1hr)	Written, Viva voce
PA 2.4	Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis(basic as contrast with necrosis),autolysis	K	KH	Y	2.4.1. Define necrosisand enumerate the different types with examples. Discuss the morphology and fate of coagulative, liquefactive and caseous necrosis. 2.4.2. Discuss the pathogenesis and morphology of fat necrosis.	Lecture (1hr)	Written, Viva voce

					2.4.3. Discuss the pathogenesis and pathology of Apoptosis. 2.4.4. Describe the clinical significance of Apoptosis and Necrosis. 2.4.5. Difference between apoptosis and necrosis. 2.4.6 Define autolysis. Explain the mechanism with example.		
PA 2.5	Describe and discuss pathologic calcifications, gangrene	K /S	KH/ SH	Y	2.5.1. Describe the pathogenesis of Fatty liver in various conditions. 2.5.2 Describe the macro and microscopic changes in Fatty liver. 2.5.3 Enumerate causes of Pathologic calcifications. 2.5.4. Differentiate between metastatic and dystrophic calcifications. 2.5.5. Recognize calcification grossly, microscopically and name special stains for calcium. 2.5.6 Enumerate several conditions associated with extracellular and intracellular protein accumulations.	DOAP(2hrs)	Skill assessme nt

					2.5.7 Enumerate causes of accumulation of Glycogen and special stains used for detection of glycogen. 2.5.8. Identify the changes of fatty degeneration in Liver. 2.5.9. Identify and describe Monckeberg's medial calcification. 2.5.10.Identify the gross specimen of gangrene. 2.5.11. Enumerate the types of gangrene and discuss their pathogenesis.		
PA 2.6	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia	K	KH	Y	2.6.1. Define the term Adaptation. 2.6.2. Mention different types of Adaptation 2.6.3. Describe the pathogenesis and clinical significance of each Adaptation.	SGD(2hr)	Written, Viva voce
PA 2.7	Describe and discuss the mechanisms of cellular aging and apoptosis	K	KH	N	2.7.1. Discuss the mechanism of cellular aging	Lecture (1hr)	Written, Viva voce
PA 2.8	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic Specimens.	S	SH	Y	2.8.1. Identify the morphology of coagulative, liquefactive and caseous necrosis. 2.8.2. Define and morphologically identify different types of Gangrene. 2.8.3. Correlate clinical presentation and morphological changes in Necrosis and Gangrene	DOAP (2hr)	Skill assessment

PA2					Cell Injury	Tutorial/Formative assessment (2hr)	Written, Viva voce
TOPIC: AMYLOIDOSIS (PA- 3)							
PA 3.1 **PA 3.2**	Describe the pathogenesis and pathology of amyloidosis Identify and describe amyloidosis in a pathology specimen	K S	KH SH	Y N	3.1.1. Describe the pathogenesis and pathology of Amyloidosis. 3.1.2. Enumerate the diseases associated with amyloid deposition and name the common organs affected. 3.1.3. Enumerate the Investigations used in diagnosis of amyloidosis. 3.1.4. Special stains used to demonstrate the amyloid 3.2.1 Identify the gross specimen of amyloid kidney/spleen. (Optional) 3.2.2. Identify the amyloid deposition microscopically. 3.2.3 Interpretation of the special stain done.	SGD (2hrs)	Written, Viva voce
TOPIC: INFLAMMATION (PA- 4)							
PA 4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	K	KH	Y	4.1.1. Define and differentiate acute and chronic inflammation. 4.1.2. Describe the pathogenesis of acute and chronic inflammation. 4.1.3. Describe the various vascular and cellular events involved in acute inflammation.	Lecture (2hrs)	Written, Viva voce

					4.1.4. Define and describe chemotaxis, phagocytosis and opsonisation.		
PA 4.2	Enumerate and describe the mediators of acute inflammation	K	KH	Y	4.2.1. Enumerate the chemical mediators of acute inflammation. 4.2.2. Describe the role of important mediators of acute inflammation. 4.2.3. Enumerate the sequelae of acute inflammation. 4.2.4. Describe the clinical outcome of acute inflammation.	Lecture (1hr)	Written, Viva voce
PA 4.3	Define and describe chronic inflammation including causes, types enumerate types, non-specific and granulomatous; and examples of each	K	KH	Y	4.3.1. Define the chronic inflammation 4.3.2. Enumerate types of chronic inflammation 4.3.3. Describe the pathogenesis of granuloma formation. 4.3.4. Enumerate the examples of granulomatous diseases.	Lecture (1hr)	Written, Viva voce
PA 4.4	Identify and describe acute and chronic inflammation in gross and microscopic specimens.	S	SH	Y	4.4.1. Identify the granulomas microscopically. 4.4.2 Identify epithelioid cell and giant cell microscopically. 4.4.3. Identify the different morphological features of chronic inflammation. 4.4.4 Recognize grossly the granulomatous inflammation of lymph node, Actinomycosis. 4.4.5. Identify and describe the specimen of acute appendicitis and pneumonia. 4.4.6. Recognize microscopic features of acute	DOAP (4hrs)	Skill assessment

					inflammation		
PA4					Inflammation	Tutorial/Formative assessment (2hrs)	Written, Viva voce
TOPIC: HEALING AND REPAIR (PA- 5)							
PA 5.1	Define and describe the process of repair and regeneration including wound healing and its types	K	KH	Y	5.1.1. Define and differentiate regeneration from repair. 5.1.2. Describe various steps in healing. 5.1.3. Differentiate primary healing from secondary healing 5.1.4.Describe various steps involved in fracture healing. 5.1.5 The classification of tissues based on the proliferative capacity of cells. 5.1.6Complications and factors affecting wound healing. 5.1.7 Complications and factors affecting healing of fracture. 5.1.8 Mechanism of repair by connective tissue deposition	Lecture (1hr)	Written, Viva voce
PA 5					Healing and repair	Tutorial /Formative assessment (1hr)	Written, Viva voce

TOPIC: HEMODYNAMIC DISORDERS(PA-6)							
PA 6.1	Define and describe edema, its types, pathogenesis and clinical correlations.	K	KH	Y	6.1.1 Define oedema and explain the fluid balance. 6.1.2 Mention the differences between transudate and exudate. 6.1.3 Enumerate the types of oedema and describe their pathophysiology(Renal, Cardiac, pulmonary, cerebral, nutritional and hepatic), clinical features and consequences	Lecture (1hr)	Written, Viva voce
PA 6.2	Define and describe hyperemia, congestion, haemorrhage	K/ S	KH /SH	Y	6.2.1.Identify the difference between hyperaemia, congestion and haemorrhage 6.2.2.Enumerate the causes and identify the gross and microscopy of Chronic venous congestion Lung, Liver and Spleen 6.2.3 Enumerate the consequences of congestion and haemorrhage.	DOAP (1hr)	Skill assessment
PA 6.3	Define and describe shock, its pathogenesis and its stages	K	KH	Y	6.3.1. Define Shock and discuss the concept of adequate cardiac output and its importance 6.3.2. Enumerate the types and discuss the mechanisms of the various types of shock 6.3.3. Describe the various stages of shock with their clinical manifestations and morphological changes in various organs	Lecture (1hr)	Written, Viva voce
PA-6.4a	Define and describe normal haemostasis	K	KH	Y	6.4a.1.Describe the role of endothelial cells, platelets and coagulation factors in maintaining hemostasis. 6.4a.2. Write the coagulation cascade	SDL (1hr)	Written, Viva voce

PA 6.4b	Describe the etiopathogenesis and consequences of thrombosis	K	KH	Y	6.4b.1. Define thrombosis and explain Virchow's triad 6.4b.2. Enumerate hypercoagulable states. 6.4b.3. List the types of thrombus and its morphology 6.4b.4. List the differences between a postmortem and antemortem thrombus. 6.4b.5. Fate of thrombus and its clinical consequences 6.4b.6 Difference between arterial and venous thrombus. 6.4b.7. Contribution of alteration in blood flow to thrombosis.	Lecture (1hr)	Written, Viva voce
PA 6.5	Define and describe embolism and its causes and common types.	K	KH	Y	6.5.1. Define an embolism and enumerate the differences between a thrombus and an embolus. 6.5.2. Enumerate the types of embolism and describe their etiopathogenesis with examples and clinical manifestations	Lecture (1hr)	Written, Viva voce
PA 6.6, **PA 6.7**	Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects. Identify and describe the gross and microscopic features of infarction in a pathology specimen	K S	KH SH	Y Y	6.6.1. Define infarction and enumerate the different types of infarction. 6.6.2. Describe the etiopathogenesis of infarction 6.7.1. Identify the gross features of infarction in various organs 6.7.2. Identify the microscopic features of infarction in various organs	DOAP (1hr)	Skill assessment
PA6		K	KH	Y	Hemodynamic Disorder	Tutorial/Formative	Written, Viva

						assessment (2hrs)	voce
TOPIC: NEOPLASTIC DISORDERS (PA-7)							
PA 7.1a	Define and classify neoplasia, biologic behaviour and spread.	K	KH	Y	7.1a.1. Define and classify neoplasia 7.1a2. For both males and females, list in descending order: • the five most common cancers • the five most common causes of cancer death 7.1a3. Define and differentiate with examples: Ectopia, Heterotopia, Hamartoma, Teratoma. 7.1a4. Outline the classification and nomenclature for benign and malignant neoplasms using appropriate prefixes and suffixes and indicating specific exceptions to rules of nomenclature. 7.1a5. Discuss the differences between benign and malignant neoplasms. 7.1a.6. Enumerate the routes of spread. Compare and contrast the route of spread of Carcinoma versus Sarcoma with exceptions. 7.1a.7. Define metastasis and discuss the mechanism of metastasis. 7.1a.8. Define staging and grading of tumours and its clinical significance.	Lecture (2hrs)	Written, Viva voce

					7.1a.9. List the most common sites of origin of: adenoma, adenocarcinoma, squamous cell carcinoma, melanoma		
PA 7.1b	Describe the characteristics of neoplasia including gross, microscopy. Differentiate between benign from malignant neoplasm	S	SH	Y	7.1b.1. Identify the gross and microscopic features of benign neoplasms. 7.1b.2. Identify the gross and microscopic features of malignant neoplasms.	DOAP (4hrs)	Skill assessment
PA 7.2	Describe the molecular basis of cancer.	K	KH	Y	7.2.1. Describe the cell cycle. 7.2.2. Write a note on cell signalling pathways 7.2.3. Describe role of proto-oncogenes, oncogenes and onco-proteins in carcinogenesis 7.2.4. Describe the role of important tumour suppressor genes (Rb gene, p53, APC) in carcinogenesis. 7.2.5. Enumerate and discuss the steps of multistep carcinogenesis.	Lecture (2hrs)	Written, Viva voce
PA 7.3	Enumerate carcinogens and describe the process of carcinogenesis	K	KH	Y	7.3.1. Define and classify carcinogens. 7.3.2. Classify and enumerate chemical carcinogens 7.3.3. Describe the mechanism of chemical carcinogenesis 7.3.4. Discuss the mechanism of Radiation carcinogenesis (UV rays and Ionizing radiation) and name the associated cancers. 7.3.5. Classify microbial carcinogens and enumerate associated neoplasms. 7.3.6. Discuss the mechanism of microbial carcinogenesis.	Lecture (2hrs)	Written, Viva voce

					7.3.7. Elaborate the role of the following in the development of human cancer in relation to at least 2 specific neoplasms associated with each: • physical agents • chronic inflammatory conditions • hormones		
PA-7.4	Describe the effects of tumour on the host including paraneoplastic syndrome	K	KH	Y	7.4.1. Discuss the local and systemic effects of tumour on the host. 7.4.2. Define and discuss Para-neoplastic syndromes. 7.4.3. Discuss the different types and clinical significance of tumour markers and their role in lab diagnosis.	SGD (2hrs)	Written, Viva voce
PA 7.5	Describe immunology and the immune response to cancer	K	KH	N	7.5.1. Describe host immune response to cancer.		
PA7					Neoplasia	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: BASIC DIAGNOSTIC CYTOLOGY (PA-8)							
PA 8.1	Describe the diagnostic role of cytology and its application in clinical care.	K	KH	Y	8.1.1. Describe the procedure of FNAC, its advantages and limitations.	SGD (2hrs)	Written, Viva voce

PA 8.2	Describe the basis of exfoliative cytology including the technique & stains used	K	KH	Y	8.2.1. Describe the sites of exfoliative cytology (PAP smear, body fluids, sputum, urine) 8.2.2. Enumerate the steps and name different stains used in pap stain.	SGD (2hrs)	Written, Viva voce/ Skill assessment
PA 8.3	Observe a diagnostic cytology and its staining and interpret the specimen	S	KH	Y	8.3.1. Observe and interpret the cytology reports		
TOPIC: IMMUNOPATHOLOGY AND AIDS (PA-9)							
PA 9.1	Describe the principles and mechanisms involved in immunity.	K	KH	Y	9.1.1 Define innate immunity. 9.1.2 Describe the components and mechanism of innate immunity. 9.1.3 Define and enumerate the types of Adaptive immunity. 9.1.4 Describe the cells of the immune system and their role in immunity. 9.1.5 Describe the mechanism of humoral immunity. 9.1.6 Describe the mechanism of cell mediated immunity. 9.1.7 Define and describe the mechanism of Major Histocompatibility Complex (MHC).	SGD (1hr)	Written, Viva voce
PA 9.2	Describe the mechanism of hypersensitivity reactions.	K	KH	Y	9.2.1 Define and classify Hypersensitivity reactions. 9.2.2 Describe the mechanism of Type I hypersensitivity reactions with schematic diagram with examples.	SGD (1hr)	Written, Viva

					9.2.3 Describe the mechanism of Type II hypersensitivity reactions with schematic diagram with examples 9.2.4 Describe the mechanism of Type III hypersensitivity reactions with schematic diagram with examples 9.2.5 Describe the mechanism of Type IV hypersensitivity reactions with schematic diagram with examples. 9.2.6 Categorize the given clinical scenarios into different types of hypersensitivity reactions.		voce
PA 9.3	Describe the HLA system and the immune principles involvedin transplant and mechanism of transplant rejection.	K	KH	Y	9.3.1 Define HLA system and Major Histocompatibility Complex molecules. 9.3.2 Describe the function of MHC class I and class II molecules. 9.3.3 Describe the mechanism of recognition and rejection of allografts with schematic diagrams. 9.3.4 Describe the mechanism and morphology of rejection of Kidney grafts. 9.3.5 Describe the methods of increasing graft survival. 9.3.6 Describe the mechanism and types of Graft Versus Host Disease (GVHD)	Lecture (1hr)	Written, Viva voce
PA 9.4	Define autoimmunity. Enumerate autoimmune disorders.	K	KH	Y	9.4.1 Define Autoimmune disease 9.4.2 Classify Autoimmune diseases 9.4.3 Define and enumerate the types of immunologic	Lecture (1hr)	Written, Viva

					tolerance. 9.4.4 Describe the mechanism of central tolerance. 9.4.5Describe the mechanism of peripheral tolerance. 9.4.6 Describe the mechanism of autoimmunity with a neat labelled schematic diagram. 9.4.7 Describe the general features associated with autoimmune diseases		voce
PA 9.5	Define and describe the pathogenesis of Systemic Lupus Erythematosus	K	KH	Y	9.5.1 Define SLE and enumerate and describe various types of SLE 9.5.2 Describe the revised criteria for classification of SLE 9.5.3 Enumerate and describe the spectrum of autoantibodies in SLE. 9.5.4 Describe the etiopathogenesis of SLE with a neat labelled schematic diagram. 9.5.5 Describe the morphological features in SLE. 9.5.6 Enumerate the clinical features of SLE.	Lecture (1hr)	Written, Viva voce
PA 9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	9.6.1 Define AIDS and Describe the epidemiology and aetiology of AIDS. 9.6.2 Describe the structure and life cycle of HIV with a neat labelled schematic diagram. 9.6.3 Describe the pathogenesis of HIV and pathology of AIDS with schematic diagram. 9.6.4 Enumerate and describe the clinical features of AIDS.	Lecture (1hr)	Written, Viva voce

					9.6.5 Enumerate and describe AIDS defining opportunistic infections. 9.6.6 Enumerate neoplasms found in patients with HIV infections		
PA 9.7	Define and describe the pathogenesis of other common autoimmune diseases	K	KH	N	9.7.1 Define Sjögren Syndrome. 9.7.2 Describe the etiopathogenesis of Sjögren syndrome. 9.7.3 Describe the clinical features of morphological findings in Sjögren syndrome. 9.7.4.Enumerate organ specific autoimmune diseases and systemic autoimmune diseases	Lecture (1hr)	Written, Viva voce
TOPIC-INFECTIONS AND INFESTATIONS (PA-10)							
PA 10.1	Define and describe the pathogenesis and pathology of malaria.	K	KH	Y	10.1.1 Enumerate parasite causing malaria 10.1.2 Describe the life cycle of malarial parasite 10.1.3 Describe morphology of malarial parasite 10.1.4 Discuss the lab diagnosis in malaria.	SGD (2hrs)	Written, Viva voce
PA 10.2	Define and describe the pathogenesis and pathology of cysticercosis.	K	KH	Y	10.2.1 Enumerate cause of cysticercosis 10.2.2 Discuss etiopathology of cysticercosis		
PA 10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	10.3.1 Define and Classify Leprosy 10.3.2 Discuss the pathogenesis of leprosy 10.3.3 Differentiate morphology of tuberculoid and	Lecture (1hr)	Written, Viva voce

					lepromatous leprosy		
PA 10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases.	K	KH	N	10.4.1 Describe general principle of microbial pathogenesis 10.4.2 Describe the aetiology, pathogenesis and organ changes in Typhoid fever. 10.4.3 Describe the aetiology, clinical features and organ changes in Bacillary dysentery. 10.4.4 Describe the clinical manifestations, mode of transmission, salient diagnostic methods of Measles, Herpes and Rabies 10.4.5 Describe the aetiology, clinical manifestations and organ changes in Amoebic dysentery and amoebic abscess 10.4.6 Describe the aetiology, clinical features, organ changes and laboratory findings in Filariasis/ Hydatid cyst 10.4.7 Describe the aetiology, pathogenesis, organ changes, clinical manifestations and laboratory diagnosis of fungal lesions(Candida, Aspergillosis, Mucormycosis, Cryptococcosis) 10.4.8 Describe the causative agent, types, clinical manifestations and laboratory diagnosis of Syphilis.	SGD (4hrs)	Written, Viva voce
PA 10					Study on Corona Virus	SDL (1hr)	Written, Viva voce

TOPIC: GENETIC AND PAEDIATRIC DISEASES (PA-11)							
PA 11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood	K	KH	N	11.1.1 Define gene, mutation, the types of mutation 11.1.2 Discuss the transmission patterns of single gene disorders with examples for each 11.1.3 Describe the normal Karyotype 11.1.4 Discuss the various structural abnormalities of chromosomes	Lecture (1hr)	Written, Viva voce
PA 11.2	Describe the pathogenesis and pathology of tumour and tumour like conditions in infancy and childhood	K	KH	N	11.2.1 Describe the tumour like lesions in infancy and childhood with few examples for each. 11.2.2 Name some common benign tumours in children. 11.2.3 Discuss the morphology of common benign tumours. 11.2.4 Classify common childhood malignant tumours. 11.2.5 Discuss the molecular pathogenesis and morphology of Neuroblastoma. 11.2.6 Discuss the molecular pathogenesis and syndromes associated with Wilm's tumour. 11.2.7 Enumerate the morphology and clinical features in Wilm's tumour. 11.2.8 Discuss the molecular pathogenesis and morphology of Retinoblastoma.	Lecture (1hr)	Written, Viva voce
PA 11.3	Describe the pathogenesis of common storage disorders in	K	KH	N	11.3.1 Discuss the pathogenesis lysosomal storage diseases. 11.3.2 Name the lysosomal storage diseases and	Lecture (1hr)	Written, Viva

	infancy and childhood				associated enzyme deficiency. 11.3.3 Describe the morphology of Niemann-Pick disease, Gaucher's disease		voce
TOPIC: ENVIRONMENTAL AND NUTRITIONAL DISEASES (PA-12)							
PA 12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol.	K	KH	Y	12.1.1 Enumerate the disorders caused by air pollution, tobacco and alcohol 12.1.2 Describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol. 12.1.3 Enumerate the health effects of indoor and outdoor air pollution. 12.1.4 Describe the organ specific effects of tobacco smoke constituents. 12.1.5 Describe the acute and chronic adverse effects of alcohol abuse.	SDL (2hrs)	Written, Viva voce
PA 12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	K	KH	Y	12.2.1 Enumerate causes and types of Malnutrition 12.2.2 Describe the clinical features and morphology of Marasmus and Kwashiorkar	Lecture (1hr)	Written, Viva voce
PA 12.3	Describe the pathogenesis of obesity and its consequences	K	KH	Y	12.3.1 Define Obesity and describe the pathogenesis of Obesity with reference to the role of leptins, adipose tissue and gut hormones. 12.3.2 Discuss the clinical consequences of Obesity.	Lecture (1hr)	Written, Viva voce

TOPIC: INTRODUCTION TO HAEMATOLOGY (PA-13)							
PA-13.1	Describe hematopoiesis and extramedullary hematopoiesis.	K	KH	Y	13.1.1 Describe normal haematopoiesis 13.1.2 List sites of extra medullary haematopoiesis.	SDL (1hr)	Written, Viva voce
PA-13.3	Define and classify anemia	K	KH	Y	13.3.1 Define Anaemia. 13.3.2 Classify anaemia based on morphology and etiology	Lecture (1hr)	Written, Viva voce
PA-13.4	Enumerate and describe the investigation of anemia	K	KH	Y	13.4.1 Write the investigations required for the laboratory diagnosis of anaemia 13.4.2 What is CBC, ESR, PCV 13.4.3 Peripheral smear and bone marrow examination in the diagnosis of anemias	Lecture (1hr)	Written, Viva voce
PA 13.2 **PA 13.5**	Describe the role of anticoagulants in hematology Perform, Identify and describe the peripheral blood picture in anemia	K S	KH SH	Y Y	13.2.1 List and write the mechanism of action of anticoagulants used in haematology. 13.2.2 Discuss the appropriate use of anticoagulants in haematology and blood bank. 13.5.1 Make a peripheral blood smear and stain the smear using Leishman's stain 13.5.2 Write the principle of Romanowsky stains 13.5.3 Identify blood cells in a normal peripheral blood smear.	DOAP (2hrs)	Skill assessment
TOPIC: MICROCYTIC ANAEMIA (PA-14)							
PA-14.1	Describe iron metabolism Describe the etiology,	K K	KH KH	Y Y	14.1.1 Describe iron metabolism 14.2.1 List the causes of microcytic hypochromic	Lecture (1hr)	Written, Viva voce

PA 14.2	investigations and differential diagnosis of microcytic hypochromic anemia				anaemia. 14.2.2 Describe the investigations in a case of iron deficiency anaemia. 14.2.3 Discuss the differential diagnosis of microcytic hypochromic anaemia. 14.2.4 Write the peripheral blood and bone marrow findings in iron deficiency anaemia.		
PA-14.3	Identify and describe the peripheral smear in microcytic Anemia	S	SH	Y	14.3.1 Identify and describe the peripheral blood picture of microcytic anaemia	DOAP (1hr)	Skill assessment
TOPIC: MACROCYTIC ANAEMIA (PA-15)							
PA 15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency	K	KH	Y	15.1.1 Describe the metabolism of vitamin B12. 15.1.2 Discuss the etiology and pathogenesis of vitamin B12 deficiency.	Lecture (1hr)	Written, Viva voce
PA 15.2	Describe laboratory investigations of macrocytic anemia	K	KH	Y	15.2.1 List the causes of macrocytic anaemia 15.2.2 Describe laboratory investigations of macrocytic anaemia. 15.2.3 Describe the peripheral blood and bone marrow picture in megaloblastic anaemia		
	Enumerate the differences and describe the distinguishing	K	KH	Y	15.4.1 Discuss the etiology of megaloblastic anaemia 15.4.2 Describe the distinguishing features of		

PA 15.4	features of megaloblastic and non-megaloblastic macrocytic anemia				megaloblastic and non megaloblastic macrocytic anaemia. 15.4.3 Enumerate the differences between megaloblastic and non megaloblastic macrocytic anaemia.		
PA 15.3	Identify and describe the peripheral smear in macrocytic anemia	S	SH	Y	15.3.1 Identify and describe the peripheral blood picture of macrocytic anaemia	DOAP (1hr)	Skill assessment
TOPIC: HEMOLYTIC ANAEMIA (PA-16)							
PA-16.1	Define and classify hemolytic anemia	K	KH	Y	16.1.1 Define haemolytic anaemia 16.1.2 List the causes of inherited and acquired haemolytic anaemia by mechanisms.	Lecture (1hr)	Written, Viva voce
PA 16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	K	KH	Y	16.2.1 Describe the pathogenesis of intravascular and extravascular haemolytic anaemias 16.2.2 Enumerate clinical features in haemolytic anaemia 16.2.3 Enumerate the laboratory investigations in haemolytic anaemia.		
PA 16.5	Describe the peripheral blood picture in different hemolytic Anaemias	K	KH	Y	16.5.1 Describe the peripheral blood picture in different haemolytic anemias with respect to RBC morphology.		
PA-16.3	Describe the pathogenesis, features, hematologic indices	K	KH	Y	16.3.1 Describe the pathogenesis, hematologic features and laboratory diagnosis of sickle cell	Lecture (1hr)	Written,

	and peripheral blood picture of sickle cell anemia and thalassemia				anaemia 16.3.2 Describe the pathogenesis, hematologic features and laboratory diagnosis of thalassemia. 16.3.3 List the features to distinguish thalassemia from iron deficiency anaemia.		Viva voce
PA-16.4a	Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	K	KH	Y	16.4.1 Explain the etiopathogenesis of acquired haemolytic anaemia. 16.4.2 Describe the laboratory diagnosis of acquired haemolytic anaemia.	Lecture (1hr)	Written, Viva voce
PA 16.4b	Case based discussion	K	KH	Y	1.Sickle cell anemia 2. Thalassemia 3. Hereditary spherocytosis 4. Autoimmune hemolytic anemia	SGD (2hrs)	Written, Viva voce
PA-16.6	Prepare a peripheral blood smear and identify hemolytic anaemia from it	S	P	Y	16.6.1 Prepare a peripheral smear 16.6.2 Stain the smear 16.6.3 Interpret the smear findings 16.6.4 Interpret the clinical and hematological features in the chart of hemolytic anemia.	DOAP (2hrs)	Skill assessment
TOPIC: APLASTIC ANEMIA (PA-17)							
PA-17.1	Enumerate the etiology, pathogenesis and findings in aplastic anemia	K	K	N	17.1.1 Enumerate the causes of aplastic anemia 17.1.2 Enumerate the pathogenesis of aplastic anemia 17.1.3 Enumerate the bone marrow findings in aplastic anemia	Lecture (1hr)	Written, Viva voce

PA-17.2	Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	K	K	N	17.2.1 List the types of bone marrow study 17.2.2 List the indications and contraindications for bone marrow study 17.2.3 Describe the bone marrow findings with specific examples of involvement		
TOPIC: LEUKOCYTE DISORDERS (PA-18)							
PA-18.1	Enumerate and describe the causes of leucocytosis leucopenia, lymphocytosis and leukemoid reactions	K	KH	Y	18.1.1 List the causes for leucocytosis and leucopenia 18.1.2 Define leukemoid reaction 18.1.3 List the differences between leukemoid reaction and chronic myeloid leukemia	SGD (2hrs)	Written, Viva voce
PA-18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	K/ S	KH/ SH	Y	18.2.1 Describe the etiology, genetics, pathogenesis of acute and chronic leukemia 18.2.2 Enumerate the classification of acute and chronic leukemia (FAB and WHO) 18.2.3 Describe the hematologic features of acute and chronic leukemia 18.2.4 Briefly describe Chronic myeloproferative disorders 18.2.5 Demonstrate hematological findings and interpret charts 18.2.6 Identify the hematological findings in the smears	Lecture (2hrs DOAP (2hrs)	Written, Viva voce Skill assessment

PA 13, 14, 15, 16,17,18					Anaemias and leucocyte disorders	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: LYMPH NODE AND SPLEEN (PA-19)							
PA-19.1 **PA-19.6** **PA-19.7**	Enumerate the causes and describe the differentiating features of lymphadenopathy Enumerate and differentiate the causes of splenomegaly. Identify and describe the gross specimen of an enlarged spleen	K K S	KH KH SH	Y Y Y	19.1.1. Enumerate causes of lymphadenopathy. 19.1.2. Describe the differentiating features of lymphadenopathy 19.6.1.Categoriseand enumerate the causes of Splenomegaly 19.6.2. Discuss the differential diagnosis of an enlarged spleen in a given specimen 19.7.1. Identify Gross features of enlarged enlarged spleen in a given specimen	SGD (2hrs)	Written, Viva voce/ Skill assessment
PA-19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis	K	KH	Y	19.2.1. Describe Pathogenesis and pathology of tuberculous lymphadenitis	SGD (2hrs)	Written, Viva voce
PA-19.3	Identify and describe the features of tuberculous	S	SH	Y	19.3.1. Identify the gross features of tuberculous lymphadenitis in a given	DOAP (2hrs)	Skill assessmen

	lymphadenitis in a gross and microscopic specimen				specimen 19.3.2. Describe gross and microscopy of tuberculous lymphadenitis 19.3.3. Describe microscopy of tuberculous lymphadenitis with neat diagram 19.3.4. Mention the special stain used to demonstrate tubercle bacilli		t
PA 19.5	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen.	S	SH	Y	19.5.1. Identify microscopy of Hodgkin's Lymphoma of a given slide with neat diagram		
PA-19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	K	KH	Y	19.4.1. Classify Lymphoid neoplasm (WHO) and enumerate the clinical features of Lymphoma 19.4.2. Classify Hodgkin's lymphoma 19.4.3. Enumerate the clinical features of Hodgkin's Lymphoma 19.4.4. Write on etiopathogenesis of Hodgkin's lymphoma 19.4.5. Describe the gross & microscopy of Hodgkin's lymphoma with the help of neat labelled diagram 19.4.6.Tabulate the differences between Hodgkin's and non-Hodgkin's lymphoma	Lecture (1hr)	Written, Viva voce

TOPIC: PLASMA CELL DISORDERS (PA-20)							
PA-20.1	Describe the features of plasma cell myeloma	S	SH	Y	20.1.1. Describe clinical features and laboratory findings in plasma cell myeloma 20.1.2. Describe the complications of plasma cell myeloma	SGD (2hrs)	Skill assessment
TOPIC: HEMORRHAGIC DISORDERS (PA-21)							
PA-21.1	Describe normal haemostasis and haemophilia.	K	KH	Y	21.1.1. Define haemostasis 21.1.2. Describe normal haemostasis 21.1.3. Describe the vessel wall in normal haemostasis 21.1.4. Discuss the mechanism of primary haemostasis with a flow chart 21.1.5. Discuss the mechanism of secondary haemostasis with a flow chart 21.1.6. Brief the fate of haemostatic plug 21.1.7. Discuss the extravascular factors that influence haemostasis 21.1.8. List tests for intrinsic pathway abnormalities and give the procedure and normal values 21.1.9. List tests for extrinsic pathway abnormalities and give the procedure and normal values 21.2.1.Describe the clinical findings, inheritance and lab findings in haemophilia A & B	Lecture (1hr)	Written, Viva voce
PA 21.2	Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including	K	KH	Y	21.2.1.Classify bleeding disorders 21.2.2. Enumerate the causes of bleeding due to vessel wall abnormality. 21.2.3. Enumerate bleeding disorder due to platelets.	Lecture (1hr)	Written, Viva voce

	ITP				21.2.4.List causes of thrombocytopenia 21.2.5.List the laboratory investigations of platelet disorders 21.2.6.Describe the etiopathogenesis of idiopathic thrombocytopenia 21.2.7.List the laboratory investigations of idiopathic thrombocytopenia 21.2.8.Describe clinical findings, inheritance in von Willebrand disease 21.2.9.List the laboratory findings in von Willebrand disease		
PA-21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features. Differentiate platelet from clotting disorders based on the clinical and hematologic features.	S	SH	Y	21.3.1.Differentiate platelet and clotting disorders clinically 21.3.2.Differentiate platelet and clotting disorders hematologically.	SGD (2hrs)	Written, Viva voce
PA 21.4 **PA 21.5**	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of	K K	KH KH	Y Y	21.4.1.Define Disseminated Intravascular Coagulation (DIC) 21.4.2.Mention the causes DIC 21.4.3.Describe pathogenesis of DIC using flow chart 21.4.4.Discuss laboratory findings in Disseminated Intravascular Coagulation 21.5.1.List Vitamin K dependent factors 21.5.2.Describe the approach to diagnosis of Vitamin K deficiency using flow chart	Lecture (1hr)	Written, Viva voce

	Vitamin K deficiency.						
TOPIC: BLOOD BANKING AND TRANSFUSION (PA-22)							
PA-22.1 **PA-22.2** **PA-16.7**	Classify and describe blood group systems (ABO and RH) Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing. Describe the correct technique to perform a cross match	K S S	KH SH SH	Y Y Y	22.1.1Classify different blood group system. 22.1.2 Mention importance of Rh factor. 22.1.3 Describe Bombay blood group. Mention its clinical importance. 22.1.4 Describe ABO & Rh incompatibility. 22.1.5 Mention different methods of blood grouping 22.1.6 Enumerate steps of ABO grouping & Rh typing and demonstrate the same. 22.2.1 Mention indications & principles of Major and minor cross matching. 22.2.2 Describe Coombs test, its principle & usage. 22.2.3 Describe criteria for Donor selection & rejection. 22.2.4 Describe Precautions to be taken during transfusion 16.7.1 Enumerate steps of major & minor cross matching and demonstrate the same.	DOAP (2hrs)	Skill assessment (OSPE)
PA-22.4	Enumerate blood components and describe their clinical uses.	K	KH	Y	22.4.1 Enumerate different blood components 22.4.2 Mention anticoagulants used in blood banks. 22.4.3 Mention different blood bags and their uses.	Lecture (1hr)	Written, Viva

					22.4.4 Mention storage and shelf life of different blood components 22.4.5 Describe indications for clinical use of different blood components		voce
PA-22.5	Enumerate and describe infections transmitted by blood transfusion.	K	KH	Y	22.5.1 Enumerate different infections transmitted through blood transfusion. 22.5.2 Enumerate diseases tested for before transfusion and mention the methods of testing.		
PA 22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction.	K	KH	Y	22.6.1 Describe transfusion reactions. 22.6.2Mention types of transfusion reactions. 22.6.3 Describe clinical features of transfusion reactions. 22.6.4 Mention immediate steps to be taken following transfusion reaction 22.6.5 Enumerate steps in investigating blood transfusion reactions including documentation check, serological investigations, tests for haemolysis and microbiological tests.	Lecture (1hr))	Written, Viva voce
PA 22.7	Enumerate the indications and describe the principles and procedure of autologous transfusion.	K	KH	Y	22.7.1 Define autologous blood transfusion. Enumerate advantages and indications for autologous blood transfusion.		

TOPIC: CLINICAL PATHOLOGY (PA-23)							
PA 23.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	S	SH	Y	23.1.1 Mention different methods of collection of urine and preservation 23.1.2 Enumerate disease conditions associated with variation in total urine volume. 23.1.3 Enumerate disease conditions associated with variation in urine pH. 23.1.4 Enumerate disease conditions associated with variation in urine colour. 23.1.5 Enumerate disease conditions associated with variation in urine odour. 23.1.6 Enumerate disease conditions associated with variation in urine clarity/appearance. 23.1.7 Enumerate disease conditions associated with variation in urine specific gravity 23.1.8 Define glycosuria. Enumerate pathological conditions associated with glycosuria. Demonstrate the test for glycosuria. 23.1.9 Define ketonuria. Enumerate pathological conditions associated with ketonuria. Demonstrate the test for ketonuria, 23.1.10 Define proteinuria. Enumerate pathological conditions associated with proteinuria. Demonstrate the test for proteinuria. 23.1.11 Define haematuria, enumerate pathological conditions associated with haematuria. Demonstrate	DOAP (2hrs)	Skill assessment (OSPE)

					the test for haematuria. 23.1.12 Describe principles of chemical tests and Dipsticks tests for determination of Sugar, Ketone bodies, Proteins and Blood in urine. 23.1.13 Describe urinary microscopic findings with reference to cells, crystals and casts in disease states. 23.1.14 Interpret urinary findings in Nephritic syndrome, Nephrotic syndrome, Diabetic ketoacidosis, Urinary tract infection.		
PA 23.2 **PA 23.3**	Describe abnormal findings in body fluids in various disease states. Describe and interpret the abnormalities in a panel	K S	KH SH	Y Y	23.2.1 Mention different body fluids, method of collection and preservation. 23.2.2 Mention differences between transudate and exudate. 23.2.3 Mention changes in body fluid parameters in tuberculosis 23.2.4 Mention changes in body fluid parameters in malignancy 23.2.5 Mention changes in body fluid parameters in pyogenic infections. 23.2.6 Identify etiology of pleural effusion and ascitis by interpreting given body fluid parameters. 23.3.1 Describe indications for semen analysis and interpretation of semen analysis report.	SGD (2hrs)	Written, Viva voce/ Skill assessment

	containing semen analysis.						
TOPIC: GASTROINTESTINAL TRACT (PA-24)							
PA24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers include salivary gland tumors	K	KH	N	24.1.1 Describe Leukoplakia and Erythroplakia. 24.1.2 Describe aetiology, pathogenesis of squamous cell carcinoma of oral cavity. 24.1.3 Describe gross and microscopic features of squamous cell carcinoma of oral cavity 24.1.4 Classify salivary gland tumours 24.1.5 Describe Morphology & clinical features of Pleomorphic adenoma, Warthin tumour & Mucoepidermoid carcinoma. 24.1.6 Barrett's oesophagus 24.1.7 Describe the aetiology, pathogenesis, types, morphological features of carcinoma oesophagus	Lecture (1hr)	Written, Viva voce
PA-24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease.	K	KH	Y	24.2.1 Define peptic ulcer disease. 24.2.2 Describe aetiology andpathogenesis of PUD, 24.2.3 Describe gross and microscopic features of Peptic ulcer. 24.2.4 Describe clinical features and complications of PUD. 24.2.5 Define Gastritis and discuss its types 24.2.6.Describe etiopathogenesis, morphology and clinical features of Acute Gastritis	Lecture (1hr)	Written, Viva voce

PA-24.4	Describe and aetiology and pathogenesis and pathologic features of carcinoma of the stomach	K	KH	Y	24.4.1. Describe epidemiology, etiopathogenesis and clinical features of carcinoma stomach. 24.4.2. Describe gross andmicroscopy of Carcinoma stomach. 24.4.3. Mention gross morphological differences between benign and malignant gastric ulcers.	SGD(2hrs)	Written, Viva voce
PA-24.6	Describe and aetiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	K	KH	Y	24.6.1 Define IBD , 24.6.2 Describe epidemiology, aetiology and pathogenesis of IBD. 24.6.3 Describe gross and microscopy, clinical features and complications of Crohn's disease. 24.6.4 Describe gross and microscopy, clinical features & complications of ulcerative colitis. 24.6.5 Enumerate the differences between Ulcerative Colitis and Crohn's disease	Lecture (1hr)	Written, Viva voce
PA-24.7	Describe the aetiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	K	KH	Y	24.7.1 Enumerate polyps and adenomas of colon. 24.7.2 Describe Familial Adenomatous Polyposis. 24.7.3 Describe aetiology, pathogenesis of Carcinoma of colon. 24.7.4 Describe gross morphology and microscopy of Carcinoma of colon. 24.7.5 Describe clinical features, investigations, staging and prognosis of carcinoma of colon. 24.7.6 Enumerate pre-neoplastic lesions of Intestine	Lecture (1hr)	Written, Viva voce
PA-24.3	Describe and identify the microscopic features of peptic ulcer. – include slides of Pleomorphic adenoma and specimen of Ca Stomach, Ca	S	SH	Y	24.3.1 Identify microscopic features of pleomorphic adenoma. 24.3.2 Identify gross features in specimen of carcinoma ofstomach. 24.3.3 Identify gross features in specimen of	DOAP(2hrs)	Written, Viva voce/ Skill

	Colon, TB intestine, Peptic ulcer				carcinoma of colon. 24.3.4 Identify microscopic features of carcinoma of stomach. 24.3.5 Identify microscopic features of carcinoma of colon. 24.3.6. Identify the gross and microscopic features of peptic ulcer		assessm ent
PA 24.5	Describe and aetiology, pathogenesis and pathologic features of Tuberculosis of the intestine	K	KH	N	24.5.1Identify Gross features in specimen of TB intestine (Optional) 24.5.2Identify microscopic features of Tuberculosis of intestine.(Optional)		
PA24					Gastrointestinal system	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: HEPATOBILIARY SYSTEM (PA-25)							
PA-25.1	Describe bilirubin metabolism, enumerate the aetiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	K	KH	Y	25.1.1 Describe bilirubin metabolism 25.1.2 Enumerate the etiology and pathogenesis of jaundice 25.1.3.Distinguish between direct and indirect hyperbilirubinemia	SGD (2hrs)	Written, Viva voce
PA-25.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their	K	KH	Y	25.2.1. Describe the pathophysiology, complications and clinical consequences of liver failure	Lecture (1hr)	Written, Viva

PA-25.3	clinical manifestations, complications and consequences. Describe the aetiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis.	K	KH	Y	25.3.1Define hepatitis and list the causes of hepatitis 25.3.2.Describe the pathogenesis of various viral hepatitis 25.3.3.Describe the morphology of viral hepatitis 25.3.4.Enumerate the complications and discuss the clinical consequences of hepatitis. 25.3.5.Describe the etiopathogenesis of toxic hepatitis 25.3.6.Discuss the clinical findings and laboratory findings in relation to the progression of hepatitis		voce
PA-25.4 **PA-25.5**	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis. Describe the aetiology, pathogenesis and complications of portal	K K	KH KH	Y Y	25.4.1.Describe the etiopathogenesis and pathophysiology of Alcoholic liver disease 25.4.2.Describe the stages of alcoholic liver disease with progression to cirrhosis 25.4.3.Define cirrhosis 25.4.4.Describe the etiopathogenesis, classification and pathology of cirrhosis 25.4.5.Enumerate the clinical manifestations and complications of cirrhosis 25.5.1 Define portal hypertension 25.5.2. Describe the etiopathogenesis of Portal hypertension	Lecture (1hr)	Written, Viva voce

	hypertension.				25.5.3.Enumerate the clinical consequences and complications of portal hypertension		
PA-25.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests	S	P	Y	Case scenario with liver function tests reports: 25.6.1.To distinguish between obstructive from non-obstructive jaundice (Charts) 25.6.2. Interpret liver function tests with viral hepatitis serology panel. 25.6.3. Identify gross and microscopic feature of cirrhosis. 25.6.4. Identify gross and microscopic feature of chronic cholecystitis. 25.6.5. Enumerate and recognise different types of gall stones.	DOAP (2hrs)	Skill assessment
PA25					Hepatobiliary system	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: RESPIRATORY SYSTEM (PA-26)							
PA-26.1	Define and describe the aetiology, types, pathogenesis, stages, morphology and complications of pneumonia.	K	KH	Y	26.1.1.Describe the etiological classification and pathogenesis of pneumonia. 26.1.2.Describe the stages of lobar pneumonia 26.1.3.Describe the morphology of Lobar and Bronchopneumonia. 26.1.4.List the complications of pneumonia 26.1.5.To list the differences between lobar and bronchopneumonia. 26.1.6. Discuss the causes and pathology of Acute	Lecture (1hr)	Written, Viva voce

PA 26.2	Describe the aetiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	Respiratory Distress Syndrome. 26.2.1.Enlist the causes for lung abscess 26.2.2.Describe the gross and microscopy of lung abscess 26.2.3.List the complications of lung abscess		
PA-26.3	Define and describe the aetiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD)	K	KH	Y	26.3.1.Define emphysema and list the types of emphysema 26.3.2.Describe the etiopathogenesis and morphology of emphysema 26.3.3.Define bronchiectasis, and describe the etiopathogenesis 26.3.4.Describe the gross morphology and microscopy of bronchiectasis 26.3.5.Describe the etiopathogenesis of Asthma 26.3.6.Enumerate the Pulmonary function test findings and list the complications of Obstructive airway disease.	Lecture (1hr)	Written, Viva voce
PA-26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	K	KH	Y	26.4.1.Define granulomatous inflammation and describe Ghon's complex 26.4.2.Describe the epidemiology, aetiology and pathogenesis of tuberculosis. 26.4.3.Differentiate between primary and secondary tuberculosis 26.4.4.Describe the natural history and spectrum of pulmonary tuberculosis 26.4.5.Discuss the spread and complications of	Lecture (1hr)	Written, Viva voce

					pulmonary Tuberculosis 26.4.6.Describe gross appearance and microscopy of Pulmonary Tuberculosis. 26.4.7.Describe the Laboratory diagnosis of Tuberculosis		
PA-26.5	Define and describe the aetiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	K	KH	Y	26.5.1.Define Pneumoconiosis and list the types according to the etiological agents 26.5.2.Describe the risk factors and pathogenesis of Pneumoconiosis. 26.5.3.Describe the gross and microscopy of common pneumoconiosis	Lecture (1hr)	Written, Viva voce
PA-26.6 **PA-26.7**	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance, metastases and complications of tumors of the lung and pleura. Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications	K K	KH KH	Y N	26.6.1. Classify the histologic types of lung carcinoma. Describe the etiopathogenesis of lung carcinoma 26.6.2.Describe the risk factors of lung carcinoma 26.6.3.Describe the gross and microscopy of the main histological types 26.6.4.Enumerate the spread of lung cancer 26.6.5.Distinguish the morphology of primary carcinoma lung and metastasis to lung 26.7.1Describe in brief the environmental influence and morphology of mesothelioma(non-core)	Lecture (1hr)	Written, Viva voce

	of mesothelioma.						
PA 26	Respiratory System	S	SH	Y	Identify the gross morphology of Pneumonia, Bronchiectasis, Emphysema, TB lung, Carcinoma lung. Identify the microscopy of lobar pneumonia and TB lung.	DOAP(2hrs)	Skill assessmen t
PA26					Respiratory System	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: CARDIOVASCULAR SYSTEM (PA-27)							
PA-27.1	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	K	KH	Y	27.1.1.Define arteriosclerosis and distinguish between the types of arteriosclerosis 27.1.2.Discuss the epidemiology and the role of risk factors in the pathogenesis of atherosclerosis 27.1.3.Describe the pathogenesis of atherosclerosis 27.1.4.Describe the morphology and microscopy of atherosclerotic plaque and the complicated plaque 27.1.5.Enumerate the clinical consequences of atherosclerosis in different organs	Lecture (1hr)	Written, Viva voce
PA-27.5	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic	K	KH	Y	27.5.1.Describe the epidemiology, risk factors and spectrum of IHD 27.5.2.Descibe pathogenesis and dynamic plaque changes in IHD 27.5.3.Describe the clinical presentations of IHD in relation to the plaque changes	Lecture (1hr)	Written, Viva voce

	heart disease				27.5.4.Describepathogenesis and response of myocardium to ischemia 27.5.5.Describe the gross and microscopy of myocardial infarction 27.5.6.Discuss the lab diagnosis and complications of acute coronary syndromes		
PA-27.2	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms.	K	KH	Y	27.2.1.Define aneurysm and enumerate the causes and types of aneurysms 27.2.2.Describe the dynamics and pathology of abdominal aortic aneurysm 27.2.3.Describe the clinical course and complications of aneurysms 27.2.4.Classify and discuss the pathology of aortic dissection	SGD(2hrs)	Written, Viva voce
PA-27.3	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure.	K	KH	Y	27.3.1.Describe the etiology, types and stages of heart failure 27.3.2.Describe the pathology and complications of heart failure		
PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system.	K	KH	N	27.10.1. Describe the pathology of Syphilitic aneurysms.(Optional)		
PA-27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and	K	KH	Y	27.4.1. Describe the etiopathogenesis of rheumatic fever 27.4.2.Describe the gross and microscopic features of	SGD(2hrs)	Written, Viva voce

	complications of rheumatic fever.				acute rheumatic carditis 27.4.3.Describe the gross and microscopic features of rheumatic valvular disease 27.4.4.Describe the clinical criteria and complications of acute rheumatic fever.		
PA-27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis.	K	KH	Y	27.6.1.Describe the etiology, pathogenesis and morphology of infective endocarditis 27.6.2.Differentiate between acute and sub-acute infective endocarditis 27.6.3.Describe and differentiate between the major forms of valvular vegetations		
PA 27.7	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion (PA-27.7)	K	KH	Y	27.7.1.Describe the etiology, types and pathology of pericarditis 27.7.2.Describe the morphological patterns of pericarditis 27.7.3.Describe the etiology and types of pericardial effusions	SGD(2hrs)	Written, Viva voce
PA 27.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	K	KH	N	27.9.1. Enumerate the etiology and types of cardiomyopathies 27.9.2.Enumerate the complications of cardiomyopathies. (Optional)		
PA	Interpret abnormalities in				27.8.1.Interpret abnormalities in serological cardiac	DOAP(2hrs)	Skill

27.8	cardiac function testing in acute coronary syndromes	S	SH	Y	function tests in acute coronary syndromes. Identify gross and microscopy of Atherosclerosis and Myocardial infarction		assessment
PA27					Cardiovascular system	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: URINARY TRACT (PA-28)							
PA-28.1	Describe the normal histology of the kidney.	K	K	Y	28.1.1 Recognize the normal structure of glomeruli, tubules, interstitium and blood supply of a Nephron.	Lecture (1hr)	Written, Viva voce
PA-28.5	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis.	K	KH	Y	28.5.1. Define glomerular diseases. 28.5.2. Classify glomerular diseases. 28.5.3. Discuss the etiopathogenesis emphasising the immune mechanism of glomerular injury. 28.5.4. Describe the morphology of Acute post infectious glomerulonephritis. 28.5.5. Discuss the clinical features of acute post infectious glomerulonephritis. 28.5.6. Distinguish between Nephritic and Nephrotic syndrome. 28.5.7. Distinguish the morphological features in RPGN, Minimal change disease and Chronic glomerulonephritis.		
PA-28.6	Define and describe the	K	KH	Y	28.6.1. Define IgA nephropathy		

	etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy**.**				28.6.2. Discuss the etiopathogenesis of IgA nephropathy. 28.6.3. Describe the morphological features in IgA nephropathy 28.6.4. Enumerate the lab findings in IgA nephropathy. 28.6.5. Mention the complications of IgA nephropathy.		
PA 28.2,	Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure.	K	KH	Y	28.2.1 Define Renal Failure. 28.2.2 Classify renal failure on etiological basis.	SGD(2hrs)	Written, Viva voce
PA-28.3	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure.	K	KH	Y	28.3.1 Define Acute renal failure. 28.3.2 Discuss the etiopathogenesis of ARF. 28.3.3 Describe the pathology of Acute Renal failure. 28.3.4 Enumerate the laboratory findings in acute renal failure. 28.3.5 Enumerate the clinical features and complications of ARF 28.3.6 Renal Function Tests		
PA-28.4	Define and describe the etiology, precipitating	K	KH	Y	28.4.1. Define chronic renal failure. 28.4.2. Discuss the etiopathogenesis of CRF.		

	factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure**.**				28.4.3. Describe the pathology of CRF. 28.4.4. Enumerate the laboratory findings in CRF. 28.4.5. Mention the complications of CRF.		
PA 28.8	Enumerate and classify diseases affecting the tubular Interstitium.	K	KH	Y	28.8.1. Enumerate the (2 major)processes of injury to the renal tubules and interstitium. 28.8.2. Discuss the etiological classification of Tubulo-interstitial Nephritis.	Lecture (1hr)	Written, Viva voce
PA-28.9	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis.	K	KH	Y	28.9.1. Define Acute tubular necrosis. 28.9.2. Discuss the etiopathogenesis of ATN. 28.9.3. Discuss the morphological features in ATN. 28.9.4. Enumerate the laboratory findings in ATN. 28.9.5. Discuss the progression and complications of ATN		
PA-28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	K	KH	Y	28.10.1. Discuss the etiopathogenesis of Acute pyelonephritis. 28.10.2. Describe the morphology in Acute pyelonephritis. 28.10.3. Enumerate the lab findings in Acute pyelonephritis. 28.10.4. Discuss the progression and complications of Acute pyelonephritis 28.10.5. Discuss the etiopathogenesis of Chronic pyelonephritis. 28.10.6. Describe the morphology of chronic pyelonephritis.		

					28.10.7. Enumerate the laboratory findings in chronic pyelonephritis. 28.10.8. List the complications of chronic pyelonephritis. 28.10.9. Enumerate the distinguishing features of acute and chronic pyelonephritis		
PA-28.7	Enumerate and describe the findings in glomerular manifestations of systemic disease.	K	KH	Y	28.7.1. Enlist the important systemic diseases showing glomerular involvement. 28.7.2. Describe the morphological features in Lupus nephritis. 28.7.3. Describe the morphological findings in Diabetic nephropathy	Lecture (1hr)	Written, Viva voce
PA-28.11	Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney.	K	KH	Y	28.11.1. Classify various vascular diseases of kidney. 28.11.2. Define Nephrosclerosis. 28.11.3. Mention types of nephrosclerosis. 28.11.4. Discuss the etiopathogenesis of benign nephrosclerosis 28.11.5. Describe the morphology in benign nephrosclerosis. 28.11.6. Enumerate the laboratory findings in benign nephrosclerosis. 28.11.7. Discuss the etiopathogenesis of Malignant nephrosclerosis. 28.11.8. Describe the morphology in malignant nephrosclerosis 28.11.9. Enumerate the laboratory findings malignant nephrosclerosis. 28.11.10. List the complications in malignant nephrosclerosis.		

PA-28.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies.	K	KH	N	28.11.11. Discuss the distinguishing features of benign and malignant nephrosclerosis. 28.15.1. Describe the etiopathogenesis, and genetics of Thrombotic Microangiopathies. 28.15.2. Describe the morphology in thrombotic microangiopathies. 28.15.3. Discuss the clinical features and progression of thrombotic microangiopathies. (Optional)		
PA-28.12	Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney**.**	K	KH	Y	28.12.1.Define cystic diseases of kidney 28.12.2.Classify various Cystic diseases of kidney. 28.12.3. Discuss the genetic inheritance, pathogenesis and, pathology of APKD. 28.12.4. Enumerate the laboratory and urinary findings in APKD. 28.12.5. Discuss the progression and complications of APKD 28.12.6.Describe the genetic inheritance, pathogenesis, and pathology of CPKD. 28.12.7. Mention the complications of CPKD.	SGD(2hrs)	Written, Viva voce
PA-28.13	Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone	K	KH	Y	28.13.1. Define obstuctive uropathy. 28.13.2. Classify obstructive uropathy based on causes. 28.13.3. Define Hydronephrosis. 28.13.4. Describe the etiopathogenesis, of hydronephrosis.		

	disease and obstructive uropathy				28.13.5. Describe the morphogy in hydronephrosis 28.13.6. Enumerate the laboratory findings in hydronephrosis. 28.13.7. Discuss the progression and complications of hydronephrosis. 28.13.8. Distinguish between hydronephrosis and APKD 28.13.9. Describe the various types of renal calculi. 28.13.10. Discuss the clinical features and complications of renal stones.		
PA-28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors.	K	KH	Y	28.14.1. Classify Renal tumors. 28.14.2. Discuss the etiopathogenesis and genetic abnormalities in RCC. 28.14.3. Describe the morphology of RCC. 28.14.4. Discuss the clinical features of RCC. 28.14.5. Discuss the progression and complications of RCC.	Lecture (1hr)	Written, Viva voce
PA-28.16	Describe the etiology, genetics, pathogenesis, pathology,presenting features and progression of Urothelial tumors**.**	K	KH	N	28.16.1. Discuss the etiopathogenesis of Urothelial tumors of urinary bladder. 28.16.2. Describe the morphology of Urothelial carcinoma of urinary bladder. 28.16.3. Discuss the clinical features and progression of Urothelial carcinoma. (Optional)	SDL (1hr)	Written, Viva voce
PA 28	Urinary System	S	SH	Y	Identify the gross and microscopic features of Chronic pyelonephritis and Renal cell carcinoma. Enumerate and identify types of renal stones.	DOAP(2hrs)	Skill assessment

					Identify gross morphology of Hydronephrosis.		
PA28					Urinary System	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: MALE GENITAL TRACT (PA-29)							
PA-29.1 **PA-29.2**	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors. Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis.	K K	KH KH	Y Y	29.1.1.Classify Testicular tumors 29.1.2.Describe the pathogenesis of germ cell tumors. 29.1.3. Describe the morphology of seminoma testis. 29.1.4. Discuss the presenting features, progression and spread of seminoma testis. 29.1.5. Distinguish seminoma and Non-seminomatous germ cell tumors. 29.1.6. Enumerate various bio-markers used in the diagnosis of germ cell tumors. 29.2.1. Discuss the pathogenesis of carcinoma penis. 29.2.2. Describe the morphology of carcinoma penis 29.2.3. Discuss the presenting features, progression and spread of carcinoma penis 29.2.4. Distinguish Condyloma acuminatum, Bowens disease and carcinoma penis.	Lecture (1hr)	Written, Viva voce

PA-29.3 **PA-29.4** **PA-29.5**	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia. Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate. Describe the etiology, pathogenesis, pathology and progression of prostatitis.	K K K	KH KH KH	Y Y N	29.3.1. Discuss the hormonal role in the pathogenesis of BPH. 29.3.2. Describe the morphological features of BPH. 29.3.3. Discuss the presenting features and urologic findings in BPH. 29.3.4. Enumerate the diagnostic tests in BPH. 29.4.1. Discuss the pathogenesis of Adenocarcinoma prostate emphasising the role of hormones. 29.4.2. Discuss the morphological findings in adenocarcinoma prostate. 29.4.3. Discuss the clinical features, progression and spread of adenocarcinoma prostate. 29.4.4. Enumerate the various diagnostic tests in adenocarcinoma prostate. 29.4.5. Distinguish the salient features of BPH and adenocarcinoma prostate. 29.5.1. Enumerate the causes of prostatitis. 29.5.2. Discuss the pathogenesis of chronic prostatitis (most common) 29.5.3. Describe the morphology of chronic prostatitis. 29.5.4. Discuss the progression of chronic prostatitis. (Optional)	Lecture (1hr)	Written, Viva voce
PA29		S	SH	Y	Identify the gross morphology of carcinoma penis. Identify the gross and microscopic features of seminoma testis. Identify the microscopic features of Benign prostatic hyperplasia.	DOAP(2hrs)	Skill assessment

TOPIC: FEMALE GENITAL TRACT (PA-30)

PA-30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the Cervix.	K	KH	Y	30.1.1 Describe the epidemiology of Carcinoma Cervix. 30.1.2 List the morphological types of carcinoma cervix 30.1.3 Describe the etiopathogenesis, clinical features and morphology of Squamous cell carcinoma- cervix. 30.1.4 Describe the Progression of CIN to carcinoma cervix 30.1.5 Describe the screening methods employed in carcinoma cervix with emphasis on pap smear collections methods and salient pap smear findings of carcinoma cervix. 30.6.1 Describe the etiology and morphologic features of cervicitis. (Optional)	Lecture (1hr)	Written, Viva voce
PA-30.6	Describe the etiology and morphologic features of cervicitis.	K	KH	N			
PA-30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium.	K	KH	Y	30.2.1 Discuss the etiopathogenesis of carcinoma - endometrium 30.2.2 Describe the morphology of endometrial carcinoma. 30.2.3 Discuss the premalignant lesions and its progression to carcinoma endometrium 30.2.4 Describe the Clinical features and spread of carcinoma endometrium	Lecture (1hr)	Written, Viva voce
	Describe the etiology,				30.7.1 Discuss the etiopathogenesis, clinical features, morphology of endometriosis. (Optional)		

PA-30.7 **PA-30.8** **PA-30.9**	hormonal dependence, features and morphology of endometriosis. Describe the etiology and morphologic features of adenomyosis. Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia.	K K K	KH KH KH	N N N	30.8.1 Describe the etiology and morphologic features of adenomyosis. (Optional) 30.9.1 Discuss the etiopathogenesis, clinical features, morphology of endometrial hyperplasia. (Optional)		
PA-30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	K	KH	Y	30.4.1 Classify ovarian tumours 30.4.2 Describe the pathogenesis, gross and microscopy of surface epithelial tumours. 30.4.3 Define and describe the pseudomyxoma peritonei. 30.4.4 Describe the classification, gross and microscopy of germ cell tumours. 30.4.5 Describe the gross and microscopy of mature cystic teratoma. 30.4.6 Describe the morphology of sex cord tumors. 30.4.7 Define and describe Krukenberg tumour and Struma ovarii. 30.4.8 Describe the clinical features, mode of spread and tumour markers used in ovarian tumour	Lecture (1hr)	Written, Viva voce

PA-30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	K	KH	Y	30.5.1 Define and classify the gestational trophoblastic diseases. 30.5.2 Describe the etiopathogenesis of Molar pregnancy, 30.5.3 Describe the gross and microscopy of complete/partial hydatidiform mole. 30.5.4 Describe the gross & microscopy of Invasive mole and gestational choriocarcinoma.	Lecture (1hr)	Written, Viva voce
PA-30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas	K/ S	KH/ SH	Y	30.3.1 Describe the etiology and pathogenesis of leiomyoma -uterus 30.3.2 List the morphological types of leiomyoma 30.3.3 Describe the gross and microscopy of leiomyoma 30.3.4 Describe the fate of leiomyoma 30.3.5 List the salient differences between leiomyoma with leiomyosarcoma uterus. 30.3.6 Identify gross and microscopy of leiomyoma 30.4.1. Identify and differentiate between the serous and mucinous tumours by their gross and microscopic features. 30.4.2. Identify the gross and microscopy of mature cystic teratoma. 30.5.2. Identify the gross and microscopy of	DOAP(2hrs)	Skill assessment

					hydatidiform mole.		
PA30					Male and Female Genital System	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: BREAST (PA-31)							
PA-31.1	Classify and describe the types, etiology, pathogenesis, hormonal dependency of breast pathology and benign disease.	K	KH	Y	31.1.1 Classify the benign epithelial lesions of breast and discuss their clinical significance 31.1.2. Discuss etiopathogenesis and morphology of fibrocystic disease 31.1.3. Definition and classification of Proliferative breast diseases (proliferative breast disease with atypia and proliferative breast disease without atypia). 31.1.4. Enumerate and briefly discuss the morphology of proliferative breast disease without atypia (Epithelial hyperplasia, sclerosing adenosis, Radial scar, Complex fibroadenoma and Duct Papilloma) 31.1.5. Define and list proliferative breast disease with atypia (Atypical ductal hyperplasia and atypical lobular hyperplasia). Discuss their clinical significance. 31.1.6. List the fibroepithelial neoplasms, Discuss their clinical significance and morphology (fibroadenoma and phyllodes tumour)	Lecture (1hr)	Written, Viva voce
PA-	Enumerate and describe the	K	KH	N	31.4.1 Describe the etiopathogenesis and morphology		

31.4	etiology, hormonal dependency and pathogenesis of gynecomastia.				of Gynaecomastia. (Optional)		
PA-31.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	K	KH	Y	31.2.1. Classify Breast carcinoma 31.2.2. Discuss epidemiology and etiopathogenesis of breast carcinoma, with a note on molecular mechanisms/subtypes 31.2.3. Discuss the gross and microscopy of invasive ductal carcinoma-NST, medullary carcinoma and lobular carcinoma 31.2.4. Discuss prognostic factors of breast carcinoma 31.2.5. Describe the clinical features, staging and spread of carcinoma- Breast 31.2.6. Discuss the clinical approach to breast lump with reference to carcinoma breast 31.2.7. Discuss the clinical significance and morphology of Paget's disease of nipple	Lecture (1hr)	Written, Viva voce
PA-31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast.	S	SH	N	31.3.1. Identify and describe the gross and microscopy of Infiltrating ductal carcinoma of breast (Optional) Identify gross and microscopic features of Fibroadenoma.	DOAP(2hrs)	Skill assessment
TOPIC: ENDOCRINE SYSTEM (PA-32)							
PA 32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and	K	KH	Y	32.1.1. Describe the pathogenesis of simple and multinodular Goitre 32.1.2. Describe role of Iodine and pathology in simple	Lecture (1hr)	Written, Viva voce

	iodine dependency of thyroid swellings				and multinodular goitre 32.1.3. Classify thyroid neoplasms 32.1.4 Describe the role of iodine in papillary thyroid carcinoma 32.1.5. Describe the pathogenesis and pathology of papillary thyroid carcinoma		
PA-32.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis.	K	KH	Y	32.2.1. Define Thyrotoxicosis 32.2.2. Enumerate etiology of Thyrotoxicosis 32.2.3. Describe the etiopathogenesis and clinical features of Grave's disease 32.2.4. Describe role of Iodine in Thyrotoxicosis 32.2.5. Describe the Clinical Features of Thyrotoxicosis 32.2.6. Describe the laboratory and imaging features of Thyrotoxicosis 32.2.7. Describe the Clinical course of thyrotoxicosis 32.2.8. Discuss the morphological changes in Grave's disease 32.2.9. Describe the testing methods to diagnose Graves' disease	SGD(2hrs)	Written, Viva voce
PA-32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism.	K	KH	Y	32.3.1. Define Hypothyroidism 32.3.2. Enumerate etiology of Hypothyroidism 32.3.3. Describe the pathogenesis of Hypothyroidism 32.3.4. Describe role of Iodine in Hypothyroidism 32.3.5. Describe the Clinical Features of Hypothyroidism 32.3.6. Describe the laboratory and imaging features of Hypothyroidism 32.3.7. Describe the Clinical course of Hypothyroidism 32.3.8. Describe the etiopathogenesis and pathology of Hashimoto's thyroiditis		

PA-32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	K	KH	Y	32.4.1. Define Diabetes Mellitus 32.4.2. Describe epidemiology of Diabetes Mellitus 32.4.3. Enumerate etiology of Diabetes Mellitus 32.4.4. Describe the pathogenesis of Diabetes Mellitus 32.4.5. Describe the pathology of Diabetes Mellitus 32.4.6. Describe the Clinical Features of Diabetes Mellitus 32.4.7. Describe the laboratory features of Diabetes Mellitus 32.4.8. List the complications of Diabetes Mellitus 32.4.9. Describe the Pathogenesis of complication of Diabetes Mellitus 32.4.10. Describe the Laboratory features of complications of Diabetes Mellitus 32.4.11. Describe the Clinical course of Diabetes Mellitus	Lecture (1hr)	Written, Viva voce
PA-32.5	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism.	K	KH	N	32.5.1. Define hyperparathyroidism 32.5.2. Describe the genetics of hyperparathyroidism 32.5.3. Enumerate etiology of hyperparathyroidism 32.5.4. Describe the pathogenesis of hyperparathyroidism 32.5.5. Identify the Morphological features of hyperparathyroidism 32.5.6. Describe the Clinical Features of hyperparathyroidism 32.5.7. Interpret the laboratory features of hyperparathyroidism. (Optional)	SDL (1hr)	Written, Viva voce
PA-32.6	Describe etiology, pathogenesis, manifestations,	K	KH	N	32.6.1. Define Pancreatic Cancer 32.6.2. Enumerate etiology of Pancreatic Cancer	SDL (1hr)	Written,

	laboratory, morphologic features, complications and metastases of pancreatic cancer.				32.6.3. Describe the pathogenesis of Pancreatic Cancer 32.6.4. Describe the Morphological features of Pancreatic Cancer 32.6.5. Describe the Clinical Features of Pancreatic Cancer 32.6.6. Describe the laboratory features of Pancreatic Cancer 32.6.7. Describe the complications of Pancreatic Cancer 32.6.8. Describe the pathology of metastatic pancreatic Cancer (Optional)		Viva voce
PA-32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	K	KH	N	32.7.1. Define Adrenal insufficiency 32.7.2. Enumerate etiology of Adrenal insufficiency 32.7.3. Describe the pathogenesis of Adrenal insufficiency 32.7.4. Describe the Morphological features of Adrenal insufficiency 32.7.5. Describe the Clinical Features of Adrenal insufficiency 32.7.6. Describe the Laboratory Features of Adrenal insufficiency 32.7.7. Describe the complications of Adrenal insufficiency. (Optional)	SDL (1hr)	Written, Viva voce
PA-32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic	K	KH	N	32.8.1. Define Cushing's syndrome 32.8.2. Enumerate etiology of Cushing's syndrome 32.8.3. Describe the pathogenesis of Cushing's		

	features complications of Cushing's syndrome.				syndrome 32.8.4. Describe the morphological features of Cushing's syndrome 32.8.5. Describe the Clinical Features of Cushing's syndrome 32.8.6. Describe the Laboratory Features of Cushing's syndrome 32.8.7. Describe the complications of Cushing's syndrome. (Optional)		
PA-32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms.	K	KH	N	32.9.1. Classify adrenal neoplasms 32.9.2. Enumerate etiology of adrenal neoplasms 32.9.3. Describe the pathogenesis of adrenal neoplasms 32.9.4. Describe the morphological features of adrenal neoplasms 32.9.5. Describe the clinical features of adrenal neoplasms 32.9.6. Describe the laboratory features of adrenal neoplasms. (Optional)	SDL (1hr)	Written, Viva voce
PA-32		S	SH	Y	Identify the gross and microscopic features of Multinodular goitre and Papillary carcinoma. Identify the microscopic features of Hashimoto's thyroiditis.	DOAP (2hrs)	Skill assessment
PA-32					Endocrine System	Tutorial/ Formative assessment (2hrs)	Written, Viva voce

TOPIC: BONE AND SOFT TISSUE (PA-33)							
PA-33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	33.1.1. Define Osteomyelitis 33.1.2. Classify Osteomyelitis 33.1.3. Enumerate etiology of Osteomyelitis 33.1.4. Describe pathogenesis of Osteomyelitis 33.1.5. Describe the Morphological features of Osteomyelitis 33.1.6. Describe the Clinical Features of Osteomyelitis 33.1.7. Describe the Radiological Features of Osteomyelitis 33.1.8. Describe the complications of Osteomyelitis	Lecture (1hr)	Written, Viva voce
PA-33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	K	KH	Y	33.2.1. Define Bone tumours 33.2.2. Classify Bone tumours 33.2.3. Enumerate etiology of Bone tumours 33.2.4. Describe pathogenesis of Bone tumours 33.2.5. Describe the morphological features of Bone tumours 33.2.6. Describe the clinical features of Bone tumours (Giant cell tumour, Osteosarcoma, Ewing's tumour) 33.2.7. Describe the radiological features of Bone tumours 33.2.8. Describe the complications of Bone tumours 33.2.9. Describe the pathology of Bone tumour metastasis	Lecture (1hr)	Written, Viva voce
PA-33.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and	K	KH	Y	33.3.1. Define soft tissue tumors. 33.3.2. Classify soft tissue tumors. 33.3.3. Enumerate etiology of soft tissue tumors. 33.3.4. Describe pathogenesis of soft tissue tumors.	SGD(2hrs)	Written, Viva voce

	complications and metastases of soft tissue tumors				33.3.5. Describe the morphological features of soft tissue tumors. 33.3.6. Describe the clinical features of soft tissue tumors. 33.3.7. Describe the radiological features of soft tissue tumors. 33.3.8. Describe the complications of soft tissue tumors. 33.3.9. Describe the pathology of soft tissue tumour metastasis		
PA-33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone.	K	KH	N	33.4.1. Define Paget's disease of the bone 33.4.2. Enumerate etiology of Paget's disease of the bone 33.4.3. Describe pathogenesis of Paget's disease of the bone 33.4.4. Describe the Morphological features of Paget's disease of the bone 33.4.5. Describe the Clinical Features of Paget's disease of the bone 33.4.6. Describe the Radiological Features of Paget's disease of the bone 33.4.7. Describe the complications of Paget's disease of the bone. (Optional)	SDL (2hrs)	Written, Viva voce
PA-33.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of	K	KH	N	33.5.1. Define Rheumatoid Arthritis 33.5.2. Classify Rheumatoid Arthritis 33.5.3. Enumerate etiology of Rheumatoid Arthritis 33.5.4. Describe immunology of Rheumatoid Arthritis 33.5.5. Describe pathogenesis of Rheumatoid Arthritis 33.5.6. Describe the morphological features of Rheumatoid Arthritis		

	rheumatoid arthritis.				33.5.7. Describe the clinical features of Rheumatoid Arthritis 33.5.8. Describe the laboratory features of Rheumatoid Arthritis 33.5.9. Describe the radiological features of Rheumatoid Arthritis 33.5.10. Enumerate the diagnostic criteria of Rheumatoid Arthritis 33.5.11. Describe the complications of Rheumatoid Arthritis. (Optional)		
PA-33		S	SH	Y	Identify the gross and microscopic features of Osteoclastoma and Osteosarcoma.	DOAP(2hrs)	Skill assessment
TOPIC: SKIN (PA-34)							
PA-34.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin.	K	KH	Y	34.1.1. Describe the risk factors of squamous cell carcinoma of the skin 34.1.2. Describe the pathogenesis of squamous cell carcinoma of the skin 34.1.3. Describe the pathology of squamous cell carcinoma of the skin 34.1.4. Describe the natural history of squamous cell carcinoma of the skin	Lecture (1hr)	Written, Viva voce
PA-34.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin**.**	K	KH	Y	34.2.1. Describe the risk factors of basal cell carcinoma of the skin 34.2.2. Describe the pathogenesis of basal cell carcinoma of the skin		

PA-34.3	Describe the distinguishing features between a nevus andmelanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma.	K	KH	N	34.2.3. Describe the pathology of basal cell carcinoma of the skin 34.2.4. Describe the natural history of basal cell carcinoma of the skin 34.3.1. Define nevus 34.3.2. Define Melanoma 34.3.3. Describe the distinguishing features between a nevus and melanoma. 34.3.4. Enumerate the etiology of melanoma 34.3.5. Describe the risk factors of melanoma 34.3.6. Describe the pathogenesis of melanoma 34.3.7. Describe the morphology of melanoma 34.3.8. Describe the clinical features of melanoma 34.3.9. Describe the pathology of metastatic melanoma.(Optional)		
PA-34.4	Identify, distinguish and describe common tumors of the skin	S	SH	N	**Covered in DOAP 8** 34.4.1. Identify Common tumours of skin 34.4.2. Distinguish the common tumours of the skin. 34.4.3. Describe the common tumours of the skin.	DOAP(2hrs)	Skill assessment
TOPIC: CENTRAL NERVOUS SYSTEM (PA-35)							
PA-35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis.	K	KH	Y	35.1.1. Enumerate the etiology of meningitis 35.1.2. Enumerate the types of meningitis 35.1.3. Describe the pathogenesis of meningitis. 35.1.4. Describe the differentiating factors in different types of meningitis 35.1.5. Describe the CSF findings in meningitis.	DOAP(2hrs)	Written, Viva voce, Skill assessment
PA	Identify the etiology of meningitis based on given	S	P	Y	35.3.1. Identify the etiology of meningitis based on given CSF parameters		

35.3	CSF parameters.						
PA-35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS Tumours.	K	KH	Y	35.2.1. Classify CNS tumours 35.2.2. Describe the etiopathogenesis of CNS tumours 35.2.3. Describe the genetics of CNS tumours 35.2.4. Describe the pathology of CNS tumours. 35.2.5. Describe the clinical features 35.2.6. Describe the sequelae of CNS tumour 35.2.7. Describe complications of CNS tumours.	Lecture (1hr)	Written, Viva voce
PA 19, 33, 34, 35					Skin, Bone, CNS, Lymph node	Tutorial/ Formative assessment (2hrs)	Written, Viva voce
TOPIC: EYE (PA-36)							
PA 36.1	Describe the etiology, genetics, pathogenesis, pathology,presentation, sequelae and complications of retinoblastoma	K	KH	N	To be covered with paediatric and genetic diseases		Written, Viva voce

TOPICS FOR SELF DIRECTED LEARNING (SDL)

Sl.no	Competency	Topic	Hours
1.	**PA-6.4a**	Define and describe normal haemostasis	1
2.	**PA-12.1**	Enumerate and describe the pathogenesis of disorders caused by air pollution	1
3.	**PA-12.1**	Enumerate and describe the pathogenesis of disorders caused bytobacco and alcohol	1
4.	**PA-13.1**	Describe hematopoiesis and extramedullary hematopoiesis	1
5.	**PA-28.16**	Describe the etiology, genetics, pathogenesis, pathology,presenting features and progression of urothelial tumors**.**	1
6.	**PA-32.5**	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism.	1
7.	**PA-32.6**	Describe, etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	1
8.	**PA-32.7** **PA-32.8**	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features and complicationsof adrenal insufficiency. Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features and complicationsof Cushing's syndrome.	1
9.	**PA-32.9**	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms.	1
10	**PA-33.4**	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features andcomplications of Paget's disease of the bone.	1
11	**PA-33.5**	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis.	1
12		Study on Corona Virus	1

CERTIFIABLE COMPETENCIES

It should be certified that the student is competent to perform the below skills independently without supervision.

SI. NO	NUMBER	COMPETENCY
1	**PA-16.6**	Prepare peripheral blood smear. Identify microcytic hypochromic anaemia, macrocytic anaemia and haemolytic anaemia
2	**PA-25.6**	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests
3	**PA32.3**	Identify Hypothyroidism &Hyperthyroidism based on the clinical features and Thyroid function tests.
4	**PA-35.3**	Identify the etiology of meningitis based on given CSF parameters

NOTE: The evaluation of charts on certifiable competencies should be completed in formative and internal assessment and duly documented in the log book.

TIME TABLE

<table>
<tr><td>TIME
DAYS</td><td>8-9AM</td><td colspan="2">9:00AM-12:00 NOON</td><td>12:00NOON-
1:00PM</td><td>1:00-2:00PM</td><td colspan="2">2:00-300PM</td><td>3:00-4:00PM</td></tr>
<tr><td>MONDAY</td><td>MICROBIOLOGY</td><td colspan="2" rowspan="5">CLINICAL POSTINGS</td><td rowspan="8">LUNCH</td><td>PATHOLOGY</td><td colspan="2">PATHOLOGY/MICROBIOLOGY PRACTICALS</td></tr>
<tr><td>TUESDAY</td><td>MEDICINE</td><td>COMMUNITY MEDICINE</td><td colspan="2">PATHOLOGY/MICROBIOLOGY PRACTICALS</td></tr>
<tr><td>WEDNESDAY</td><td>MICROBIOLOGY</td><td>PATHOLOGY</td><td colspan="2">FORENSIC MEDICINE</td></tr>
<tr><td>THURSDAY</td><td>COMMUNITY MEDICINE</td><td>PHARMACOLOGY</td><td colspan="2">PHARMACOLOGY</td></tr>
<tr><td>FRIDAY</td><td>OBG</td><td>PATHOLOGY</td><td>PHARMACOLOGY</td><td>MICROBIOLOGY</td></tr>
<tr><td rowspan="2">SATURDAY</td><td rowspan="2">GENERAL SURGERY</td><td>9:00-11:00 AM</td><td>11:00-12:00NOON</td><td rowspan="2">PATHOLOGY</td><td colspan="2" rowspan="2">AETCOM</td></tr>
<tr><td>PHARMACOLOGY</td><td>MICROBIOLOGY</td></tr>
<tr><td></td><td></td><td colspan="2"></td><td></td><td></td><td colspan="2"></td></tr>
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COMPETENCY DISTRIBUTION

SI.NO		TOPIC
LECTURES TO BE COVERED		
1.	PA 1	PA1.2 Enumerate common definitions and terms used in Pathology PA1.3 Describe the history and evolution of Pathology
2.	PA 2	PA2.1 Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance
3.	PA 2	PA2.2 Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury
4.	PA 2	PA2.3 Intracellular accumulation of fats, proteins, carbohydrates, pigments
5.	PA 2	PA2.4 Describe and discuss Cell death- Apoptosis and autolysis
6.	PA 2	PA2.7 Describe and discuss the mechanisms of cellular aging and apoptosis
7.	PA 4	PA4.1 Define and describe the general features of acute and chronic inflammation including stimuli, vascular events
8.	PA 4	PA4.1 Define and describe the general features of acute and chronic Inflammation including stimuli, and cellular events
9.	PA 4	PA4.2 Enumerate and describe the mediators of acute inflammation
10.	PA 4	PA4.3 Define and describe chronic inflammation including causes, types enumerate types, non-specific and granulomatous; and examples of each
11.	PA 5	PA5.1 Define and describe the process of repair and regeneration including wound healing and its types
12.	PA 6	PA6.1 Define and describe edema, its types, pathogenesis and clinical correlations
13.	PA 6	PA6.3 Define and describe shock, its pathogenesis and its stages
14.	PA 6	PA6.4 Describe the etiopathogenesis and consequences of thrombosis
15.	PA 6	PA6.5 Define and describe embolism and its causes and common types
16.	PA 7	PA7.1 Define and classify neoplasia. biologic, behaviour and spread
17.	PA 7	PA7.1 Define and classify neoplasia. biologic, behaviour and spread
18.	PA 7	PA7.2 Describe the molecular basis of cancer
19.	PA 7	PA7.2 Describe the molecular basis of cancer

20.	PA 7	PA7.3 Enumerate carcinogens and describe the process of carcinogenesis
21.	PA 7	PA7.3 Enumerate carcinogens and describe the process of carcinogenesis
22.	PA 9	PA9.3 HLA system and the immune principles. Describe the involved in transplant and mechanism of transplant rejection
23.	PA 9	PA9.4 Define autoimmunity. Enumerate autoimmune disorders
24.	PA 9	PA9.5 Define and describe the pathogenesis of Systemic Lupus Erythematosus
25.	PA 9	PA9.6 Define and describe the pathogenesis and pathology of HIV and AIDS
26.	PA 9	9.7 Define and describe the pathogenesis of other common autoimmune diseases
27.	PA 10	PA10.3 Define and describe the pathogenesis and pathology of leprosy
28.	PA 13	PA13.3 Define and classify anemia
29.	PA 13	PA13.4 Enumerate and describe the investigation of anemia
30.	PA 14	PA14.1 Describe iron metabolism PA14.2 Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia
31.	PA 15	PA15.1 Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency PA15.2 Describe laboratory investigations of macrocytic anemia PA15.4 etiology and Written/ Viva voce General Medicine distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia
32.	PA 16	PA16.1 Define and classify hemolytic anemia PA16.2 Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia PA16.5 Describe the peripheral blood picture in different hemolytic anaemias
33.	PA 16	PA16.3 Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anaemia and thalassemia
34.	PA 16	PA16.4 Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired haemolytic anaemia
35.	PA 17	PA 17.1 Enumerate the etiology, pathogenesis and findings in aplastic anemia PA17.2 Enumerate the indications and describe the findings in bone marrow aspiration and biopsy
36	PA 18	PA 18.2 Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute leukemia
37	PA 18	PA 18.2 Describe the etiology, genetics, pathogenesis classification, features, hematologic features of chronic leukemia
	PA 19	PA19.4 Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma

39	PA 21	PA21.1 Describe normal hemostasis and etiology, pathogenesis and pathology haemophilias
40	PA 21	PA21.2 Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP
41	PA 21	PA21.4 Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of DIC PA21.5 Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K def.
42	PA 22	PA22.4 Enumerate blood components and describe their clinical uses PA22.5 Enumerate and describe infections transmitted by blood transfusion
43	PA 22	PA22.6 Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction PA22.7 Enumerate the indications and describe the principles and procedure of autologous transfusion
44	PA 11	PA11.1 Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood with laboratory diagnosis of Genetic disorder
45	PA 11	PA11.2 Describe the pathogenesis and pathology of tumor and tumour like conditions in infancy and childhood (Nephroblastoma, Retinoblastoma, Neuroblastoma)
46	PA 11	PA11.3 Describe the pathogenesis of common storage disorders in infancy and childhood
47	PA 12	PA12.2 Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation
48	PA 12	PA12.3 Describe the pathogenesis of obesity and its consequences
49	PA 24	PA24.1 Describe the etiology, pathogenesis, pathology and clinical features of oral cancers include salivary gland tumors
50 -	PA 24	PA24.2 Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease PA24.3 Describe and identify the microscopic features of peptic ulcer
51	PA 24	PA24.6 Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease
52	PA 24	PA24.7 Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon
53	PA 25	PA25.2 Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences PA25.3 Describe the etiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis
54	PA 25	PA25.4 Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis PA 25.5 Describe the etiology, pathogenesis and complications of portal hypertension
55	PA 27	PA27.1 Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types

56	PA 27	PA27.5 Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease
57	PA 26	PA26.1 Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia PA26.2 Describe the etiology, gross and microscopic appearance and complications of lung abscess
58	PA 26	PA26.3 Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Chronic Bronchitis and Emphysema
59	PA 26	PA26.4 Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis – include other organs with Tuberculosis
60	PA 26	PA26.5 Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease
61	PA 26	PA26.6 Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance, metastases and complications of tumors of the lung and pleura PA26.7 Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma
62	PA 28	PA28.1 Describe the normal histology of the kidney PA28.5 Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis PA28.6 Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy
63	PA 28	PA28.8 Enumerate and classify diseases affecting the tubular interstitium PA28.9 Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis PA28.10 Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy
64	PA 28	PA28.7 Enumerate and describe the findings in glomerular manifestations of systemic disease PA28.11 Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney PA28.15 Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies
65	PA 28	PA28.14 Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors

66	PA 29	PA29.1 Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors PA29.2 Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis
67	PA 29	PA29.3 Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia PA29.4 Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate PA29.5 Describe the etiology, pathogenesis, pathology and progression of prostatitis
68	PA 30	PA30.1 Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of thecervix PA30.6 Describe the etiology and morphologic features of cervicitis
69	PA 30	PA30.2 Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium PA30.7 Describe the etiology, hormonal dependence, features and morphology of endometriosis PA30.8 Describe the etiology and morphologic features of adenomyosis PA30.9 Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia
70	PA 30	PA30.4 Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors
71	PA 30	PA30.5 Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms
72	PA 31	PA31.1 Classify and describe the types, etiology, pathogenesis, hormonal dependency of breast pathology and benign disease PA31.4 Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia
73	PA 31	PA31.2 Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast
74	PA 33	PA33.1 Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis
75	PA 33	PA33.2 Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors
76	PA 32	PA32.1 Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid

		swellings with Thyroid neoplasms
77	PA 32	PA32.4 Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus
78	PA 35	PA35.2 Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications Of CNS tumors
79	PA 34	PA34.1 Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin PA34.2 Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin PA34.3 Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma

SMALL GROUP DISCUSSION TOPICS TO BE COVERED

1	PA 1.1	PA 1.1-Describe the role of a pathologist in diagnosis and management of disease
2	PA2.6	PA2.6 -Describe and discuss cellular adaptations: atrophy, Hypertrophy, hyperplasia, metaplasia, dysplasia
3	PA-3	PA 3.1-Describe the pathogenesis and pathology of amyloidosis PA 3.2-Identify and describe amyloidosis in a pathology specimen
4	PA-2	Tutorial/ Formative assessment- Cell Injury
5	PA 4	Tutorial/ Formative assessment - Inflammation
6	PA 5	Tutorial / formative assessment- Healing and repair
7	PA- 6	Tutorial/ Formative assessment – Hemodynamic Disorders
8	PA 7	PA7.4 Describe the effects of tumor on the host including paraneoplastic syndrome PA7.5 Describe immunology and the immune response to cancer
9	PA 7	Tutorial/ Formative assessment-Neoplasia.
10	PA 9.1,9.2	PA 9.1Describe the principles and mechanisms involved in immunity PA9.2 Describe the mechanism of hypersensitivity reactions
11	PA 16.4	Case based discussion of 1.Sickle cell anemia; 2. Thalassemia; 3. Hereditary spherocytosis; 4. Autoimmune hemolytic anemia
12	PA 18	PA18.1 Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions.
13	PA 13	Tutorials/ Formative assessment- Anaemia And Leukemia**.**

14	PA 8	PA8.1 Describe the diagnostic role of cytology and its application in clinical care.
15	PA 8	PA 8.2 PAP smear, body fluid cytology
16	PA 19	PA19.1 Enumerate the causes and describe the differentiating features of lymphadenopathy. PA19.6 Enumerate and differentiate the causes of splenomegaly PA19.7 Identify and describe the gross specimen of an enlarged spleen.
17	PA 19	PA19.2 Describe the pathogenesis and pathology of tuberculous lymphadenitis.
18	PA 20	PA 20.1 Myeloma - CHARTS
19	PA 21	PA21.3 Differentiate platelet from clotting disorders based on the clinical and hematologic features.
20	PA 23	PA23.2 Describe abnormal findings in body fluids in various disease States- semen analysis with transudate, exudate and cytology
21	PA 10	PA10.1 Define and describe the pathogenesis and pathology of malaria. PA10.2 Define and describe the pathogenesis and pathology of Cysticercosis
22	PA 10	PA10.4 Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases
23	PA 10	PA10.4 Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases
24	PA 24	PA24.4 Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach
25	PA 24	Tutorial- Gastrointestinal system
26	PA 25	PA25.1 Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct andindirect hyperbilirubinemia
27	PA 25	Tutorial / Formative assessment- Hepatobiliary System
28	PA 27	PA27.7 Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications ofpericarditis and pericardial effusion PA27.9 Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis andcomplications of cardiomyopathies
29	PA 27	PA27.4 Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever PA27.6 Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis
30	PA 27	PA27.2 Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms PA27.3 Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure PA27.10 Describe the etiology, pathophysiology, pathology features and complications of syphilis on the CVS.

31	PA 27	Tutorials/ Formative assessment- Cardiovascular system
32	PA 26	Tutorial/ Formative assessment- Respiratory System
33	PA 28	PA28.2 Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology,clinical and laboratory and urinary findings, complications of renal failure PA28.3 Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure – with RFT PA28.4 Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure
34	PA 28	PA28.12 Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney PA28.13 Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone disease and obstructive uropathy
35	PA 28	Tutorial/ Formative assessment- Urinary System
36	PA 29,30	Tutorial/ Formative assessment- Male Genital System And Female Genital System
37	PA 32	PA32.2 Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis PA32.3 Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/hypothyroidism with Thyroid function test.
38	PA 32	Tutorial/ Formative assessment- Endocrine System
39	PA 33	PA33.3 Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors
40	PA 34, 33,19,35	Tutorial/ Formative assessment- Skin, Bone, CNS, Lymph Node

DOAP TOPICS TO BE COVERED		
1	PA 2.5	Degeneration Specimens-Fatty liver Slides- Fatty liver, dystrophic calcification, hyaline degeneration
2	PA 2.8	Necrosis

		Specimen- Gangrene Slides- Coagulative necrosis, Caseous necrosis.
3	PA 4.4	Acute Inflammation Specimen- Acute appendicitis, Lobar Pneumonia Slides- Acute appendicitis, Lobar Pneumonia
4	PA 4.4	Chronic Inflammation Specimens- TB lymph node, Madura foot Slide- Granulation tissue, TB lymph node, Actinomycosis, Rhinosporidiosis
5	PA 6.2, PA 6.7	CVC and Infarction Specimen- CVC Liver (Optional). Infarction- Spleen Slide- CVC lung, CVC liver (Optional), CVC Spleen (Optional), Infarction- Spleen
6	PA 7	Benign tumors Specimen - Lipoma Slide- Hemangioma, Schwannoma, Lipoma
7	PA 7	Malignant tumors Specimen- Squamous cell carcinoma, Adenocarcinoma Slide- Squamous cell carcinoma, Basal cell carcinoma, Adenocarcinoma, Transitional cell carcinoma (Optional)
8	PA 13.2 PA 13.5	Anticoagulants-Different vaccutainers OSPE-Prepare peripheral blood smear and reporting Slides- Normocytic normochromic blood picture, Eosinophilia.
9.		Revision of Slides/Specimen/Charts
10	PA 14, 15	Anaemia Slides-Microcytic hypochromic anaemia and Dimorphic anaemia
11	PA 16.6	Hemolytic anaemia Slides- Sickle cell anaemia/ Thalassemia/ Autoimmune haemolytic anaemia
12	PA 18	Leukemias Slides- Chronic myeloid leukemia, Chronic lymphoid leukemia. Acute leukemia (Optional)
13	PA 19	Lymph node / spleen Specimen- Enlarged spleen, TB lymph node Slide- TB lymph node, Hodgkin's lymphoma
14	PA 22	Blood grouping:OSPE-Forward grouping -Slide/ tube method

15	PA 23.1	Urine examination Physical examination Chemical examination- Introduce strip methodology. Tests for Reducing substances, Protein, Blood, Ketone bodies. Bilirubin and Bile salts (Optional).
16	PA 24.3	Gastrointestinal system Specimen- Peptic ulcer, Gastric carcinoma, Carcinoma colon. TB intestine (Optional). Slide- Pleomorphic adenoma, carcinoma colon. TB intestine (Optional). Gastric carcinoma (Optional).
17	PA 25	Hepatobiliary system Specimen-Cirrhosis, Chronic cholecystitis with Gall stones Slide- Cirrhosis, Chronic cholecystitis
18	PA 27	Cardiovascular system Specimen- Atherosclerosis, Myocardial infarction Slide- Atherosclerosis, Myocardial infarction
19	PA- 26	Respiratory System Specimen-Pneumonia , Bronchiectasis, Emphysema, TB lung, Carcinoma lung Slide- Pneumonia, TB lung (Optional).
20		Revision of Slides/Specimen/Charts
21	PA 28	Urinary system Specimen- Chronic pyelonephritis, Renal stones with hydronephrosis, Renal cell carcinoma Slide- Chronic pyelonephritis, Renal cell carcinoma
22	PA 29	Male genital system Specimen- Seminoma testis, Carcinoma penis Slide-Seminoma testis, Benign prostatic hyperplasia
23	PA 30	Female genital system Specimen-Leiomyoma, Carcinoma cervix, Benign Cystic Teratoma, Serous/Mucinous Cystadenoma. Hydatidiform mole (Optional). Slides- Leiomyoma, Serous/Mucinous Cystadenoma, Hydatidiform mole. Benign Cystic Teratoma (Optional)
24	PA 31	Breast Specimen- Fibroadenoma. Carcinoma breast (Optional) Slide- Fibroadenoma. Carcinoma breast (Optional)
25	PA 32	Endocrine System

		Specimen- Multinodular goitre, Papillary carcinoma Slide- Multinodular goitre, Hashimoto's thyroiditis, Papillary carcinoma thyroid.
26	PA 33	Bone tumors Specimen- Osteoclastoma, Osteosarcoma Slide- Osteoclastoma. Osteosarcoma (Optional)
27	PA 35	Central nervous system Charts- Interpretation of CSF findings in various meningitis.

LIST OF INSTRUEMENTS, SPECIMENS, SLIDES AND CHARTS

LIST OF INSTRUMENTS

Sl .no	**Instruments**
1.	Lumbar Puncture Needle
2.	Bone marrow Aspiration Needle
3.	Wintrobe's Tube
4.	Westergren's ESR Tube
5.	Urinometer
6.	R.B.C Pipette
7.	W.B.C Pipette
8.	Sahli's Haemoglobinometer
9.	Neubauer's Counting Chamber
10.	Hb Pipette
11.	EDTA Tube
12.	Sodium Citrate Tube
13.	Plain vaccutainer
14.	Heparin tube
15.	Blood collection bag

LIST OF SPECIMENS

Sl. No.	Gross specimens
1.	Fatty liver
2.	Gangrene
3.	TB lymph node
4.	Acute appendicitis
5.	CVC liver
6.	Lipoma
7.	Squamous cell carcinoma foot
8.	Adenocarcinoma colon
9.	Enlarged spleen
10.	Gastric carcinoma
11.	Cirrhosis
12.	Gall bladder with gall stones
13.	Bronchiectasis
14.	Carcinoma lung
15.	Atherosclerosis
16.	Renal cell carcinoma
17.	Hydronephrosis
18.	Carcinoma Penis
19.	Seminoma testis
20.	Leiomyoma
21.	Teratoma ovary
22.	Hydatidiform mole
23.	Serous/ Mucinous cystadenoma ovary

24.	Carcinoma Cervix
25.	Fibroadenoma
26.	Multinodular goitre
27.	Papillary carcinoma thyroid
28.	Osteoclastoma
29.	Osteosarcoma
30.	Ewings sarcoma

LIST OF SLIDES

SL. NO.	Slides
1.	Fatty liver
2.	Hyaline degeneration (leiomyoma)
3.	Coagulative necrosis
4.	Caseous necrosis
5.	Acute appendicitis
6.	TB lymph node
7.	Actinomycosis
8.	Rhinosporidiosis
9.	CVC lung
10.	Lipoma
11.	Hemangioma
12.	Schwannoma
13.	Squamous cell carcinoma
14.	Fibroadenoma
15.	Basal cell carcinoma

16.	Adenocarcinoma-colon
17.	Hodgkin's lymphoma
18.	Pleomorphic adenoma
19.	Cirrhosis of Liver
20.	Chronic cholecystitis
21.	Atherosclerosis
22	Renal cell carcinoma
23	Seminoma
24	Benign prostatic hyperplasia
25	Leiomyoma
26	Hydatidiform mole
27	Serous cystadenoma/ Mucinous cystadenoma
28	Osteoclastoma
29	Multinodular goitre
30	Hashimoto's thyroiditis
31	Papillary carcinoma thyroid
Hematology	
1.	Normocytic normochromic blood picture
2.	Eosinophilia
3.	Microcytic hypochromic anaemia
4.	Dimorphic anaemia
5.	Chronic lymphoid leukemia
6.	Chronic myeloid leukemia

LIST OF CHARTS

Sl. no	Charts
1.	Cytology: Malignant cells in Pap smear.
2.	Body fluids-Pleural/Ascitic (exudate/transudate)
3.	CSF analysis for Meningitis - Viral
4.	CSF analysis for Meningitis - Bacterial
5.	CSF analysis for Meningitis - Tubercular
6.	Viral hepatitis- Acute phase
7.	Viral hepatitis- Chronic phase
8.	Viral hepatitis- Convalescent and recovery phases
9.	Thyroid function test
10.	Renal Function test- Acute renal failure
11.	Renal Function test- Chronic renal failure
12.	Autoimmune Hemolytic anaemia
13.	Sickle cell anaemia
14.	Thalassemia
15.	Hereditary Spherocytosis
16.	Hematolymphoid malignancies- AML
17.	Hematolymphoid malignancies- ALL
18.	Hematolymphoid malignancies- Multiple Myeloma
19.	Lab diagnosis of Myocardial infarction.

TOPICS FOR INTEGRATION

	Pathology
FIRST 4 MONTHS	Immunology Anaemia Wound healing Shock
SECOND 4 MONTHS	Infective endocarditis & Rheumatic heart disease Myocardial infarction Tuberculosis Leprosy AIDS Malaria
LAST 4 MONTHS	Diabetes mellitus Hepatitis Hypo & Hyperthyroidism, Thyroid malignancies

NOTE - National days of importance for AIDS, Leprosy, Tuberculosis, Malaria, Mental health, Breast feeding promotion, World health day, etc. can be used to conduct full day integration sessions for students

Minimum two of the suggested topic should be covered in each block.

DISTRIBUTON OF ATTITUDE ETHICS AND COMMUNICATION SKILLS (AETCOM) MODULE

SI NO	MODULE	TOPIC	DEPARTMENT					No. of hours	Formative assessment	Summative assessment
			PA	MI	PH	CM	FM			
1	2.1	Foundation of communication				✓		5	✓	-
2	2.2	Foundation of bioethics					✓	2	-	✓
3	2.3	Health care as a right				✓		2	-	✓
4	2.4	Working in a health care team	✓					6	✓	-
5	2.5	Bioethics- case studies on patient autonomy and decision making (patient rights and shared responsibility in health care)			✓			6	✓	✓
6	2.6	Bioethics-Case studies on patient autonomy and decision making (refusal of care including do not resuscitate and withdrawal of lifeSupport)			✓			5	✓	✓
7	2.7	Bioethics- Case studies on patient autonomy and decision making (consent for surgical procedures)		✓				5	✓	✓
8	2.8	What does it mean to be a family member of sick patient					✓	6	✓	✓

****PA-Pathology; MI- Microbiology; PH- Pharmacology; CM- Community medicine; FM- Forensic medicine.**

EVALUATION METHODOLOGY

Summative Assessment - Assessment will be conducted at the end of instruction to check how much the student has learnt.

Formative Assessment - Assessment will be conducted during the instruction with primary purpose of providing feedback for improved learning.

Internal Assessment - Range of assessments conducted by the teachers teaching a particular subject with the purpose of knowing what is learnt. Internal assessment can have both formative and summative functions.

Scheduling of Internal Assessment - Done once in three months.

Theory IA includes: Written test includes essay questions, short notes and MCQs.

Practical IA includes: Practical tests, Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), records maintenance and attitudinal assessment.

Assessment of Log-book- Log book should record all activities like seminar, symposia, quizzes and other academic activities. It should be assessed regularly and submitted to the department. Up to ten (10) per cent IA Practical marks should be for Log book assessment.

Assessment of Practical Record book- Practical book should record all skills and other practical exercises done during the academic programme. It will be assessed regularly and submitted to the department.

Assessment for AETCOM will include: - Written tests comprising of short notes and creative writing experiences only in internal assessment.

SUMMATIVE ASSESSMENT/ UNIVERSITY EXAM

THEORY

GENERAL INSTRUCTIONS

1. The topics for the two papers are distributed
2. Questions in each paper should be as per distribution
3. SLO will be taken into account while setting the question paper
4. Repetition of questions from the same SLO will be avoided
5. Adherence to the marks allotted to the different topics & sections
6. Questions will be covered from the different sections of Pathology

Sl no	Nature of question	Marks
1	Long Essay (LE)	2x15=30
2	Short Answer (SA)	10x5=50
3	Multiple Choice Questions (MCQ))	20x1=20

Marks distribution across different sections

Sl no	Section	Paper	Marks distribution	Total
1	General Pathology (40 - 60) Hematology + Clinical Pathology + Cytology (40 - 60)	I	100	200
2	Systemic Pathology	II	100	

TOPIC-WISE MARKS DISTRIBUTION FOR THEORY EXAMINATION

SI NO	TOPICS	MARKS DISTRIBUTION		
GENERAL PATHOLOGY		**Minimum**	**Maximum**	**Nature of question**
1.	**Introduction to pathology**	0	3	Only MCQ
2.	**Cell Injury and Adaptation**	3	15	LE,SA,MCQ
3.	**Amyloidosis**	0	5	SA,MCQ
4.	**Inflammation**	3	15	LE,SA,MCQ
5.	**Healing and repair**	0	5	SA, MCQ
6.	**Hemodynamic disorders**	3	15	LE,SA,MCQ
7.	**Neoplastic disorders**	3	15	LE,SA,MCQ
8.	**Basic diagnostic cytology**	3	5	SA,MCQ
9.	**Immunopathology and AIDS**	3	8	SA,MCQ
10.	**Infections and Infestations**	0	8	SA,MCQ
11.	**Genetic and paediatric diseases**	Non-Core		
12.	**Environmental and nutritional disease**	0	6	SA,MCQ
HEMATOLOGY AND CLINICAL PATHOLOGY				
13.	**Introduction to haematology**	3	8	LE,SA,MCQ
14.	**Microcytic anemia**	0	15	LE,SA,MCQ
15.	**Macrocytic anemia**	0	15	LE,SA,MCQ
16.	**Hemolytic anemia**	0	15	LE,SA,MCQ
17.	**Aplastic anemia**	Non-Core		
18.	**Leukocyte disorders**	0	15	LE,SA,MCQ
19.	**Lymph node and spleen**	0	6	SA,MCQ
20.	**Plasma cell disorders**	0	6	SA,MCQ
21.	**Hemorrhagic disorders**	0	15	LE,SA,MCQ
22.	**Blood banking and transfusion**	0	6	SA,MCQ

23.	**Clinical Pathology**	3	6	SA, MCQ
SYSTEMIC PATHOLOGY				
24.	**Gastrointestinal tract**	3	15	LE,SA,MCQ
25.	**Hepatobiliary system**	3	15	LE,SA,MCQ
26.	**Respiratory system**	3	15	LE,SA,MCQ
27.	**Cardiovascular system**	3	15	LE,SA,MCQ
28.	**Urinary Tract**	3	15	LE,SA,MCQ
29.	**Male Genital Tract**	0	6	SA,MCQ
30.	**Female Genital Tract**	0	15	LE,SA,MCQ
31.	**Breast**	0	15	LE,SA,MCQ
32.	**Endocrine system**	0	15	LE,SA,MCQ
33.	**Bone and soft tissue**	0	15	LE,SA,MCQ
34.	**Skin**	0	6	SA,MCQ
35.	**Central Nervous system**	0	6	SA,MCQ
36.	**Eye**	Non-Core		

Note: '0' signifies there is an option of not asking any question from that particular topic

SUMMATIVE ASSESSMENT/ UNIVERSITY EXAM

PRACTICALS

Total Marks – 100 (Practical: 80 + Viva voce: 20)

Exercise 1- Spotters (10 x 2marks each) – 20 marks

Time allotted: 10mins
Specimens - 4
Histopathology Slides - 3
Haematology slides - 2
Instrument -1

Note: Students need to identify the spotter and write two relevant points

Exercise 2 – **OSPE (**Objective Structured Practical Examination**)** – 5 marks
Time allotted: 5mins, each will have to do either;
Blood group or **Preparation of peripheral smear**
Student needs to perform the following steps

Blood group		
Sl No	**Steps**	**Marks awarded**
1	Take 1 or 2 slides and mark the slides appropriately	0.5
2	Take anti-sera A, B and D and place according to the marking	1
3	Add a drop of blood to the anti-sera	0.5
4	Mix well	1
5	Look for the agglutination and interpret	2
Total		**5**

Preparation of peripheral smear		
Sl No	**Steps**	**Marks awarded**
1	Take a clean slide	0.5
2	Take a drop of blood and place it appropriately on the slide	0.5
3	The spreader slide is to be placed at an angle of 45^0 and moved back to make contact with the drop, spreading it evenly along the line of contact. Pull the spreader steadily to make a smear and label the slide	2
4	Smear needs to be tongue shaped and without any windows,	2
Total		**5**

Exercise 3:
Time allotted: 20mins
Urine Analysis – 15 Marks
Physical examination + Chemical examination (Detection of 2 abnormal constituents) based on history provided
Exercise 4:
Time allotted: 20mins
Histopathology slide – 15 Marks
Identify + draw a neat labeled diagram + write points in favor of identification
Exercise 5:
Time allotted: 20mins
Peripheral Smear – 15 Marks
Identify + draw a neat labeled diagram + write points in favor of identification
Exercise 6:
Time allotted: 10mins
Chart - 10 Marks, each student is given only one chart.
Interpret the chart and answer the given questions.
NOTE: The evaluation of charts on certifiable competencies should be completed in formative and internal assessment and duly documented in the log book.

Exercise 7:

Viva Voce (20 marks)

Time allotted: 20 to 30mins (5-6mins per candidate for each examiner)

Marks allotted for each examiner – 5

Subject allotted for each examiner:

1. Clinical Pathology and haematology
2. General Pathology
3. Systemic Pathology – I (CVS, RS, GIT, Hepatobiliary, Lymphoreticular and Spleen)
4. Systemic Pathology - II (Urinary system, Male and Female genital tract, Endocrines, Bone and Soft tissue, Central Nervous System,Skin)

INTERNAL ASSESSMENT

1. There will be 3 internal assessment examinations in Pathology.
2. It is mandatory for the students to appear for all the internal assessment examinations.
3. First internal assessment examination will be held after 3 months, second internal assessment examination will be held after six months and third internal assessment examination will be held after 9 months of Phase II curriculum.
4. Pattern of first and second Internal Assessment are at the discretion of the Head of the Department. However third internal assessment will be conducted in the same pattern of the University exam
5. Additional internal assessment examination for absent students will be considered due to genuine reason after approval from the HOD and will be taken before the submission of internal assessment marks to the University.
6. Internal assessment marks allotment for theory and practical for the first and second internal assessment and Marks allotted in the third (final) Internal Assessment will be according to the institutional regulations.
7. **Feedback in Internal Assessment** - Feedback will be provided to students throughout the course so that they are aware of their performance and remedial action can be initiated well in time. The feedbacks need to be structured and the faculty and students must be sensitized to giving and receiving feedback.
8. The results of IA will be displayed on notice board within two weeks of the test and an opportunity provided to the students to discuss the results and get feedback on making their performance better.
9. The students should sign with date whenever they are shown IA records in token of having seen and discussed the marks.

10. **Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.**
11. **Internal assessment will be based on competencies and skills.**
12. **Criteria for appearing in University examination:** students must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination.
13. **The best of the first 2 internal assessment will added to the 3rd internal assessment and an average of the total will be taken as final and equated to 50 marks.**
14. A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial assessment by the HOD. If she successfully completes the same, she will be eligible to appear for University Examinations. Remedial assessment shall be completed before submitting the internal assessment marks to the University.

Log book format (as per NMC guidelines)

MODEL QUESTION PAPER

Subject - Pathology

PAPER I

LONG ESSAY

1) 47 year old farmer cuts his right thumb. Next morning the thumb is sore and the skin surrounding the cut is red. The next day the thumb is swollen, throbbing and yellowish white pus is oozing out of the injured area. He also noticed two painful small swellings in his right armpit. He then experiences a shaking chill and becomes uncomfortable. On examination at the hospital his skin was cold to touch and his extremities were cold. There was bluish discoloration of his digits and lips. His pulse was feeble with a pulse rate of 110/min and a blood pressure was 90/60 mm of Hg.

a. What is your diagnosis? (2 marks)
b. What are the stages of the condition and discuss the pathophysiologic basis? (5 marks)
c. Discuss the pathologic changes in lung and kidney in the terminal stages of this condition?
(8 marks) (Marks-2+5+8=15)

2) Describe the role of hematology laboratory in the differential diagnosis of hemolytic anemia's. Discuss clinical clues for suspecting hemolysis.
(9+6) (Marks-9+6=15)

SHORT ANSWERS Marks: 10x5

3) Discuss the differences between apoptosis and necrosis with a special reference to clinical significance

4) Discuss the factors affecting wound healing

5) Describe the organ specific effects of tobacco smoke constituents

6) Discuss the sequelae of acute inflammation. Enumerate morphological types with examples

7) Define metastasis and discuss the routes of spread.

8) A 40yrs male presented with complaints of anemia, fatigue weight loss and splenomegaly what is the clinical diagnosis. Discuss about morphology and prognosis?

9) Describe the clinical picture, peripheral blood and bone marrow picture in megaloblastic anemia.

10) Define leukamoid reaction. List the differences between leukamoid reaction and chronic myeloid leukemia.

11) Describe gross and microscopic appearance of tubercular lymphadenitis.

12) List causes of thrombocytopenia. Discuss pathogenesis of idiopathic thrombocytopenic purpura.

MULTIPLE CHOICE QUESTIONS **Marks: 20x1**

13) The type of necrosis seen in tuberculosis
A) Caseous Necrosis B) Coagulative Necrosis C) Liquefactive Necrosis D) Fibrinoid Necrosis. ( )

Etc….

MODEL QUESTION PAPER

Subject Pathology

Paper II

LONG ESSAY

1) 55yr male presented with hematuria and pain in the right flank since 15 days. There is also history of significant weight loss, weakness and malaise. On examination a right flank mass was palpable on bimanual examination.
   1. What is the likely diagnosis? (2 marks)
   2. Discuss paraneoplastic syndrome associated with this condition. (4 marks)
   3. Discuss the gross and microscopy of the lesion. (6 marks)
   4. Enlist the various morphological types (3 marks) Marks**(2+4+6+3=15)**

2) Discuss the role of laboratory in the diagnosis of Ischaemic Heart Disease. Add a note on approximate Time of Onset of Key Events in Ischemic Cardiac Myocytes (9 + 6) **Marks(9+6=15)**

SHORT ANSWERS **Marks: 10x5=50**

3) Discuss the stages of alcoholic liver disease.

4) Discuss pathogenesis and morphology of Hashimoto thyroiditis

5) Interpret and assign to a group the following icteric patients with their urine and faecal findings. The groups to be assigned to are: pre-hepatic, hepatic and post hepatic causes of jaundice

	Patient 1	Patient 2	Patient 3
Urinary bilirubin	increased	absent	increased

Urinary urobilinogen	Low or absent	increased	decreased
Faecal colour	pale	dark	pale

6) Write the histological classification of malignant epithelial tumors of lung. Discuss in brief the etiopathogenesis of carcinoma lung.

7) Discuss the prognostic factors in carcinoma breast.

8) Describe in brief etiopathogenesis of carcinoma colon. Add a note on gross morphology of carcinoma colon.

9) Discuss pathogenesis of type II diabetes mellitus and List the complications

10) Define aneurysm. Enumerate the causes, types and complications of aneurysm.

11) Define and discuss etio-pathogenesis of bronchiectasis.

12) Discuss gross and microscopic morphology of any one benign and any one malignant bone tumors commonly arising in the metaphysis of long bones.

MULTIPLE CHOICE QUESTIONS Marks: 20x1=20

13) Which is the most common type among carcinoma of thyroid?

A) Papillary carcinoma B) Follicular carcinoma C) Medullary carcinoma D) Anaplastic carcinoma ( )

Etc….

Recommended books for Pathology

RECOMMENDED BOOKS:

1. Kumar.V, Abbar.A.K, Aster.J.C. Robbins and Cotran Pathologic basis of Disease.10th ed, c.
2. Walter.J.B & Talbot.I.C. General Pathology.7th ed, Elsevier; 1996
3. Rubin.R, Strayer.D.S.Rubin'sPathology. 6th ed, Wolters Kluwer, Lippincott Williams and Wilkins; 2012.
4. O'Dowd G, Bell S & Wright S. Wheater's Pathology. 6th ed, Elsevier; 2020.
5. Saxena.R, Pati.H.P, Mahapatra.M, Firkin.F, Chesterman.C & Ponington.D et.al. DeGruchy`s Clinical Haematology in Medical Practice. 6th ed, Wiley India; 2012.
6. Nayak.R & Rai.S. Essentials in Haematology and Clinical Pathology. Jaypee Brothers; 2017.
7. Carman. H. R. Handbook of Medical Laboratory Technology. Christian Medical Association of India. 2013.
8. Singh T. Atlas and Text of Hematology. 4th ed Avichal Publishing Company 2018.
9. Reid R, Roberts F & Macduffe. Pathology Illustrated. 7th ed Churchill Livingstone, Elsevier; 2011.
10. Curran R C, Jones E L. Gross Pathology- A Color Atlas. 4th ed. Harvey Miller Publishers.
11. Underwood’s pathology: a clinical approach 7thed,

REFERENCE BOOKS:

LEVEL1:

1. McKenzie. S.B,Williams. J.L. Clinical laboratory Haematology.2ed, Pearson; 2009
2. Bain.J.B, Bates.I, Laffan. M.A.Dacie and Lewis Pratical Haematology, 12ed ,Elsevier; 2017
3. Damjanov.I, Linder.J. Anderson`s Pathology.10ed,Elsevier; 2019
4. McPherson.R.A.Henry`s Clinical Diagnosis and Management by Laboratory Methods. 23ed, Elsevier; 2016

LEVEL 2:

1. Greer.J.P,Arber. D.A,Glader. B,List.A.F, Means.R.J, Paraskevas.F et.al. Wintrobe`s Clinical Haematology.13ed WoltersKluwer, Lippincott Williams and Wilkins, 2013
2. Rosai.J.Rosai and Ackerman`s Surgical Pathology. 11ed,Elsevier ; 2018
3. WHO Classification of Tumors Series
4. https://whobluebooks.iarc.fr/

DEPARTMENT OF PHARMACOLOGY

Phase 2 MBBS

I N D E X

Goals and Departmental objectives for the undergraduate MBBS curriculum in Pharmacology

Goals:

The broad goal of Pharmacology curriculum is to equip the Indian Medical Graduate (IMG) with the knowledge of scientific basis of therapeutics and the skills of rational prescribing during the second year of MBBS.

Objectives:

Knowledge:

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

Describe the pharmacokinetics and Pharmacodynamics of essential and commonly used drugs

Apply the knowledge of indications, contraindications, interactions and adverse reactions of commonly used drugs in therapeutics

Describe the principles of prescribing and calculate the dosage in special medical situations such as pregnancy, lactation, children, elderly and patients with renal dysfunction

Describe the basis of Evidence Based Medicine

Apply the concept of rational drug therapy and P drugs in clinical pharmacology

Describe the clinical presentation, diagnosis and management of common poisonings, insecticides, common sting and bites

Describe drugs of abuse and the process of de-addiction

Describe the phases and the regulations involved in the development and introduction of new drugs

Explain the concepts and clinical relevance of Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines, dietary supplements and nutraceuticals

Describe occupational and environmental pesticides, food adulterants, pollutants and insect repellents

Skills:

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

Write a rational prescription for a given condition and communicate the same to the patient

Recognise and report an adverse drug reaction of commonly used medications

Demonstrate the effects of drugs on blood pressure through computer aided learning and interpret the graph

Perform a critical evaluation of the drug promotional literature

Administer drugs through various routes in a simulated environment

Ethics, Attitude and communication:

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

Communicate effectively with the patient with regards storage and use of common medications
Explain to the patients the right way to use the various drug formulations
Communicate the importance of adherence to medications and motivate the patients
Demonstrate an understanding of the legal and regulatory aspects of prescribing medications.
Understand and follow the ethical principles involved in prescribing medications.
Understand ethical principles involved in animal research.

CERTIFIABLE COMPETENCIES

Competencies in knowledge domain

Sl no	Topic	Competency
1	General Pharmacology Toxicology Clinical Pharmacology and rational drug use	PH 1.1 to PH 1.12
2	Autonomic Nervous System	PH 1.13 to PH 1.14
3	Autacoids	PH1.16
4	Drugs in anaesthetic practice:	PH 1.15, PH1.17 to PH 1.18
5	Central Nervous System	PH 1.19 to PH 1.23
6	Diuretics	PH 1.24
7	Drugs affecting blood and blood formation	PH 1.25, PH 1.35
8	Cardiovascular System	PH 1.26 to PH 1.31
9	Respiratory System:	PH 1.32 to PH 1.33
10	Gastrointestinal System	PH 1.34
11	Endocrine System	PH 1.36 to PH 1.41
12	Chemotherapy	PH 1.42 to PH 1.49
13	Miscellaneous	PH 1.50 to PH 1.64

Competencies in Skills:

There are **21** competencies in this domain. These include clinical pharmacy (04), Clinical Pharmacology (8), Experimental Pharmacology (2) and Communication (7) as given below.

1. Topic	Competency	Description
Clinical Pharmacy	PH 2.1	Demonstrate understanding of the use of various dosage forms **(oral/local/parenteral; solid/liquid)**
	PH 2.2	Prepare oral rehydration solution from ORS packet and explain its use
	PH 2.3	Demonstrate the appropriate setting up of an intravenous drip in a simulated environment.
	PH 2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations
Clinical Pharmacology	PH 3.1-**C**	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient
	PH 3.2-**C**	Perform and interpret a critical appraisal (audit) of a given prescription
	PH 3.3-**C**	Perform a critical evaluation of the drug promotional literature
	PH 3.4- **L**	To recognise and report an adverse drug reaction
	PH 3.5-**C**	To prepare and explain a list of P-drugs for a given case/condition
	PH 3.6-**L**	Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drugs
	PH 3.7-**L**	Prepare a list of essential medicines for a healthcare facility
	PH 3.8	Communicate effectively with a patient on the proper use of prescribed medication
Experimental Pharmacology	PH 4.1	Administer drugs through various routes in a simulated environment using mannequins
	PH4.2	Demonstrate the effects of drugs on blood pressure (vasopressor and vaso- depressors with appropriate blockers) using CAL
Communication	PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use
	PH5.2	Communicate with the patient regarding optimal use of a) drug therapy, b) devices and c) storage of medicines
	PH5.3	Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider
	PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance
	H5.5	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management
	PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs
	PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs

C- Needs certification: 4 no.
L Needs Maintenance of a log book: 3 no.

MINIMUM TEACHING HOURS

Lectures: 80hrs

Small group learning (tutorials/seminars): 138hours- **Practical**: 80 hours & **SGD**: 58 hours

Self-directed learning: 12 hours

Total: 230 hours

THEORY:

Sl no	Topic	Competency	Theory	SGD	SDL	Procedures requiring certification
1	General Pharmacology Toxicology Clinical Pharmacology and rational drug use	PH 1.1 to PH 1.12 1	9	0		Nil
2	Autonomic Nervous System	PH 1.13 to PH1.14	8	2	0	Nil
3	Autacoids	PH1.16	3	2	1	Nil
4	Drugs in anaesthetic practice	PH 1.15, PH1.17 to PH 1.18	4	0	0	Nil
5	Central Nervous System	PH 1.19 to PH 1.23	8	4	0	Nil
6	Diuretics	PH 1.24	2	1	1	Nil
7	Drugs affecting blood and blood formation	PH 1.25, PH 1.35	3	2	2	Nil
8	Cardiovascular System	PH 1.26 to PH 1.31	8	2	3	Nil
9	Respiratory System:	PH 1.32 to PH 1.33	2	1	0	Nil
10	Gastrointestinal System	PH 1.34	1	2	1	Nil
11	Endocrine System	PH 1.36 to PH 1.41	8	4	1	Nil
12	Chemotherapy	PH 1.42 to PH 1.49	17	5	0	Nil
13	Miscellaneous	PH 1.50 to PH 1.64	3	5	3	Nil
	CBME requirement		**80 hours**	**36 hours**	**12 hours**	Nil

PRACTICAL					
Topic	**Competency**	**Description**	**Practical hours**	**Competencies**	**Certification**
Clinical Pharmacy	PH 2.1	Demonstrate understanding of the use of various dosage forms **(oral/local/parenteral; solid/liquid)**	14 hours		
	PH 2.2	Prepare oral rehydration solution from ORS packet and explain its use	4 hours		
	PH 2.3	Demonstrate the appropriate setting up of an intravenous drip in a simulated environment.	4 hours		
	PH 2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations	4 hours		
Clinical Pharmacology	PH 3.1-**C**	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient	6 hours	5	Certification
	PH 3.2-**C**	Perform and interpret a critical appraisal (audit) of a given prescription	6 hours	3	Log book & Certification
	PH 3.3-**C**	Perform a critical evaluation of the drug promotional literature	6 hours	3	Log book & Certification
	PH 3.4- **L**	To recognise and report an adverse drug reaction	4 hours		Log book
	PH 3.5-**C**	To prepare and explain a list of P-drugs for a given case/condition	6 hours	3	Log book & Certification
	PH 3.6-**L**	Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drugs	2 hours		Log book
	PH 3.7-**L**	Prepare a list of essential medicines for a healthcare facility	4 hours		Log book
	PH 3.8	Communicate effectively with a patient on the proper use of prescribed medication	4 hours		

Experimental Pharmacology	PH 4.1	Administer drugs through various routes in a simulated environment using mannequins	10 hours		
	PH4.2	Demonstrate the effects of drugs on blood pressure (vasopressor and vaso-depressors with appropriate blockers) using CAL	6 hours		
Communication	PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use	SGD 2 hours		
	PH5.2	Communicate with the patient regarding optimal use of a) drug therapy, b) devices and c) storage of medicines	SGD 4 hours		
	PH5.3	Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider	SGD 4 hours		
	PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance	SGD 2 hours		
	PH5.5	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management	SGD 4 hours		
	PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs	SGD 4 hours		
	PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	SGD 2 hours		
CBME requirement			**Practicals -80 hours SGD-22 hours**		

C- Needs certification- 4 no

L- Needs Maintenance of a log book- 3 no.

Note: Spotters can be done concomitantly during the teaching hours.

THEORY

(Competency no-1.1 to 1.64)

General pharmacological Principles

Lecture - 1 Hour

Assessment: Written, Viva voce

PH 1.1 Define and describe the principles of pharmacology and pharmacotherapeutics

1.1.1 Define a drug
1.1.2 Explain the terms Pharmacology, clinical pharmacology & therapeutics
1.1.3 Enlist and explain about various branches of Pharmacology
1.1.4 List out sources of drugs with examples
1.1.5 List out sources of drug information &Explain each source briefly
1.1.6 Recognize the importance of Clinical pharmacology towards rational approach to prescribing medicine
1.1.7 Explain the evolution of Pharmacology from medieval to contemporary times

SGD - 1 Hour

Assessment: Written, Viva voce

PH 1.2 Describe the basis of Evidence based medicine and Therapeutic

drug monitoring Evidence based Medicine

1.2.1 Identify reliable sources for research evidence
1.2.2 Understand research study designs and the hierarchy for research evidence
1.2.3 Ascertain strength of evidence for treatments and understand guidelines in different therapeutic areas
1.2.4 Explain the importance of keeping prescribing practice up to date with advances in medical knowledge

Therapeutic Drug Monitoring

1.2.5 Understand the purpose of TDM
1.2.6 Explain the methods in therapeutic drug monitoring
1.2.7 Enlist the drugs that require TDM
1.2.8 Understand the purpose for and methods in therapeutic drug monitoring
*TDM to be covered after PK/PD

SGD/Practical - 1 Hour

Assessment: Written, Viva voce

PH 1.3 Enumerate and identify drug formulations and drug delivery systems

1.3.1 Define dosage form, formulation and excipient
1.3.2 List out different drug formulations with an example of each.
1.3.3 Choose appropriate formulation based on clinical need
1.3.4 Explain the advantages and disadvantages of different drug delivery systems
1.3.5 Enlist the new drug delivery system and discuss their utility

Lecture - 5 Hours

Assessment: Written, Viva voce

PH 1.4 Describe absorption, distribution, metabolism & excretion of drugs

Pharmacokinetics (PK)

1.4.1 Explain the term Pharmacokinetics
1.4.2 Explain the four phases of PK
1.4.3 Explain why the understanding of PK is relevant to prescribers

Drug Absorption

1.4.4 Explain the principles involved in drug absorption
1.4.5 Explain the concept of bioavailability and describe the factors affecting bioavailability
1.4.6 Describe the importance of bioequivalence

Drug Distribution

1.4.7 Explain the distribution of drugs across body compartments
1.4.8 Define apparent volume of distribution
1.4.9 Explain the clinical significance of drug distribution
1.4.10 Explain the clinical significance of plasma protein binding of drugs
1.4.11 Describe redistribution of drugs with clinical application

Biotransformation

1.4.12 Define biotransformation
1.4.13 Describe first pass metabolism and its importance
1.4.14 Describe phase 1 and phase 2 reactions
1.4.15 Explain factors affecting biotransformation
1.4.16 Explain the clinical significance of enzyme induction and inhibition

Drug Excretion

1.4.17 Describe the various routes of excretion of drugs
1.4.18 Explain factors affecting renal excretion
1.4.19 Explain plasma half-life and its clinical significance
1.4.20 Explain steady state concentration and its significance
1.4.21 Explain the different kinetics of elimination and their clinical significance
1.4.22 Apply the knowledge of clearance, loading dose and maintenance dose in calculating the dose for a patient
1.4.23 Explain various methods of prolonging drug action
1.4.24 Explain the PK factors that determine the choice of dose, route, and frequency of Drug administration.

Lecture/SGD - 4 Hours
Assessment: Written, Viva voce

PH 1.5 Describe general principles of mechanism of

drug action Pharmacodynamics

1.5.1 State different mechanisms by which a drug acts giving an example of each
1.5.2 Enlist different types of receptors giving examples of drugs acting through them
1.5.3 Explain the terms – 'up regulation' and 'down regulation' of receptors
1.5.4 Explain the terms –affinity, efficacy, intrinsic activity & potency
1.5.5 Define the terms –agonist, antagonist, partial agonist & inverse agonist. Give examples of drugs for each
1.5.6 Describe dose-response relationship and interpret dose- response curves
1.5.7 Explain drug synergism with examples
1.5.8 Describe the different types of drug antagonism with examples
1.5.9 Describe factors modifying drug action and its clinical implications
1.5.10 Explain therapeutic index and therapeutic range with clinical significance

SGD/ Practical - 1 Hour
Assessment: Written, Viva voce

PH 1.6 Describe principles of Pharmacovigilance & ADR reporting systems

1.6.1 Define the basic terminologies (ADR, Serious ADR, AE, Toxicity, Pharmacovigilance and Causality assessment)
1.6.2 Explain the history, need and principles of pharmacovigilance
1.6.3Discuss various methods/systems of ADR reporting
1.6.4 Discuss Pharmacovigilance program of India
1.6.5 Report ADRs to a Pharmacovigilance Centre by filling the ADR reporting form
1.6.6 Discuss the importance of prescriber's responsibility in Pharmacovigilance

SGD - 1 Hour
Assessment: Written, Viva voce

PH 1.7 Define, identify and describe the management of adverse drug reactions (ADR)

1.7.1 Define an ADR
1.7.2 Explain the frequency of ADRs and their impact on public health
1.7.3 Describe the common classification of ADRs with examples
1.7.4 Describe the management of ADRs.
1.7.5 Describe the important risk factors that predict susceptibility to ADRs.
1.7.6 Explain the importance of monitoring in prevention of ADRs.

SGD - 1 Hour
Assessment: Written, Viva voce

PH 1.8 Identify and describe the management of drug interactions

1.8.1 Define Drug interactions.
1.8.2 Describe the types of Drug interactions as In vivo, In vitro & PK and PD with suitable examples
1.8.3 Describe the useful and harmful drug interactions with suitable examples
1.8.4 Describe Drug–drug; drug-food; Drug-alcohol; drug–tobacco; Drug- complementary/alternative medicine interactions with examples
1.8.5 Explain how to predict and avoid harmful drug interactions in clinical practice
1.8.6 Management of DI.
1.8.7 Identify the sources of information about DI to inform prescribing

SGD - 1 Hour
Assessment: Written, Viva voce

PH 1.9 Describe nomenclature of drugs i.e. generic, branded drugs

1.9.1 Describe the chemical name, non-proprietary and Proprietary name of a drug
1.9.2 Discuss the importance of using non-proprietary name in prescribing.

SGD - 1 Hour
Assessment: Written, Viva voce

PH 1.10 Describe parts of a correct, complete and legible generic prescription. Identify errors in prescription and correct appropriately

1.10.1 Define a prescription along with the importance of each part of prescription
1.10.2 Describe the format of prescription as per MCI model.
1.10.3 Write an unambiguous, legible, complete and legally valid prescription
1.10.4 Identify and correct prescription writing errors
1.10.5 Describe the importance of maintaining records of prescriptions.

SGD - 1 Hour
Assessment**:** Written, Viva voce

PH 1.11 Describe various routes of drug administration, eg: oral, SC, IV, IM, SL

1.11.1 List the various routes of drug administration-oral, parenteral and topical with examples
1.11.2 Describe the merits and de-merits of each route
1.11.3 Choose the correct route of drug administration in a given clinical scenario

SGD/Practical - 1 Hour
Assessment: Written, Viva voce

PH 1.12 Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction

1.12.1 Calculate appropriate doses for individual patients based on age, body weight, and surface area.
1.12.2 Calculate the dose of drug using appropriate formulae in a given clinical case in children
1.12.3 Calculate the dose of drug using appropriate formulae in a given clinical case in elderly

1.12.4 Calculate the dose of drug using appropriate formulae in a given clinical case

Drugs acting on Autonomic Nervous system

- Lecture/SGD- 6/3 Hours
- Assessment: Written, Viva voce

PH 1.13 Describe mechanism of action, types, doses, side effects, indications and contraindications of adrenergic and anti- adrenergic drugs

1.13.1 Describe the organization of autonomic nervous system
1.13.2 Describe the steps involved in neurotransmission
1.13.3 Describe the synthesis, storage, release and fate of adrenergic transmitters
1.13.4 Classify adrenergic receptors with respect to their structure, localization and second messenger system

Adrenergic drugs

1.13.5 Classify adrenergic agonists based on their therapeutic uses and actions.
1.13.6 Describe the pharmacological effects of adrenaline and correlate the effects of their therapeutic uses and adverse effects
1.13.7 State the salient Pharmaco-kinetic features of adrenaline
1.13.8 Differentiate between adrenaline, nor-adrenaline, isoprenaline and dopamine with respect to pharmacological effects, adverse effects and therapeutic uses. (Enumerate the Adverse effects, therapeutic uses and contraindication of most commonly used Adrenergic Drugs in therapy.)
1.13.9 Compare and contrast directly and indirectly acting sympathomimetics with examples
1.13.10 State the therapeutic uses and ADRs of indirectly acting sympathomimetics
1.13.11 State the precautions and contraindications of sympathomimetics

Antiadrenergic drugs

1.13.12 Classify alpha-adrenergic receptor antagonists, and compare and contrast selective alpha1 antagonists with non-selective alpha antagonists
1.13.13 Describe the pharmacological effects and applied pharmacokinetics, ADRs, precautions and therapeutic uses of prazosin
1.13.14 State the advantages of other selective alpha1 antagonists over prazosin, co-relating the same with their therapeutic use
1.13.15 Classify beta-adrenergic receptor antagonists with examples
1.13.16 Describe the pharmacological effects, pharmacokinetics, ADRs, precautions and contra- indications of beta-adrenergic receptor antagonists
1.13.17 State the therapeutic uses of beta- blockers giving pharmacological basis for their use
1.13.18 State the advantages of selective beta1 antagonists over non selective beta antagonists corelating the same with their therapeutic uses and ADRs
1.13.19 Mention the beta blockers with (ISA) intrinsic sympathomimetic activity giving their advantages and indications
1.13.20 Mention the beta blocker of choice with rationale for the following clinical conditions- Glaucoma, CHF, angina, hypertension, thyrotoxicosis, pheochromocytoma, arrhythmias
1.13.21 List the various preparations of beta blockers with their routes of administration. (State the beta-blockers that can be given by IV route)

Lecture - 3 Hours

Assessment: Written, Viva voce

PH 1.14 Describe mechanism of action, types, doses, side effects, indications and contraindications of cholinergic and anticholinergic drugs

Cholinergic transmission and Cholinergic drugs

1.14.1 Describe the synthesis, storage, release and fate of cholinergic transmitters
1.14.2 List the sites where acetylcholine is released
1.14.3 Classify cholinergic receptors with their structure, localization and second messenger system
1.14.4 Classify cholinomimetic drugs
1.14.5 Describe the pharmacological effects of directly acting cholinomimetic drugs
1.14.6 Compare the effects of muscarinic agonists on the basis of selectivity and therapeutic uses, adverse effects and contraindications
1.14.7 Describe the metabolism of acetyl choline
1.14.8 Classify anti-cholinesterase agents
1.14.9 Compare the various reversible anti-cholinesterases with respect to their pharmacological properties and therapeutic uses
1.14.10 Outline the management of myasthenia gravis
1.14.11 State the signs and symptoms of organophosphate compound poisoning
1.14.12 Outline the treatment of organophosphorus poisoning with rationale
1.14.13 Explain the term enzyme aging and its clinical significance
1.14.14 Explain how the treatment of organochlorine compound poisoning differs from that of organophosphate compound poisoning

Anticholinergic drugs

1.14.15 Classify cholinergic receptor antagonists giving examples of muscarinic and nicotinic (Nn: ganglion, Nm: Neuromuscular) blockers
1.14.16 List the anticholinergic side effects
1.14.17 Compare and contrast atropine and hyoscine
1.14.18 State the salient pharmacokinetic features of atropine and its Substitutes
1.14.19 List the adverse drug reactions of anticholinergic drugs
1.14.20 List the contraindications to anticholinergic drugs
1.14.21 State the advantages of atropine substitutes over atropine and state their clinical uses giving suitable examples
1.14.22 List the major clinical indications of atropine

Skeletal Muscle Relaxants

Lecture - 1 Hour

Assessment: Written / Viva voce

PH 1.15 Describe mechanism/ s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants

1.15.1 Define skeletal muscle relaxant.
1.15.2 Classify skeletal muscle relaxants.
1.15.3 Explain mechanisms of action of skeletal muscle relaxants
1.15.4 Compare and contrast (competitive) non-depolarizing blockers and persistent depolarizing blockers.
1.15.5 Describe the pharmacokinetics of skeletal muscle relaxants.
1.15.6 Uses of skeletal muscle relaxants.

1.15.7 Describe the important drug interactions and adverse effects that occur with skeletal muscle relaxants.
1.15.8 Discuss the advantages of newer neuromuscular blockers over the older ones.
1.15.9 Compare centrally and peripherally acting skeletal muscle relaxants.

Autocoids and related Drugs

- Lecture/SGD/SDL - 3/4/1 Hour
- Assessment: Written / Viva voce

PH 1.16 Describe mechanism/ s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: anti-histaminic, 5-HT modulating drugs, NSAIDs, drugs for gout, anti-rheumatic drugs, drugs for migraine

Histamine and Antihistaminics

1.16.1 Understand the role of histamine and bradykinin in various physiological and pathophysiological processes.
1.16.2 Understand the mechanisms of action of drugs that act as antagonists of the H1 receptor.
1.16.3 Know the therapeutic utility of H1-receptor antagonists, alone and in combination with other agents.
1.16.4 Know the important adverse effects of H1-receptor antagonists, and the difference between first- and second-generation H1 antihistamines with regard to adverse effects.
1.16.5 Outline the treatment of Vertigo.

5-Hydroxytryptamine, its Antagonists and Drug Therapy of Migraine

1.16.6 Describe the synthesis, storage and destruction of 5-Hydoxytryptamine.
1.16.7 Name and describe the salient features of important 5-HT receptor sub types.
1.16.8 Describe the pharmacological actions and pathophysiological roles of 5-Hydroxytryptamine
1.16.9 Describe drugs affecting 5HT system.
1.16.10 Describe mechanism of action, therapeutic uses and side effects of 5HT modulating drugs.
1.16.11 Understand the pathophysiology of migraine.
1.16.12 Describe the mechanism of action, adverse effects, contraindications and important drug interactions of anti-migraine drugs
1.16.13 Describe the management of migraine and the drugs used for prophylaxis of migraine

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NonsteroidalAntiinflammatory Drugs and Antipyretic-Analgesics

1.16.14 Classify Non-steroidal Anti-inflammatory drugs based on selectivity of COX enzyme.
1.16.15 Explain mechanisms of action of NSAIDs.
1.16.16 Compare and contrast features of nonselective COX inhibitors and selective COX -2 inhibitors and enumerate the concerns with selective COX 2 inhibitors.
1.16.17 Describe pharmacokinetics and pharmacological actions of NSAIDs.
1.16.18 Describe the therapeutic uses of NSAIDs and enumerate doses of most commonly used NSAIDs.
1.16.19 List out the adverse effects, drug interactions and necessary precautions and contraindications to be followed with NSAIDs.
1.16.20 Outline the management of Salicylate poisoning and Paracetamol poisoning.
1.16.21 Describe guidelines for choice of non-steroidal anti-inflammatory drugs.
1.16.22 Enumerate the analgesic combinations in common use and discuss about topical NSAIDS.
1.16.23 Discuss the rationality of analgesic combinations and topical NSAIDs.

Antirheumatoid and Antigout Drugs

1.16.24 Explain pathophysiology of rheumatoid arthritis and understand the goals of drug therapy in rheumatoid arthritis.
1.16.25 Classify drugs used in rheumatoid arthritis.
1.16.26 Describe the mechanism of action and pharmacological actions of antirheumatic drugs
1.16.27 Describe the adverse effects of antirheumatic drugs and enumerate the doses of commonly used antirheumatic drugs.
1.16.28 Explain the pathophysiology of Gout.
1.16.29 Classify drugs used for Gout.
1.16.30 Describe mechanism of action and pharmacological actions of drugs used for Gout.
1.16.31 Describe the therapeutic uses of drugs used for Gout and enumerate the doses of commonly used drugs for Gout.
1.16.32 Discuss the adverse effects, precautions and contraindications of drugs used for Gout.
1.16.33 Explain the management of Gout.

Local Anaesthetics

- Lecture - 1 Hour
- Assessment: Written / Viva voce

PH 1.17 Describe the mechanism/ s of action, types, doses, side effects, indications and contraindications of local anesthetics

1.17.1 Define local anaesthetics.
1.17.2 Classify local anaesthetics.
1.17.3 Distinguish between the comparative features of general and local anaesthesia.
1.17.4 Compare features of amide linked local anaesthetics and ester linked local anaesthetics.
1.17.5 Describe mechanism of action, local and systemic actions of local anaesthetics.
1.17.6 Describe pharmacokinetics and enumerate the doses of commonly used local anaesthetics.
1.17.7 Describe the adverse effects, precautions and drug interactions with local anaesthetics.

1.17.8 Describe the indications for local anaesthetics and various dosage forms of lignocaine.
1.17.9 Describe the techniques of administration of local anaesthetics and their relevance in clinical practice.
1.17.10 Explain the complications of spinal anaesthesia.
1.17.11 Explain rationale of combining local anesthetics with adrenaline and clinical significance

General Anaesthetics

- Lecture - 2 Hours
- Assessment: Written / Viva voce

PH 1.18 Describe the mechanism/ s of action, types, doses, side effects, indications and contraindications of general anesthetics, and pre-anesthetic medications

1.18.1 Define general anaesthesia and explain stages of General Anaesthesia.
1.18.2 Describe the mechanisms of action of general anaesthetics.
1.18.3 Enumerate the properties of ideal general anaesthetics
1.18.4 Classify general anaesthetics
1.18.5 Explain the pharmacokinetics of general anaesthetics.
1.18.6 Describe the pharmacological actions and important adverse effects of general anaesthetics.
1.18.7 Enumerate the complications and the important drug interactions with general anaesthetics.
1.18.8 Define preanesthetic medication with the aims of preanesthetic medication and rationality of use of drugs as preanesthetic medication.
1.18.9 What is balanced anaesthesia and components
1.18.10 Compare and contrast nitrous oxide and halothane
1.18.11 Enumerate intravenous anaesthetic agents

Central Nervous System

- Lecture/SGD: 8/1 Hours
- Assessment: Written / Viva voce

PH 1.19 Describe the mechanism/ s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, anti- psychotic, anti- depressant drugs, anti-manic, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs) Sedatives – hypnotics/ Anxiolytic drugs

1.19.1 Define Sedatives and Hypnotics.
1.19.2 Describe the different phases of Sleep.
1.19.3 Classify Sedative and Hypnotics.
1.19.4 Describe the mechanism of action, pharmacokinetics and pharmacological actions of Sedative hypnotics.
1.19.5 Describe adverse effects and precautions with long term use and important drug interactions with Sedative and Hypnotics.
1.19.6 Describe therapeutic uses of Sedative and Hypnotics.

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1.19.7 Describe the management of different types of Insomnia.
1.19.8 Describe the management of Sedative and Hypnotic overdose.
1.19.9 Discuss the use of melatonin for disturbed biorhythms and sleep disorders.
1.19.10 Define Anxiety and Anxiolytics.
1.19.11 Classify Anxiolytics.
1.19.12 Describe pharmacological actions of Anxiolytics.
1.19.13 Describe the management of Anxiety
1.19.14 Enumerate doses of commonly used sedative hypnotics & anxiolytics.

Antipsychotic drugs

1.19.15 Define Psychosis. And enumerate the different types of Psychiatric illness.
1.19.16 Explain the pathophysiology of Psychoses.
1.19.17 Classify Psychotropic drugs and Antipsychotic drugs.
1.19.18 Describe the pharmacokinetics, mechanism of action and pharmacological actions of Antipsychotic drugs.
1.19.19 Describe the adverse effects and drug interactions of Antipsychotic drugs.
1.19.20 Describe the therapeutic uses of Antipsychotic drugs.
1.19.21 Explain the advantages of second-generation Antipsychotics over conventional drugs.

Anti-depressants and Antimanic Drugs

1.19.22 Define Depression.
1.19.23 Explain the pathophysiology of Depression.
1.19.24 Classify Antidepressant drugs.
1.19.25 Describe the mechanism of Antidepressant action.
1.19.26 Describe the pharmacokinetics and pharmacological actions of Antidepressants.
1.19.27 Describe the adverse effects and drug interactions with Antidepressants.
1.19.28 Outline the management of acute poisoning with tricyclic antidepressants.
1.19.29 Describe therapeutic uses of Antidepressants including those other than depression.
1.19.30 Define Mania.
1.19.31 Explain the pathophysiology of Mania.
1.19.32 Classify Antimanic drugs.
1.19.33 Describe mechanisms of action of Lithium.
1.19.34 Describe the pharmacokinetics and pharmacological actions of Lithium.
1.19.35 Describe the adverse effects and drug interactionsof Lithium.
1.19.36 Describe the therapeutic uses of Lithium and newer drugs used for mania with their status in management of mania
1.19.37 Describe Psychotomimetic drugs.

Opioid Analgesics and Antagonists

1.19.38 Define Algesia (Pain). classify pain, Explain the pain pathway and WHO pain ladder.
1.19.39 Define and Classify Analgesics.
1.19.40 Classify Opioid Agonists and Antagonists.
1.19.41 Describe mechanism of action of Opioid Analgesics.
1.19.42 Describe pharmacokinetics and pharmacological actions of Opioid Analgesics.
1.19.43 Describe adverse effects, precautions and contraindications with Opioid analgesics.
1.19.44 Describe types of Opioid receptors.
1.19.45 Explain about complex action Opioids-Nalorphine, Pentazocine, Butorphanol, Nalbuphine, Buprenorphine.

1.19.46 Describe pure Opioid antagonists and their therapeutics uses.
1.19.47 Enumerate endogenous Opioid peptides.
1.19.48 Discuss opioid deaddiction
1.19.49 Explain treatment of morphine poisoning

Anti-epileptic drugs

1.19.50 Describe Epilepsy and the types of Epilepsy.
1.19.51 Classify Antiepileptic drugs.
1.19.52 Explain the pathophysiology of Epilepsy.
Describe mechanism of action and pharmacological actions of Antiepileptic drugs.
1.19.54 Describe the adverse effects and important drug interactions of Antiepileptic drugs.
1.19.53 1.19.55 Explain the management of different types of Epilepsy including Status Epilepticus.
1.19.56 Enumerate the doses of commonly used Antiepileptic drugs.
1.19.57 Mention the non-epileptic uses of anti-epileptic drugs

Drugs for Neurodegenerative disorders – Antiparkinsonian drugs and Cognition enhancers

1.19.58 Describe Parkinsonism and its pathophysiology.
1.19.59 Classify Antiparkinsonian drugs.
1.19.60 Describe mechanism of action of Antiparkinsonian drugs.
1.19.61 Describe pharmacokinetics and pharmacological actions of Antiparkinsonian drugs.
1.19.62 Describe the adverse effects and their management, important drug interactions of Levodopa
1.19.63 Describe Alzheimer's disease and its pathophysiology.
1.19.64 Classify Cognition enhancers.
1.19.65 Describe drugs used in Alzheimer's disease

Alcohol

□ _____ SGD - 1 Hour
□ Assessment: Written / Viva voce

PH 1.20 Describe the effects of acute and chronic ethanol intake

1.20.1 Classify alcoholic beverages based on their alcohol content
1.20.2 Describe pharmacological effects of acute and chronic ethanol intake.
1.20.3 Describe the pharmacokinetics of ethanol.
1.20.4 Describe the important drug interactions with ethanol principles of alcohol de addiction.
1.20.5 Describe drugs used in alcohol deaddiction
1.20.6 Explain the therapeutic uses of alcohol.

Methanol and Ethanol poisoning

□ _____ SGD - 1 Hour
□ Assessment: Written / Viva voce

PH 1.21 Describe the symptoms and management of methanol and ethanol poisonings

1.21.1 Describe the symptoms of methanol poisoning.
1.21.2 Explain the mechanism of methanol poisoning.

1.21.3 Describe the management of methanol poisoning.
1.21.4 Describe the symptoms of ethanol poisoning.
1.21.5 Explain the mechanism of ethanol poisoning.
1.21.6 Describe the management of ethanol poisoning.

Drugs of Abuse

SGD - 1 Hour
Assessment: Written / Viva voce

PH 1.22 Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)

1.22.1 Define drug addiction and drug dependence.
1.22.2 List the pharmacological classes of drugs of abuse.
1.22.3 Classify the drugs of abuse based on the CNS effects (stimulants, depressants, hallucinogens) with examples.
1.22.4 Give examples of hallucinogens.
1.22.5 Describe the source, pharmacological effects. withdrawal symptoms and the management of cocaine addiction.
1.22.6 Describe the source, pharmacological effects. withdrawal symptoms and the management of barbiturate addiction.
1.22.7 Describe the source, signs and symptoms and withdrawal symptoms of morphine addiction and its management.
1.22.8 Describe the source, signs and symptoms of addiction to and withdrawal symptoms and management of cannabis addiction.
1.22.9 Enumerate the drugs of abuse associated with criminal offences.
1.22.10 Enumerate club drugs, the signs and symptoms of their addiction, withdrawal symptoms and management of their addiction.

SGD - 1 Hour

Assessment: Written / Viva voce

PH 1.23 Describe the process and mechanism of drug deaddiction

1.23.1 Outline the general principles and steps in the management of drug deaddiction
1.23.2 Explain the mechanism of action of the drugs used in drug deaddiction.

Drugs acting on Kidney

Lecture/ SDL – 3/1 Hours
Assessment: Written, Viva voce

PH 1.24 Describe the mechanism/ s of action, types, doses, side effects, indications and contraindications of the drugs affecting renal systems including diuretics, antidiuretic s- vasopressin and analogues

1.24.1 Explain the transport of electrolytes at proximal convoluted tubule, loop of Henle, distal convoluted tubule and the collecting duct.
1.24.2 Classify diuretics based on their efficacy with examples.

1.24.3 Indicate the site of action of all classes of diuretics.
1.24.4 Explain the mechanism of action, pharmacological actions and adverse effects of Thiazide diuretics.
1.24.5 Explain the mechanism of action, pharmacological actions and adverse effects of Loop diuretics
1.24.6 Explain the mechanism of action and pharmacological actions and adverse effects of potassium sparing diuretics.
1.24.7 Explain the mechanism of action and pharmacological actions and adverse effects of osmotic diuretics.
1.24.8 Describe the therapeutic uses of diuretics with their rationale.

1.24.9 Briefly describe the carbonic anhydrase inhibitors and their current uses.
1.24.10 Enumerate doses, routes of administration and preparations of hydrochlorothiazide, furosemide, amiloride, eplerenone, triamterene
1.24.11 Classify vasopressin receptors
1.24.12 Describe the physiological actions of Vasopressin
1.24.13 Classify anti-diuretic drugs
1.24.14 Enumerate the vasopressin analogues
1.24.15 Describe the adverse effects of Vasopressin.
1.24.16 Describe the therapeutic uses of Vasopressin and its analogues explaining the rationale behind their use
1.24.17 Mention vasopressin antagonist and its clinical uses

Drugs affecting Blood

- Lecture/ SDL – 3/ 1 Hours
- Assessment: Written, Viva voce

PH 1.25 Describe the mechanism/ s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders

Coagulants and Anti-coagulants

1.25.1 Describe the coagulation cascade
1.25.2 Define the role of coagulants with examples
1.25.3 Enumerate the coagulants used clinically
1.25.4 Explain the mechanism of anti-coagulant action, adverse effects and therapeutic uses of Vitamin K.
1.25.5 Classify anti-coagulants based on their mechanism of action with examples.
1.25.6 Describe the pharmacological actions, pharmacokinetics and adverse effects of Heparin
1.25.7 Explain the therapeutic uses and contraindications to Heparin.
1.25.8 Describe the advantages and disadvantages of low molecular weight heparin.
1.25.9 Enumerate the preparations, routes and dose of Heparin.
1.25.10 Describe the treatment of Heparin overdose
1.25.11 Compare the anticoagulant actions of Heparin with fondaparinux.
1.25.12 Describe the mechanism of action, pharmacokinetics and actions of Warfarin
1.25.13 Describe the adverse effects and therapeutic uses of Warfarin.
1.25.14 Explain the dose regulation and monitoring of patients while on anti-coagulants with reference to parameters such as INR and APTT.
1.25.15 Explain the Drug interactions of warfarin

1.25.16 Give examples of Direct factor Xa inhibitor and explain their advantages over Warfarin.
1.25.17 Explain the advantages and disadvantages of dabigatran over warfarin as anti-coagulant
1.25.18 Describe how anticoagulant therapy is monitored

Fibrinolytic and Antifibrinolytic drugs

1.25.19 Define fibrinolysis and its mechanisms
1.25.20 Enumerate fibrinolytics
1.25.21 Describe the actions, adverse effects and advantages of alteplase over streptokinase
1.25.22 Describe the therapeutic uses of fibrinolytics
1.25.23 Describe the contra-indications to fibrinolytics
1.25.24 Describe antifibrinolytics and its application
1.25.25 Explain the mechanism of action, indications and therapeutic uses of Tranexamic acid

Antiplatelets

1.25.26 Define the functions of platelets in cardiovascular diseases
1.25.27 Classify anti-platelet drugs based on their mechanisms of action with examples
1.25.28 Compare aspirin, dipyridamole and clopidogrel as anti-platelet agents
1.25.29 Describe the therapeutic uses of anti-platelet agents with the rationale for their use in the conditions mentioned

1.25.30 Describe the indications for the use of newer antiplatelet agents
1.25.31 Compare the newer anti-platelet drugs with aspirin

Plasma Expanders

1.25.32 Define plasma expanders
1.25.33 Classify plasma expanders with examples
1.25.34 Describe the mechanism of actions of crystalloids and colloids
1.25.35 Explain the detailed composition of crystalloids
1.25.36 Compare crystalloids and colloids
1.25.37 Describe the adverse effects and precautions while using plasma expanders
1.25.38 Describe the therapeutic uses of plasma expanders

Drugs affecting Renin Angiotension and Aldosterone system

- Lecture/ SDL – 1/ 2 Hours
- Assessment: Written, Viva voce

PH 1.26 Describe mechanism of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin- angiotensin and aldosterone system

1.26.1 Explain the physiology of renin angiotensin system
1.26.2 Describe the patho-physiological actions of Angiotensin-II with reference to the location of its receptors
1.26.3 Enumerate the drugs that modulate Renin angiotensin system
1.26.4 Enumerate the Angiotensin converting enzyme inhibitors (ACEIs)
1.26.5 Describe the mechanism of action and pharmacological actions of Angiotensin converting enzyme inhibitors

1.26.6 Describe the adverse effects and therapeutic uses of ACE inhibitors explaining the rationale for their uses
1.26.7 Indicate the route, dose and preparations of enalapril, Lisinopril
1.26.8 Enumerate Angiotensin receptor blockers (ARBs) used clinically
1.26.9 Describe the pharmacological actions, adverse effects, and therapeutic uses of ARBs
1.26.10 Describe the advantages of ARBs over ACEIs
1.26.11 Explain the mechanism of action, pharmacokinetics therapeutic uses and adverse effects of Aliskiren

Antihypertensive Drugs and drugs used in Shock

Lecture/ SGD – 1/ 2 Hours
Assessment: Written, Viva voce

PH 1.27 Describe the mechanism s of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock

1.27.1 Define the categories of hypertension as per JNC 7 and JNC 8 criteria
1.27.2 Describe the pathophysiology of hypertension
1.27.3 Classify anti-hypertensives with examples
1.27.4 Describe the mechanism of antihypertensive action, anti-hypertensive effects, adverse effects and drug interactions dose, routes of administration and uses of Diuretics in hypertension
1.27.5 Describe the mechanism of antihypertensive action, anti-hypertensive effects, adverse effects, drug interactions, dose, routes of administration and uses of ACE inhibitors in hypertension
1.27.6 Describe the mechanism of antihypertensive action, anti-hypertensive effects, adverse effects, drug interactions, dose routes of administration and uses of calcium channel blockers in hypertension
1.27.7 Describe the mechanism of antihypertensive action, anti-hypertensive effects, adverse effects, drug interactions, dose routes of administration and uses of beta blockers in hypertension
1.27.8 Enumerate the sympatholytic used in the management of hypertension
1.27.9 Explain the mechanism of action, adverse effects and indications for the use of sympatholytic.
1.27.10 Explain the management of hypertensive crisis
1.27.11 Describe the mechanism of antihypertensive action, anti-hypertensive effects, adverse effects, drug interactions, and use of alpha blockers in hypertension.
1.27.12 Describe the mechanism of antihypertensive action, anti-hypertensive effects, adverse effects, drug interactions, dose routes and uses of Vasodilators in hypertension
1.27.13 Discuss which drugs are used in combination in the management of Hypertension.
1.27.14 Describe which drugs are most effective in treating individual hypertensive patients with specific comorbidities, including diabetes mellitus, congestive heart failure, and renal disease.
1.27.15 Pharmacotherapy of Pulmonary Hypertension and Orthostatic hypotension.
1.27.16 Management of Hypertension during pregnancy.

Pharmacotherapy of Shock

1.27.17 Define shock
1.27.18 Enumerate the types of shock
1.27.19 Explain the pathophysiology of shock
1.27.20 Describe the pharmacological management of anaphylacticshock explaining the rationale for the use of drugs used in the management

1.27.21 Describe the pharmacological management of hypovolemic shock explaining the rationale for the use of drugs used in the management

1.27.22 Describe the pharmacological management of cardiogenic shock explaining the rationale for the use of drugs used in the management.

Pharmacotherapy of Angina pectoris, Acute MI and PVD

- Lecture/ SGD – 2/ 1 Hours
- Assessment: Written, Viva voce

PH 1.28 Describe the mechanism s of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease

1.28.1 Define angina pectoris

1.28.2 Explain the various types of angina pectoris describing their underlying pathology

1.28.3 Classify anti-anginal drugs

1.28.4 Describe the mechanism of action, pharmacological actions, adverse effects and therapeutic uses of nitrates

1.28.5 Describe the routes of administration, doses and preparations of Nitrates

1.28.6 Classify Calcium channel blockers.

1.28.7 Describe the mechanism of action, pharmacological actions, adverse effects and therapeutic uses of calcium channel blockers

1.28.8 Mention the routes of administration, doses and preparations of Nifedipine and amlodipine

1.28.9 Mention the unique features of Felodipine, Nitrendipine, Cilnidipine, Nicardipine and Nimodipine

1.28.10 Compare Dihydropyridines with Phenylalkylamines

1.28.11 Describe the anti-anginal actions, adverse effects and contra-indications to beta blockers

1.28.12 Describe the mechanism of action, anti-anginal actions, adverse effects and the indication for the use of potassium channel openers (nicorandil) in angina pectoris

1.28.13 Describe the anti-anginal actions and indications for the use of Trimetazidine in angina pectoris

1.28.14 Describe the anti-anginal actions and indications for the use of Ranolazine in angina pectoris

1.28.15 Describe the anti-anginal actions and indications for the use of Ivabradine in angina pectoris

1.28.16 Explain the pathophysiology of myocardial infarction

1.28.17 Explain the steps in the use of drugs in myocardial infarction with the rationale for using them

1.28.18 Describe the pathophysiology of peripheral vascular disease (PVD)

1.28.19 Classify the drugs used in PVD

1.28.20 Describe the mechanism of action, pharmacological actions, adverse effects, dose and uses of Pentoxyphylline.

1.28.21 Describe the mechanism of action,pharmacological actions,adverse effects, dose and uses of Cilostazol.

Pharmacotherapy of Heart Failure

- Lecture – 1 Hour
- Assessment: Written, Viva voce

PH 1.29 Describe the mechanism s of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure

1.29.1 Describe the stages of heart failure and the treatments that are recommended at each stage.
1.29.2 Describe the rationale for the use of drugs that prevent and slow the progression of heart failure
1.29.3 Describe the mechanism of action of inotropic drugs and how they are used to maintain left ventricular function.
1.29.4 Identify the major side effects and adverse drug reactions of the drugs used to treat heart failure.
1.29.5 Describe the Management of Digitalis Toxicity

Pharmacotherapy of Cardiac Arrhythmias (Non Core)

- SDL/ Lecture – 1/ 1 Hour
- Assessment: Written, Viva voce

PH 1.30 Describe the mechanism s of action, types, doses, side effects, indications and contraindications of the antiarrhythmics

1.30.1 Describe the principles of cardiac electrophysiology especially the ion channels, exchangers, and pumps that are targets of antiarrhythmic drugs.
1.30.2 Describe the mechanisms that cause cardiac arrhythmias.
1.30.3 Describe the common and important tachyarrhythmias and their mechanisms.
1.30.4 Describe the mechanisms and classification of antiarrhythmic drugs.
1.30.5 Describe the principles of antiarrhythmic drug pharmacotherapy
1.30.6 Describe the pharmacological, pharmacokinetic, and adverse effects of specific antiarrhythmic agents.

Hypolipdaemic drugs

- Lecture / SDL– 1/ 1 Hour
- Assessment: Written, Viva voce

PH 1.31 Describe the mechanism s of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemias

1.31.1 Describe lipid metabolism, different classes of lipoproteins and their formation
1.31.2 Describe the pathophysiology of primary and secondary hyperlipidaemias
1.31.3 Mention the classification of hypolipidemic drugs based on mechanism of action
1.31.4 Describe the mechanism of action, pleiotropic effects, indications adverse effects, drug interactions of
statins 1.31.5 Compare the features of all statins
1.31.6 Describe the mechanism of action, indications adverse effects, drug interactions of Resins, ezetimibe, niacin, fibric acid derivatives
1.31.7 Describe the combination therapy in dyslipidaemia
1.31.8 Discuss which patients with dyslipidaemias should be treated and when

treatment should be initiated.

1.31.9 Discuss which drugs are most effective in treating patients with different dyslipidaemias.

1.31.10 Describe the non-pharmacological treatment including natural agents

Drugs used in Bronchial Asthma and COPD

- Lecture - 2 Hours
- Assessment: Written, Viva voce

PH- 1.32 Describe the mechanism/ s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD

1.32.1 Describe the patho-physiology of Bronchial Asthma and COPD

1.32.2 Classification of anti-asthmatic drugs

1.32.3 Discuss the mechanism of action, pharmacokinetics, Adverse effects, status, merits and demerits of beta2 agonists, methyl xanthines, corticosteroids, anti-cholinergics, mast cell stabilizers, leukotriene antagonists, anti IgE antibodies in asthma.

1.32.4 Discuss inhaled medication in bronchial asthma

1.32.5 Describe the step wise management of Bronchial asthma (GINA guidelines)

1.32.6 Describe the management of acute severe asthma with the help of a case scenario

1.32.7 Enumerate the various inhalational devices available in India

1.32.8 Describe the advantages and disadvantages of MDI, rotahaler, use of spacer, nebulizer

Pharmacotherapy of cough

- SGD - 1 Hour
- Assessment: Written/ Viva voce

PH- 1.33 Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussive s, expectorant s/ mucolytics)

1.33.1 Explain the cough pathway.

1.33.2 Enumerate various causes of cough

1.33.3 State the various causes of cough

1.33.4 Classify the drugs used in cough

1.33.5 Explain the mechanism of action, indications and adverse effects of pharyngeal demulcents, expectorants, mucolytics and anti-tussive with examples

1.33.6 List the drugs that induce cough and bronchospasm

1.33.7 Comment on the preparations available in Indian market for cough

Drugs used in Disorders of Gastrointestinal Tract

- Lecture/ SGD/ SDL - 1/ 3/1 Hours

Assessment: Written/ Viva voce

PH- 1.34- Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below:

Acid- peptic disease and GERD
Antiemetics and prokinetics
Antidiarrhoeals
Laxatives

Inflammatory Bowel Disease
Irritable Bowel disorders, Biliary and Pancreatic disorders.

1.34.1 Explain the physiology of vomiting and role of various neurotransmitters
1.34.2 Classification of anti-emetics based on mechanism of action
1.34.3 Describe the mechanism of action, pharmacological effects, adverse effects and indications of antidopaminergics, antihistaminic, anticholinergics, 5HT3 antagonists, NK1 antagonists, cannabinoid receptor antagonists, steroids which are used as antiemetics
1.34.4 Enumerate the drug of choice for various clinical scenarios, such as post-operative vomiting, cancer chemotherapy induced vomiting etc
1.34.5 Enumerate drugs used in vomiting during pregnancy
1.34.6 Enumerate the drugs that cause emesis.
1.34.7 Compare and contrast Metoclopramide and Domperidone
1.34.8 Pathophysiology of gastric acid secretion
1.34.9 Identify the sites in the gastric parietal cell where drugs act to suppress acid secretion.
1.34.10 Describe the mechanism of action of proton pump inhibitors, H2 receptor antagonists, and prostaglandin analogs to suppress gastric acid secretion.
1.34.11 Describe the limitations to the use of H2 receptor antagonists in chronic acid suppression.
1.34.12 Identify potential drug interactions with proton pump inhibitors and H2 receptor antagonists
1.34.13 Describe the mechanism of action of drugs that enhance gastric cytoprotection.
1.34.14 Describe the recommendations for therapy of gastroesophageal reflux disease (GERD)
1.34.15 Explain the pathophysiology of constipation
1.34.16 Classify laxatives/purgatives
1.34.17 Explain the mechanism of action, indications, contra-indications and adverse effects of bulk laxatives, stool softener, stimulant purgative, osmotic purgative and 5HT4 agonists
1.34.18 Mention the laxative of choice in bedridden patients, pregnancy, post-operative, functional constipation
1.34.19 Classify antidiarrheal agents.
1.34.20 Enumerate the principles of management of Diarrhea with rationale for its composition
1.34.21 Discuss the advantages of New formula WHO-ORS versus the older composition.
1.34.22 Explain the role of Zinc in pediatric diarrhea
1.34.23 Explain the mechanism of action, indications, contra-indications and adverse effects of opioids, anticholinergics, PG inhibitors, chloride channel inhibitor, racecadotril and probiotics
1.34.24 Explain the pathophysiology and pharmacotherapy of Irritable bowel syndrome
1.34.25 Explain the pathophysiology and pharmacotherapy of Inflammatory bowel disorder, Acute pancreatitis
1.34.26 Explain the pancreatic enzyme replacements and drugs that inhibit formation of gall stones

Drugs affecting Blood Formation

- SDL/ SGD - 1/2 Hours
- Assessment: Written/ Viva voce

PH 1.35 - Describe the mechanism/ s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like:

Drugs used in anemias
Colony Stimulating factors

1.35.1 Define anaemias and describe the types and causes of anaemia

1.35.2 State the role of iron, its sources, requirements, iron absorption, factors that reduce and enhance iron absorption
1.35.3 List the oral and parenteral iron preparations with merits and demerits and specific indications
1.35.4 Define megaloblastic anaemia
1.35.5 State the role of vitamin B12, Folic acid, along with sources and daily requirements
1.35.6 State the vitamin B12 preparations
1.35.7 State the indications for use of erythropoietin
1.35.8 Describe the various types of colony stimulating factors with their approved indications (Cancer chemotherapy)

Drugs used in Endocrine Disorders

Lecture/ SDL/ SGD - 3/1/1 Hours

Assessment: Written/ Viva voce

PH 1.36 - Describe the mechanism of action, types, doses, side effects indications and contraindications of drugs used in endocrine disorders (diabetes mellitus, thyroid disorders and osteoporosis)

Diabetes Mellitus

1.36.1 Describe the mechanisms of action of insulin and the oral antidiabetic drugs.
1.36.2 Describe the components for management of the diabetic patient including the goals of therapy.
1.36.3 Describe the pharmacotherapeutic options for the treatment of patients with type 1 or type 2 diabetes.
1.36.4 Describe the adverse effects of insulin and the oral antidiabetic drugs.
1.36.5 Describe the treatment of hypoglycemia.
1.36.6 Discuss the management of diabetic ketoacidosis and hyperosmolar (nonketotic) coma

Thyroid disorders

1.36.7 Discuss the principles of thyroid hormone regulation.
1.36.8 Describe the diagnosis and treatment of hypothyroidism and hyperthyroidism, including during pregnancy.
1.36.9 Describe the treatment options for well-differentiated thyroid cancer.

Osteoporosis

1.36.10 Describe calcium and phosphorous homeostasis.
1.36.11 Describe the roles of PTH, calcitonin, and vitamin D in calcium homeostasis.
1.36.12 Understand the concept of bone resorption and bone formation.
1.36.13 Describe the mechanism of action and untoward effects of bisphosphonates.
1.36.14 Describe the role of bisphosphonates in the prevention and treatment of osteoporosis.
1.36.15 Describe the pharmacological management of hypocalcemia and hypercalcemia.

Lecture/SGD- 2/2 hours

Assessment: Written/ Viva voce

PH 1.37 Describe the mechanism s of action, types, doses, side effects, indications and contraindications of the drugs used as sex hormones, their analogues and anterior Pituitary hormones

1.37.1 Describe the functioning of the hypothalamic-pituitary axis
1.37.2 Describe the pharmacotherapy of GH excess and GH deficiency.
1.37.3 Develop knowledge of the clinical uses of gonadotropin-releasing hormone (GnRH) and its analogs.

Androgens and antiandrogens

1.37.4 Describe physiological secretion and regulation of androgens (natural and synthetic)
1.37.5 Describe mechanism of action, uses and adverse effects of different preparations of testosterone
1.37.6 Explain mechanism of action, uses and adverse effects of anabolic steroids and anti-androgens
1.37.7 Describe drug therapy of erectile dysfunction

Estrogens and Progestins

1.37.8 Describe physiological secretion and regulation of estrogen and progesterone
1.37.9 Describe the therapeutic uses and ADRs of postmenopausal hormonal replacement therapy
1.37.10 Describe mechanism of action, uses and adverse effects of selective estrogen receptor modulators, anti-estrogens and aromatase inhibitors
1.37.11 Describe mechanism of action, uses, adverse effects and contraindications of anti progestins
1.37.12 Explain various drugs used in treatment of infertility

Lecture - 1 Hour

Assessment: Written/ Viva voce

PH 1.38 Describe the mechanism of action, types, doses, side effects, indications and contraindications of corticosteroids

1.38.1 Explain physiology of biosynthesis, actions, hypo and hyper secretion of corticosteroids
1.38.2 Classify corticosteroid preparations
1.38.3 Describe distinctive features, uses, adverse effects and contraindications of various corticosteroid preparations
1.38.4 Understand the effect of abrupt cessation of glucocorticoid therapy.

SGD - 2 Hours

Assessment: Written/ Viva voce

PH 1.39 Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception

1.39.1 Classify female contraceptives preparations
1.39.2 Explain all types with mechanism of action, uses adverse effects, contraindications and practical considerations of female contraceptives.

Lecture – 2 Hours
Assessment: Written/ Viva voce

PH 1.40 Describe mechanism of action, types, doses, side effects, indications and contraindications of

Drugs used in the treatment of infertility, and
Drugs used in erectile dysfunction

1.40.1 Describe the causes of infertility
1.40.2 Enumerate drugs used in the treatment of infertility
1.40.3 Describe the mechanism of action of drugs used in the treatment of infertility
1.40.4 Describe the therapeutic uses of drugs used in the treatment of infertility
1.40.5 Describe the precautions and contraindications of drugs used in the treatment of infertility
1.40.6 Describe the adverse effects of drugs used in the treatment of infertility
1.40.7 Describe the drug interactions of drugs used in the treatment of infertility
1.40.8 Describe the causes of erectile dysfunction
1.40.9 Enumerate drugs used in erectile dysfunction
1.40.10 Describe the mechanism of action of drugs used in erectile dysfunction
1.40.11 Describe the therapeutic uses of drugs used in erectile dysfunction

SGD - 1 Hour
Assessment: Written/ Viva voce

PH 1.41 Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants

1.41.1 Classify uterine stimulants
1.41.2 Explain mechanism of action, uses, adverse effects and contraindications of each group
1.41.3 Classify uterine relaxants.
1.41.4 Explain mechanism of action, uses, adverse effects and contraindications of each group

Chemotherapy

Lecture/SGD- 2/2 hours
Assessment: Written/ Viva voce

PH 1.42 Describe general principles of chemotherapy

General Principals

1.42.1 Classify the chemotherapeutic agents based on chemical structure, mechanism of action, source

1.42.2 Describe common problems encountered with use of chemotherapeutic agents

1.42.3 Describe anti-microbial resistance and discuss monitoring of antimicrobial therapy

1.42.4 Enumerate the factors to be considered for choosing an antimicrobial agent

1.42.5 Mention the advantages and disadvantages of antimicrobial combination with examples

Sulfonamides & Quinolones

1.42.6 Explain the mechanism of action of sulfonamides drugs.

1.42.7 Explain the various sulfonamide drugs and categorize them according to their absorption from the gastrointestinal (GI) tract.

1.42.8 Explain the therapeutic uses and untoward effects of sulfonamide drugs including trimethoprim-sulfamethoxazole.

1.42.9 Describe the therapeutic uses, mechanisms of action, and toxicities of quinolone antibiotic drugs.

Beta lactams

1.42.10 Explain the mechanisms of action of the penicillins, cephalosporins, and other β-lactam antibiotics.

1.42.11 Explain the mechanisms of resistance of the penicillins, cephalosporins, and other β-lactam antibiotics.

1.42.12 Describe the therapeutic effects of the penicillins, cephalosporins, and other β-lactam antibiotics.

1.42.13 Describe the untoward effects and contraindications of the penicillins, cephalosporins, and other β-lactam antibiotics.

Aminoglycosides

1.42.14 Explain aminoglycoside mechanisms of action and resistance.

1.42.15 Describe the advantages and disadvantages of multiple daily dosing versus once daily extended-interval dosing regimens for aminoglycosides.

1.42.16 Describe the rationale and the methods of plasma concentration monitoring of aminoglycoside therapy.

1.42.17 Describe the causes and clinical signs of aminoglycoside ototoxicity and nephrotoxicity and the best means of monitoring therapy to avoid these serious toxicities.

1.42.18 Explain the unique clinical differences among the aminoglycosides.

1.42.19 Describe the mechanisms of action and resistance of tetracyclines, macrolides, vancomycin, linezolid, daptomycin, and quinupristin/dalfopristin

1.42.20 Describe the unique toxicities of antibiotics that are inhibitors of bacterial protein synthesis

1.42.21 Describe the uses and untoward reactions of vancomycin

1.42.22 Explain the drug–drug interactions that occur with some of these antibiotics

1.42.23 Explain how linezolid, daptomycin, and quinupristin/dalfopristin are used to treat methicillin- resistant and vancomycin-resistant organisms

SGD – 4 Hour
Assessment: Written, Viva voce

PH 1.43 - Describe and discuss the rational use of antimicrobials including antibiotic stewardship program

1.43.1 Enumerate the factors influencing the antimicrobial selection, duration and dose
1.43.2 Define appropriate empiric antimicrobial prescribing
1.43.3 Highlight mechanisms by which microorganisms develop antimicrobial resistance
1.43.4 Understand the impact of pharmacodynamics, pharmacokinetics, bioavailability on development of antimicrobial resistance with examples
1.43.5 Understand the principles of antimicrobial selection for a specific infectious condition
1.43.6 Enumerate basic steps of prevention of antimicrobial resistance

Lecture – 1 Hour
Assessment: Written, Viva voce

PH 1.44 - Describe the first line anti tubercular dugs, their mechanisms of action, side effects and doses

1.44.1 Discuss pathophysiology of tuberculosis.
1.44.2 Enumerate various anti- tubercular drugs.
1.44.3 Describe the mechanism of action and resistance to anti tubercular drugs.
1.44.4 Describe the adverse effects and drug interactions commonly associated with anti-TB drugs.
1.44.5 Understand the rationale for combination drug therapy in the treatment of tuberculosis
1.44.6 Describe and discuss the salient features, diagnostic criteria and guidelines for treatment of tuberculosis under NTEP

Lecture – 1 Hour
Assessment: Written, Viva voce

PH 1.45 - Describe the drugs used in MDR and XDR Tuberculosis

1.45.1 Define MDR and XDR TB
1.45.2 List drugs, mechanism of action, indications, contraindications and adverse effects of drugs used in MDR and XDR Tuberculosis.
1.45.3 Explain the regimen for MDR and XDR tuberculosis

Lecture – 1 Hour
Assessment: Written, Viva voce

PH 1.46 - Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs

1.46.1 Describe the principles of anti-leprosy therapy.
1.46.2 Describe the mechanism of action, ADE, DI of antileprotic drugs
1.46.3 Discuss the management of leprosy and treatment of Lepra reactions

Lecture/ SGD – 4/2 Hours
Assessment: Written, Viva voce

PH 1.47 - Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis

1.47.1 Describe the stages of the malaria parasite in the human body.
1.47.2 Classify antimalarial drugs into those that are effective against only the blood stages of the parasite, those that are effective against both the blood and liver stages, and those that are effective against only the liver stages of the parasite.
1.47.3 Explain the use of antimalarial drugs in clinical context, particularly with regard to their mechanism of action, therapeutic uses, and toxicities.
1.47.4 Describe the principles and guidelines for the chemoprophylaxis and treatment of malaria.
1.47.5 Define KALA-AZAR
1.47.6 Discuss pathophysiology of KALA-AZAR
1.47.7 Enumerate drugs used in KALA-AZAR
1.47.8 Describe the mechanism of action of drugs used in KALA-AZAR
1.47.9 Describe the therapeutic uses of drugs used in KALA-AZAR
1.47.10 Describe the precautions and contraindications of drugs used in KALA-AZAR
1.47.11 Describe the adverse effects of drugs used in KALA-AZAR
1.47.12 Describe the drug interactions of drugs used in KALA-AZAR
1.47.13 Describe the management of KALA-AZAR
1.47.14 Define amoebiasis
1.47.15 Discuss pathophysiology of amoebiasis
1.47.16 Enumerate drugs used for amoebiasis
1.47.17 Describe the mechanism of action of drugs used for amoebiasis
1.47.18 Describe the therapeutic uses of drugs used for amoebiasis
1.47.19 Describe the precautions and contraindications of drugs used for amoebiasis
1.47.20 Describe the adverse effects of drugs used for amoebiasis
1.47.21 Describe the drug interactions of drugs used for amoebiasis
1.47.22 Describe the management of amoebiasis
1.47.23 Describe the common helminth infections, the clinical symptoms, and the mainstays of therapy.
1.47.24 Describe the therapeutic uses of anthelmintic drugs.
1.47.25 Explain the mechanisms of actions of anthelmintic drugs.
1.47.26 Describe the toxicities and contraindications of anthelmintic drugs

Lecture/ SGD – 3/2 Hours
Assessment: Written, Viva voce

PH 1.48 - Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV &Antifungal drugs

1.48.1 Define UTI
1.48.2 Discuss pathophysiology of UTI
1.48.3 Enumerate drugs used for UTI
1.48.4 Describe the mechanism of action of drugs used for UTI
1.48.5 Describe the therapeutic uses of drugs used for UTI
1.48.6 Describe the precautions and contraindications of drugs used for UTI
1.48.7 Describe the adverse effects of drugs used for UTI
1.48.8 Describe the drug interactions of drugs used for UTI
1.48.9 Describe the management of UTI

1.48.10 Define STD
1.48.11 Enumerate common STDs
1.48.12 Enumerate drugs used in STDs
1.48.13 Describe the mechanism of action of drugs used in STD
1.48.14 Describe the precautions and contraindications of drugs used in STD
1.48.15 Describe the adverse effects of drugs used in STD
1.48.16 Describe the drug interactions of drugs used in STD
1.48.17 Describe the management of STD
1.48.18 Describe the mechanisms of action and resistance of antifungal agents.
1.48.19 Describe the therapeutic uses of antifungal agents in the context of treatment for fungal diseases
1.48.20 Develop knowledge of the common and unique toxicities of antifungal agents.
1.48.21 Explain the drug–drug interactions that can occur with the use of azole antifungal agents
1.48.22 Explain the treatment of herpes virus infections and the use of anti-herpes drugs
1.48.23 Discuss the treatment strategies for chronic hepatitis B and C infections
1.48.24 Explain the mechanisms of action and resistance, and the therapeutic use of the anti-influenza agents
1.48.25 Discuss the principles of HIV chemotherapy as per National guidelines including HAART regimen
1.48.26 Describe the mechanisms of action and resistance, the untoward effects and the therapeutic uses of the drugs used to treat HIV infections

Anticancer drugs

- Lecture – 2 Hours
- Assessment: Written, Viva voce

PH 1.49 Describe mechanism of action, classes, side effects, indications and contraindications of anticancer drug

1.49.1 Discuss the general principles in chemotherapy of Cancer
1.49.2 Classify anticancer drugs
1.49.3 Describe the mechanism of action of Anticancer drugs
1.49.4 Describe the mechanisms of toxicity of cytotoxic antineoplastic agents on normal cells and strategies for reducing toxic effects
1.49.5 Enumerate the classes of agents are typically used in treating specific cancers

Immunomomodulators

- Lecture – 1 Hour
- Assessment: Written, Viva voce

PH 1.50 Describe mechanisms of action, types, doses, side effects, indications and contraindications of immunomodulators and management of organ transplant rejection

1.50.1 Differentiate between Immuno-suppressants and immuno-stimulants
1.50.2 Define immunosuppressants & Classify immuno-suppressants
1.50.3 Describe the mechanisms of action of Calcineurin inhibitors
1.50.4 Enlist m-Tor inhibitors and antiproliferative agents used as immunosuppressants
1.50.5 Enlist Biological agents used as immunosuppressants
1.50.6 Enumerate the adverse effects of immunosuppressants
1.50.7 Enlist clinical uses of immunosuppressants

Occupational and Environmental Pesticides, Food Adulterants, Pollutants and Insect Repellents

SDL – 1 Hour
Assessment: Written, Viva voce

PH- 1.51 Describe occupational and environmental pesticides, food adulterants, pollutants and insect repellents

1.51.1 Define the various toxicology terms
1.51.2 Define occupational pesticides and enlist them
1.51.3 Explain environmental pesticide and its management
1.51.4 Enlist food adulterants
1.51.5 Enlist insect repellents

Pharmacotherapy of Poisoning

Lecture – 1 Hour
Assessment: Written, Viva voce

PH 1.52- Describe management of common poisoning, insecticides, common sting and bites

1.52.1 Explain the general management of common poisoning
1.52.2 Enlist the specific antidotes used in treatment of common poisons
1.52.3 Explain the method of enhancing elimination of toxin using examples
1.52.4 Explain the management of Bee sting bite, Scorpion bite and Snake bite

Chelating agents

SGD – 1 Hour

Assessment: Written, Viva voce

PH 1.53 - Describe heavy metal poisoning and chelating agents

1.53.1 Define Chelating agents and enlist Chelating agents used in Heavy metal poisoning
1.53.2 Describe the mechanism of action of Chelating agents
1.53.3 Name the Chelating agents used in the management of Iron, Lead, Copper, and Arsenic intoxication
1.53.4 Enlist the clinical uses of penicillamine

Vaccines and Antisera

SGD – 1 Hour
Assessment: Written, Viva voce

PH 1.54 - Describe vaccines and their uses

1.54.1 Define Vaccines and classify vaccines
1.54.2 Enlist the bacterial vaccines
1.54.3 Enlist the viral vaccines
1.54.4 Enlist Toxoids and Mixed Toxoids
1.54.5 Enlist antisera and immunoglobulins
1.54.6 Discuss the routine immunization schedule for infants and children as per IAP guidelines

National Health Programme

SGD – 2 Hours
Assessment: Written, Viva voce

PH 1.55 - Describe and discuss the following National Health Programme including Immunization, Tuberculosis, Leprosy, Malaria, HIV, Filaria, Kala Azar, Diarrhoeal diseases, Anaemia& nutritional disorders, Blindness, Non-communicable diseases, cancer and Iodine deficiency

1.55.1 Explain the universal immunization programme in India
1.55.2 Explain Revised National Tuberculosis Elimination Programme
1.55.3 Explain National Leprosy Eradication Programme
1.55.4 Enlist National Vector Borne Disease Control Programmes
1.55.5 Explain National AIDS Control Programme
1.55.6 Describe National programme for prevention and control of cancer, diabetes, cardiovascular diseases and stroke
1.55.7 Describe National Programme for Control of Blindness & Visual Impairment
1.55.8 Describe National Programme For Prevention and Control Of cancer
1.55.9 Discuss about the Diarrhoeal Disease Control Programme
1.55.10 Describe iodine deficiency disorders control programme

Geriatric and Pediatric pharmacology

Lecture – 1 Hour

Assessment: Written, Viva voce

PH 1.56 - Describe basic aspects of Geriatric and Pediatric pharmacology

1.56.1 Describe physiological changes in Children and Elderly patients that influence the pharmacokinetic and Pharmacodynamic parameters of medications.
1.56.2 Discuss the common drugs to which children/elderly are likely to respond differently
1.56.3 Explain the principles that underlie the prescribing in children/elderly

Pharmacotherapy of Skin disorder

SDL – 1 hr
Assessment: Written, Viva voce

PH 1.57- Describe drugs used in skin disorders

1.57.1 Discuss how drugs are absorbed through the skin.
1.57.2 Define demulcents, emollients, adsorbents& protectants, astringents, irritantsand counter irritants and keratolytic, Melanising agents with examples, their uses and adverse reactions.
1.57.3 Describe the mechanism of action, therapeutic uses, and toxicities of topical and systemic drugs used to treat common dermatological disorders like seborrheic dermatitis, Vitiligo, Psoriasis and Acne vulgaris.
1.57.4 Discuss the science behind use of sunscreen agents.
1.57.5 List the topical glucocorticoids, explain the rationale for use of glucocorticoids in skin disorders and their adverse effects.

Ocular Pharmacology

SGD – 1 Hour
Assessment: Written, Viva voce

PH 1.58 - Describe drugs used in Ocular disorders

1.58.1 Understand the principles of using drugs to treat ophthalmic disorders.
1.58.2 Describe the ocular toxicities of systemic drugs.
1.58.3 Explain the mechanisms of action, clinical uses, and toxicities of ophthalmic drugs.
1.58.4 Describe how ophthalmic drugs administered topically can cause systemic sideeffects.
1.58.5 Understand the pathophysiology of glaucoma and the role of pharmacotherapy in its management.

Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines

SGD– 2 Hours
Assessment: Written, Viva voce

PH 1.59- Describe and discuss the following: Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines

1.59.1 Define Essential medicines concept.
1.59.2 Discuss the criteria to prepare list of essential medicines for your community PHC.
1.59.3 Define fixed dose combination, advantages and disadvantages of FDC.
1.59.4 Describe the pharmacokinetic and pharmacodynamics parameters to be considered to combine two drugs in a FDC.
1.59.5 Discuss Rational and irrational prescribing drugs with examples.
1.59.6 Define over the counter medicines and prescription medicines.
1.59.7 Enumerate the similarities and differences between OTC medicines and prescription medicines.
1.59.8 Summarize how to responsibly use OTC medicines and prevent misuse.
1.59.9 List 10 Herbal medicines used in allopathic practice.
1.59.10 Enumerate advantages and disadvantages of Herbal medicines

Pharmacogenomics and Pharmacoeconomics

SGD - 1 Hour
Assessment: Written, Viva voce

PH 1.60- Describe and discuss Pharmacogenomics and Pharmacoeconomics

1.60.1 Define Pharmacogenomics and Pharmacogenetics and Pharmacoeconomics with examples
1.60.2 Describe different types of pharmacoeconomic models with examples
1.60.3 Discuss the role of Pharmacogenomics and Pharmacoeconomics in modern therapeutics.

Dietary Supplements and Nutraceuticals

SDL – 1 Hours
Assessment: Written, Viva voce

PH 1.61 - Describe and discuss dietary supplements and nutraceuticals

1.61.1 Describe the role of common vitamins and minerals in normal physiology and diseases.
1.61.2 Identify the potential toxic effects of vitamins and minerals.
1.61.3 List the fat soluble and water-soluble vitamins, and identify examples of how solubility affects the absorption, transport, storage and excretion of each type.
1.61.4 Describe how B vitamins assist with energy metabolism

1.61.5 Justify the statement "It is better to get vitamins from food than from supplements"
1.61.6 Enumerate anti-oxidant vitamins, list the food source and their functions
1.61.7 Analyze from the below list, valid reasons that some individuals require vitamin supplements
a. women in childbearing age
b. Pregnant and lactating women
c. Vitamins of AIDS or other wasting illness
d. Addicted to drugs or alcohol
e. Strict vegetarians
f. Eecovering from surgery, burns and injury.

Antiseptics and Disinfectants

SGD – 2 Hours

Assessment: Written, Viva voce

PH 1.62 Describe and discuss antiseptics and disinfectants

1.62.1 Describe antiseptics and their use in wound care with examples
1.62.2 Describe disinfectants and their use in infection control with examples
1.62.3 Summarize the adverse effects of antiseptics and disinfectants
1.62.4 Describe Ecto-parasiticides with examples, use and adverse effects
1.62.5 Discuss hand hygiene using soap as per WHO guidelines
1.62.6 Information on hand sanitizers

Drug Regulation

 _____ SGD – 1 hr
 Assessment: Written, Viva voce

PH 1.63 Describe Drug Regulations, acts and other legal aspects

1.63.1 Explain why drugs needs to be regulated
1.63.2 Identify the major regulatory authorities in India
1.63.3 Describe the approval process for New Drugs in simple terms.
1.63.4 Discuss the major legislation pertaining to drugs

Drug development and GCP

 _____ SGD – 1hrs
 Assessment: Written, Viva voce

PH 1.64 - Describe overview of drug development, Phases of clinical trials and Good Clinical Practice

1.64.1 Enlist the stages in new drug development
1.64.2 Explain the approaches to drug discovery /invention
1.64.3 Discuss about the preclinical studies
1.64.4 Describe the phases of clinical trials
1.64.5 Describe the Principles Good Clinical Practice

PANDEMIC MODULE 2.5

Therapeutic strategies including new drug development

Theory – 1 hour **Assessmen**t: Written, Viva voce

PH 2.5 - Describe stages of new drug development and clinical trial during a pandemic.

- Enlist the stages in new drug development during a pandemic.
- Describe drug repurposing with its importance and benefits.
- What is off- label drug use? Risks, benefits and implications examples
- Describe the clinical trial conduct during a pandemic.

SGD – 2 hours **Assessmen**t: Written, Viva voce

- New drug development – Challenges and solutions
- Urgency in procedures
- Need for monitoring – Pharmacovigilance activities of drugs approved for emergency use/clinical trials during Pandemic

PRACTICAL

Specific Learning Objectives in Pharmacology

(Skills and communication: Competency no-2.1 to 5.7)

Practical DOAP – 14 Hours Assessment: Skill Assessment

PH 2.1Demonstrate understanding of the use of various dosage forms (oral/ local/ parenteral; solid/liquid)

2.1.1 Identify various dosage forms – solid, liquid, topical dosage forms
2.1.2 Describe the various types of solid dosage form in the given samples with merits and demerits of each
2.1.3 Describe the various types of liquid dosage form in the given samples with merits and demerits of each
2.1.4 Describe the various types of topical dosage form in the given samples with merits and demerits of each
2.1.5 Describe all the components of commercial label of the given dosage form and its importance

Practical DOAP – 4Hours

Assessment: Skill Assessment

PH 2.2 Prepare oral rehydration solution from ORS packet and explain its use

2.2.1 Define and enumerate causes of dehydration
2.2.2 Describe the clinical assessment of dehydration
2.2.3 Enumerate the different types of ORS along with their composition with actions of each ingredient
2.2.4 Choose the appropriate type of ORS for a given condition/patient
2.2.5 Calculate the quantity of ORS required to correct / prevent dehydration
2.2.6 Demonstrate preparation of ORS from sachet
2.2.7 Enumerate non-diarrheal uses of ORS

Practical DOAP – 4 Hours

Assessment: Skill Assessment

PH 2.3 Demonstrate the appropriate setting up of an intravenous drip in a simulated environment

2.3.1 Open the infusion set following aseptic technique
2.3.2 Appropriately position the patient and select a vein.
2.3.3 Prepare the overlying skin with aseptic care.
2.3.4 Demonstrate correct IV injection technique and strap the cannula in place.
2.3.5 Identify any visible impurities if present in the IV fluids.
2.3.6 Adjust the flow rate according to the requirement
2.3.7 Routinely check patient's ID, drug name, date of expiry etc before injecting.
2.3.8 Monitor a patient on an IV drip and identify any reactions to it.

Practical DOAP – 4 Hours

Assessment: Skill Assessment

PH 2.4 Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations (integratation with General medicine, Paediatrics)

2.4.1 Calculate appropriate doses for individual patients based on age, body weight, and surface area
2.4.2 Demonstrate the correct method of calculation of drug dosage in paediatric patients
2.4.3 Demonstrate the iv drip rate calculation & infusion time
2.4.4 Demonstrate the correct method of calculation of drug dosage in patient suffering from renal disease
2.4.5 Demonstrate the correct method of calculation of drug dosage in patient suffering from hepatic disease

☐ _____ Skill station – 6 Hours
☐ Assessment: Skill Assessment and Certification

PH 3.1Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient (integratation with General medicine)

3.1.1 Establish therapeutic goal/s, based on a diagnosis following standard treatment guidelines (STG)
3.1.2 Choose the appropriate drug/s for the given clinical condition
3.1.3 Choose the appropriate dose, route, frequency and duration of therapy for the chosen drug/s
3.1.4 Write a legible prescription as per MCI format
3.1.5 Provide appropriate information to the patient regarding the prescription
3.1.6 Review/alter prescription in the light of further investigation
3.1.7 Explain the legality (legal implications) of prescriptions.

Examples of 5 Exercises
Iron deficiency anemia due to hook worm infestation
Acute attack of Migraine
Newly diagnosed obese type 2 DM with Hypertension
UTI in pregnancy
Typhoid fever in a child

☐ _____ Skill Lab – 6 Hours

☐ Assessment: Skill Assessment and Certification

PH 3.2 Perform and interpret a critical appraisal (audit) of a given prescription – 3 no.s

3.2.1 Demonstrate the understanding of importance of completeness of prescription
3.2.2 Demonstrate the understanding of clinical diagnosis for which drugs are prescribed
3.2.3 Demonstrate the understanding of MCI format of prescription
3.2.4 Identify and comment on any discrepancies in the completeness and legibility of the prescription
3.2.5 Identify and comment on any discrepancies in the selection of drug, drug form, dose, frequency, duration of the treatment, instructions according to STG
3.2.6 Re-Write the prescription correcting all the discrepancies identified

□ _____ Skill Lab – 6 Hours

□ Assessment: Skill Assessment and Certification

PH 3.3 Perform a critical evaluation of the drug promotional Literature - Brainstorming followed by demonstration – 3 no.s (integratation with General medicine)

3.3.1 Discuss the various types of sources of drug information
3.3.2 Demonstrate understanding of importance of critical evaluation of drug promotional liliterature
3.3.3 Critically evaluate the given drug promotional literature based on WHO criteria a. Appropriateness of illustration
b. Relevance of references cited
c. Content of scientific information

□ _____ Skill station – 4 Hours

Assessment: Skill Assessment – Log book

PH 3.4 To recognize and report an adverse drug reaction

3.4.1 Recognise an adverse drug reaction (ADR) in the given case
3.4.2 Perform causality assessment of the identified ADR using WHO & Naranjo's Scale
3.4.3 Fill the ADR reporting form (CDSCO from)
3.4.4 Explain the management of the ADR
3.4.5 Explain the methods to prevent the occurrence of the ADR
3.4.6 Report the ADR to the pharmacovigilance centre
3.4.7 Describe the Importance of reporting ADRs
3.4.8 Describe the various levels of reporting ADRs national and international centres
Example of 3 cases: Warfarin induced Bleeding
Aspirin (NSAID) induced Peptic Ulcer
Carbamazepine induced Steven Johnson Syndrome

□ _____ Skill Station – 6 Hours

□ Assessment: Skill Assessment and Certification

PH 3.5 To prepare and explain a list of P- drugs for a given case/ condition – 3 no.s (integratation with General medicine)

3.5.1 Define the diagnosis
3.5.2 Specify the therapeutic objective
3.5.3 Make an inventory of effective groups of drugs
3.5.4 Choose an effective group of drug according to efficacy, safety and suitability criteria
3.5.5 Choose the P-Drug for the given clinical condition

Example of 3 Exercises
Angina Pectoris
Amoebic Dysentry
Anxiety

Skill Station – 2 Hours

Assessment: Skill Assessment – Log book

PH 3.6 Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drugs

3.6.1 Enumerate the key elements in the WHO guidelines on Ethical criteria for medicinal drug promotion.

3.6.2 Direct the discussion with pharmaceutical representative so as to get the information he needs about the drug effectively.

3.6.3 Collect a copy of data sheet of the product under discussion.

3.6.4 Compare the verbal statements with those in the official text during presentation effectively.

3.6.5 Perform a prior literature search and check quality of research methodology of the drug under discussion including cost comparison.

3.6.6 Decide effectively whether to include the drug in personal formulary with regard to efficacy, safety and cost-effectiveness of medicines

Skill Station – 4 Hours

Assessment: Skill Assessment – Log book

PH 3.7 Prepare a list of essential medicine for a health care facility

3.7.1 Understand the concept of Essential Medicines List for the nation/state/ health care facility

3.7.2 Identify the factors that determine the choice of drugs in an Essential Medicines List.

3.7.3 Prepare a list of essential medicines for a healthcare facility, with justification in a given scenario

Skill Lab – 4 Hours Assessment: Skill Assessment

PH 3.8 Communicate effectively with a patient on proper use of prescribe medication

Insulins
Proton pump inhibitors
Statins
Ferrous sulphate tablets
Co-Amoxiclav or Cotrimoxazole

3.8.1 Communicate about the effects of the prescribed drug with regards to the following
Why the drug is needed
Which symptoms will disappear, and which will not
When the effect is expected to start
When the effect is expected to start

3.8.2 Communicate about the adverse effects of the prescribed drug with regards to the following

a. Which side effects may occur
b. How to recognize them
c. How long they will continue
d. How serious they are
e. What action to take

3.8.3 Communicate about the instructions of drug use as following:

a. How the drug should be taken
b. When it should be taken
c. How long the treatment should continue
d. How the drug should be stored
e. What to do with left-over drugs

3.8.4 Communicate about the warnings of the prescribed drug with regards to the following

a. When the drug should not be taken
b. What is the maximum dose
c. Why the full treatment course should be taken

3.8.5 Communicate about the future consultations with regards to the following:

a. When to come back (or not)
b. In what circumstances to come earlier
c. What information the doctor will need at the next appointment

3.8.6 Conclude the consultation by asking the following questions:

a. Ask the patient whether everything is understood
b. Ask the patient to repeat the most important information
c. Ask whether the patient has any more questions

DOAP sessions – 10 Hours Assessment: Skill Assessment

PH 4.1 Administer drugs through various routes in a simulated environment using mannequins

USE CHECKLIST FOR ASSESSMENT

Enteral Oral route

4.1.1 Identify the different dosage forms administered through the Oral route and instructions given to the patient for administering it.
4.1.2 Present the merits and demerits of Oral route of drug administration.
4.1.3 Demonstrate the administration of the drugs through oral route.
4.1.4 Identify the different equipment required for Nasogastric tube (NGT) insertion
4.1.5 Demonstrate the Nasogastric tube insertion and present the purpose.
4.1.6 Demonstrate the positioning of the patient during NGT insertion.
4.1.7 Demonstrate the preparation of the feeds for NG feeding.

Sublingual/ Buccal

4.1.8 Demonstrate the administration of the drugs through Sublingual and Buccal route.
4.1.9 Present the instructions for administering the same and how to terminate the action of the drug.
4.1.10 Present the different examples with dosage forms for the same.

Transrectal

4.1.11 Identify the devices used to administer dosage forms through transrectal route.
4.1.12 Present the instructions to the patient before administering dosage forms through transcutaneous route.
4.1.13 Demonstrate the administration of suppositories by rectal route.
4.1.14 Demonstrate the administration of enema (Evacuant/ Retention) by rectal route.

Transvaginal

4.1.15 Identify the devices used to administer dosage forms through transvaginal route.
4.1.16 Present the instructions to the patient before administering dosage forms through transvaginal route.
4.1.17 Demonstrate the administration of pessary, creams and foams by vaginal route.
4.1.18 Demonstrate the administration of douche by vaginal route.
4.1.19 Identify different types of Intrauterine contraception
4.1.20 Present the instructions/counseling to the patients on intrauterine contraception.
4.1.21 Demonstrate the placement of intrauterine contraception using the stimulation setting

Parenteral

Intra Muscular injection

4.1.22 Identify the devices required for IM injection
4.1.23 Demonstrate the prerequisite preparations for injection along with aseptic precautions.
4.1.24 Present instructions to the patient about the injection procedure.
4.1.25 Identify the sites of IM injection on mannequin and present merits and demerits of each site.
4.1.26 Demonstrate the proper technique for IM injection.

Intravenous injection

4.1.27 Identify the devices required for IV injection
4.1.28 Demonstrate the prerequisite preparations for injection along with aseptic precautions
4.1.29 Present instructions to the patient about the injection procedure.
4.1.30 Identify the sites of IV injection on mannequin
4.1.31 Demonstrate the proper technique for IV injection.

Subcutaneous injection

4.1.32 Identify the devices required for SC injection.
4.1.33 Demonstrate the prerequisite preparations for injection along with aseptic precautions.
4.1.34 Present instructions to the patient about the injection procedure.
4.1.35 Identify the sites of SC injection on mannequin.
4.1.36 Demonstrate the proper technique for SC injection.

Intradermal injection

4.1.37 Identify the devices required for Intradermal injection.
4.1.38 Demonstrate the prerequisite preparations for injection along with aseptic precautions.
4.1.39 Present instructions to the patient about the injection procedure.
4.1.40 Demonstrate the proper technique for Intradermal injection.

Intracardiac injection

4.1.41 Demonstrate a proper technique for Intracardiac injection.
4.1.42 Demonstrate the prerequisite preparations for injection along with aseptic precautions.

Local/ Topical application

Transcutaneous – Iontophoresis, Inunction, Jet Injection, Transdermal delivery system

4.1.43 Identify the devices used to administer dosage forms through transcutaneous route.
4.1.44 Present the instructions to the patient before administering dosage forms through transcutaneous route.
4.1.45 Demonstrate the administration of dosage forms by Iontophoresis method.
4.1.46 Demonstrate the administration of dosage forms by Inunction method.
4.1.47 Demonstrate the administration of dosage forms by Jet Injection method.
4.1.48 Demonstrate the administration of Transdermal patches.

Transmucosal/ Inhalational

4.1.49 Document the inhalational devices used to administer inhalational dosage forms.
4.1.50 Present the merits and demerits of inhalational devices over one another
4.1.51 Present the instructions to the patient before using inhalational devices.
4.1.52 Demonstrate the administration of inhalational dosage forms.
4.1.53 Identify the different types of airway masks and intubation tubes.
Present a method for selection of intubation tubes.
Demonstrate the administration of anesthetic/ therapeutic gases through airway masks and intubation tubes
4.1.54 Transnasal
4.1.55 Identify dosage forms administered transnasally.
4.1.56 Identify the devices used for administering dosage forms transnasally.
4.1.57 Present the merits and demerits of Transnasal route of drug administration.
4.1.58 Present the instructions to the patient before administering dosage forms by transnasal route.

Ophthalmic/ Ear route

4.1.59 Identify dosage forms administered by ophthalmic/ ear route.
4.1.60 Present the instructions to the patient before administering dosage forms by ophthalmic/ ear route.

Skill Lab – 6 Hours
Assessment: Skill Assessment

PH 4.2 Demonstrate the effects of drugs on blood pressure (vasopressor and vasodepressors with appropriate blockers) using computer aided learning

4.2.1 Choose the appropriate animal experiment to study the effects of drugs on blood pressure
4.2.2 Explain the differences in actions of different vasopressor (adrenaline, noradrenaline)
4.2.3 Explain the differences in actions of different vasodepressors (ACh, alpha blockers, histamine)
4.2.4 Analyse and interpret the graph obtained accurately on application of various drugs
4.2.5 Enumerate the therapeutic uses of vasopressors and vasodepressors

☐ **SGD – 2 Hours** **Assessment: Skill Assessment**

PH 5.1 Communicate with the patient with empathy and ethics on all aspects of drug use (integration with General medicine)

5.1.1 Describe what information should be given to patients to allow them to make informed decisions
5.1.2 Communicate treatment plan and instructions to patient, at a suitable level of information
5.1.3 Engage in shared decision making where appropriate

☐ _____ SGD – 4 Hours

☐ Assessment: Skill Assessment

PH 5.2 Communicate with the patient regarding optimal use of

Drug therapy
Devices
Storage

Drug Therapy

5.2.1 Communicate about the effects of the prescribed drug with regards to the following:
i. Why the drug is needed
Which symptoms will disappear, and which will not?
When the effect is expected to start
What will happen if the drug is taken incorrectly or not at ll

5.2.2 Communicate about the adverse effects of the prescribed drug with regards to the following:
i. Which side effects may occur?
How to recognize them
How long they will continue
How serious they are
What action to take

5.2.3 Communicate about the instructions of drug use as following:
i. How the drug should be taken
When it should be taken
How long the treatment should continue
How the drug should be stored
What to do with left-over drugs

5.2.4 Communicate about the warnings of the prescribed drug with regards to the following:

i. When the drug should not be taken
What is the maximum dose?
Why the full treatment course should be taken?

5.2.5 Communicate about the future consultations with regards to the following:

i. When to come back (or not)
In what circumstances to come earlier
What information the doctor will need at the next appointment

5.2.6 Conclude the consultation by asking the following questions:

Ask the patient whether everything is understood
Ask the patient to repeat the most important information

Devices

5.2.7 The student should be able to communicate to patients on

i. Step wise points or instructions on use of device
Communicate list of do's and don'ts on the device
Demonstrate the proper use of device and ask the patient to show the same.
Methods on handling, cleaning and storage of device
Dangers of use of device on other persons, without the prescription of doctor
Importance of keeping the device away from reach of the children
Contact number of manufacturers to be communicated on trouble shooting

Storage of Medicines

5.2.8 The student should be able to communicate to patients on

i. Ideal storage condition of a pharmaceutical product as per product label
Ideal storage condition of a pharmaceutical product as per product label
Effect of storage condition on potency and efficacy of the drug ill effects of improper storage condition on human consumption. Factors to be taken in to consideration for drug storage like sanitation, temperature, light, moisture, ventilation and segregation.
iv. Importance of storage of medicines away from reach of the children
v. Disposal of expired drugs

SGD – 4 Hours Assessment: Skill Assessment/ Short note

PH 5.3 Motivate patients with chronic diseases to adhere to the prescribed management by health care provider

5.3.1 Explain the term medication adherence
5.3.2 Explain the consequences of non-adherence in chronic diseases
5.3.3 Explain the methods to measure the medication adherence
5.3.4 Elicit the barriers affecting medication adherence
5.3.5 Explains the measures to be taken to motivate the patient to adhere to medications in chronic diseases

SGD – 2 Hours Assessment: Shortnote/ Viva Voce

PH 5.4 Explain to the patient the relationship between cost of treatment and patient compliance

5.4.1 Assess the cost of the treatment

1.

5.4.2 Enumerate various factors influencing patient compliance (patient related, disease condition related, therapy related and health system related factors).
5.4.3 Explain the consequences of medication non-compliance in terms of cost to the patient
5.4.4 Communicate clearly to the patient about relationship between cost of treatment and compliance

SGD – 4 Hours
Assessment: Short Note, Viva voce

PH 5.5 Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management (integrate with Psychiatry)

5.5.1 Describe the term drug dependence
5.5.2 Enumerate the drugs that produce dependence
5.5.3 Describe the Legality involved in prescribing drugs likely to produce dependence (Drugs and Cosmetics Act, 1940; Pharmacy Act, 1948; Narcotic Drugs and Psychotropic substances Act, 1985)
5.5.4 Describe the clinical including psychosocial assessment of the patient before prescribing
5.5.5 Describe the importance of documentation of prescribing process
5.5.6 Describe the importance of periodic review of prescriptions
5.5.7 7. Describe the basic treatment regimens for various addictions and withdrawal states along with psycho-social rehabilitation

SGD – 4 hrs (Practical)
Assessment: Short notice, Viva voce

PH 5.6- Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs (integrate with Psychiatry)

5.6.1 The importance of complying with the doctor's instructions
5.6.2 The demerits of self-prescription
5.6.3 The importance of identifying and reporting ADRs to concerned authorities
5.6.4 Caution be taken while using drugs causing dependence
5.6.5 Safe use of OTC

SGD – 2 Hours
Assessment: Short notice, Viva voce

PH 5.7 Demonstrate an understanding of the legal and ethical aspects of prescribing drugs (integrate with Forensic Medicine)

Legal aspects

5.7.1 Explain who is entitled to prescribe medicines and the legal requirements involved
5.7.2 Describe the legal requirements associated with prescribing controlled drugs
5.7.3 Describe the legal implications of irrational prescription that could endanger the life of patients

Ethical aspects

5.7.4 Describe the importance of rational prescription
5.7.5 Explain the responsibilities of prescribing in a resource limited setting
5.7.6 Describe what information should be given to patients to allow them to make informed decisions
5.7.7 Explain why it is important to recognize limits of competence and to ask for help when needed
5.7.8 Explain the responsibility of all prescribers to update knowledge
5.7.9 Describe the importance of following clinical guidelines, protocols and formularies are appropriate

PANDEMIC MODULE 2.5

Therapeutic strategies including new drug development

 SGD – 2 Hours Assessment: Short notice, Viva voce

PH 5.8 Demonstrate the use of drugs during a pandemic. (Integrate with General Medicine)

 Prepare a plan for evaluation of off-label use of a drug – repurposing
 Emergency use authorization – Compliance with regulatory
 CDSCO/DCGI and US FDA
 authorities Pharmacovigilance during a pandemic
 Ethical aspects of clinical trials in pandemic
 Visit to a pharmaceutical firm/ pharmacy lab to show various stages of drug development or an
ADR monitoring exercise in clinical wards

Assessment in Pharmacology

Summative Assessment - An assessment conducted at the end of instruction to check how much the student has learnt.

Formative Assessment - An assessment conducted during the instruction with primary purpose of providing feedback for improving learning.

Internal Assessment - Range of assessments conducted by the teachers teaching a particular subject with the purpose of knowing what is learnt. Internal assessment can have both formative and summative functions.

Note - Assessment requires specification of measurable and observable entities. This could be in the form of whole tasks that contribute to one or more competencies or assessment of a competency per se. Another approach is to break down the individual competency into learning objectives related to the domains of knowledge, skills, attitudes, communication etc. and then assess them individually.

Scheduling of Internal Assessment - Done once in three months preferably at the end of each block.

Theory IA can include: Written tests should have essay questions, short notes and creative writing experiences.

Practical IA can include: Practical tests, Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), records maintenance and attitudinal assessment.

Assessment of Log-book- Log book should record all activities like seminar, symposia, quizzes and other academic activities. It should be assessed regularly and submitted to the department. Up to ten (10) per cent IA Practical marks should be for Log book assessment.

Assessment of Practical Record book- Practical book should record all skills and other practical exercises done during the academic programme. It should be assessed regularly and submitted to the department. Up to ten (10) per cent IA Practical marks should be for Practical record book assessment0

Assessment for AETCOM will include: - Written tests comprising of short notes and creative writing experiences only in internal assessment.

SCHEME OF EXAMINATION

INTERNAL ASSESSMENT:

General guidelines

Regular periodic examinations shall be conducted throughout the course. There shall be **minimum three internal assessment examinations** in each Para-clinical subject and no less than two examinations in each clinical subject in a professional year.

The **third internal examination** should be conducted on the lines of the university examination.

When subjects are taught in more than one phase, the internal assessment must be done in each phase and must contribute proportionately to final assessment.

An **average of the marks scored in the three internal assessment examinations** will be considered as the final internal assessment marks.

Learners **must secure not less than 40 % marks in theory and practical separately and not less than 50% marks of the total marks (combined in theory and practical)** assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.

A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial measures by the institution. If he/she successfully completes the remediation measures, he/she is eligible to appear for University Examination. Remedial measures shall be completed before submitting the internal assessment marks online to the university.

Internal assessment marks will reflect under separate head in the marks card of the university examination. The internal assessment marks (theory/practical) will not be added to the marks secured (theory/practical) in the university examination for consideration of pass criteria.

The results of IA should be displayed on the notice board within a 1-2 week of the test.

Learners must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

6. UNIVERSITY EXAMINATION

General guidelines

University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him/her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

Nature of questions will include different types such as structured essays (Long Answer Questions - LAQ), Short Essays and Multiple choice Questions (MCQ). Marks for each part should be indicated separately.

The learner **must secure at least 40% marks in each of the two papers with minimum 50% of marks in aggregate (both papers together) to pass.**

Practical/clinical examinations will be conducted in the laboratories. The objective will be to assess proficiency and skills to conduct experiments, clinical examination, interpret data and form logical conclusion, wherever applicable.

There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.

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

A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial attendance at any University examination shall be counted as an availed attempt.

SECOND PROFESSIONAL EXAMINATION:

The second professional examination shall be held at the end of second professional training (11 months), in the.

Phase II

Table: Examination components and Distribution of Marks

THEORY	PHARMACOLOGY
Written Paper	
No. of Papers & Maximum Marks for each paper.	**2×100=200**
Total theory	**200**
PRACTICAL	
1. Practical exam	**80**
2. Viva-voce	**20**
Total practical	**100**
	Internal assessment*
Internal Assessment (Theory)	**50**
Internal assessment (Practical)	**50**

Internal assessment marks will reflect under separate head in the marks card of the university examination.

Type, number of questions and distribution of marks for written paper

TYPES OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
Long essay	**2**	**10**
Short essay	**12**	**5**
MCQ	**20**	**1**

SUMMATIVE ASSESSMENT/ UNIVERSITY EXAM

THEORY

GENERAL INSTRUCTIONS

The topics for the two papers are distributed

Questions in each paper will be as per distribution

The SLO needs to be referred while setting the question paper

Repetition of questions from the same SLO to be avoided

The marks allotted to the different topics & sections to be adhered

Questions to be covered from the different sections of Pharmacology

THEORY EXAMINATION-2 PAPERS OF 100 MARKS EACH
Distribution of marks:

Sl no. *T*	*ype of questions*	*Marks per questio n*	*Number of question s*	*Total marks*
1	**Long Essay (LE)**	**15**	**2**	**30**
2	**Short Essay (SE)**	**5**	**10**	**50**
3	**Multiple Choice Questions(MCQ)**	**1**	**20**	**20**

Long essay

The question should pose a clinical/practical problem to the students and require them to apply knowledge and integrate it with disciplines. Avoid giving one liners as questions. The question stem should be structured and marking distribution should be provided. Use action verbs from higher domains as given in this document. Please avoid simple recall based questions. What is asked in the examination generally sets the agenda of what and how the students learn.

Multiple choice questions: These provide opportunity to sample a wider content, albeit in a short time. The questions should be task oriented and based on applied aspect

SUMMATIVE ASSESSMENT/ UNIVERSITY EXAM

PRACTICALS

Total Marks – 100 (Practical: 80 + Viva voce: 20)

Sl. No.	Competency	Topics	Teaching hours	For university exams	Max. marks in exams
1	PH 2.1	Dosage forms	14 hours	TABLE VIVA	10 marks
2	PH 2.2	ORS	4 hours	Correction only	10 marks
3	PH 2.3	I.V Drip	4 hours	DEMO only	
4	PH 2.4	Drug Dose Calculation	4 hours	Correction only	10marks
5	PH 3.1	Prescription Writing	6 hours	Correction only	10 marks
6	PH 3.2	Prescription Audit / CCR	6 hours	LOG BOOK	
7	PH 3.3	Drug Promotional Literature(DPL)	6 hours	TABLE VIVA with 2.2	Alternate with ORS for 10 marks
8	PH 3.4	ADR	4 hours	TABLE VIVA	10 marks
9	PH 3.5	P Drugs	6hours	LOG BOOK	
10	PH 3.6	Interaction with Pharma Representative	2 hours	Role play, LOG BOOK	
11	PH 3.7	Essential Medicines	4 hours	LOG BOOK	
12	PH 3.8	Drug Counseling	4 hours	TABLE VIVA	10marks
13	PH 4.1	Routes in Manequins	10 hours	DEMO only	
14	PH 4.2	Computer Aided Learning CAL	6 hours	Correction / TABLE VIVA	10 marks
15	PH 5.1	Empathy, ethics	SGD 2 hours	TABLE VIVA with 3.8	10 marks
16	PH 5.2	Drug therapy storage	SGD 4 hours	TABLE VIVA with 3.8	10 marks
17	PH 5.3	Adherence	SGD 4 hours	Short note-theory	
18	PH 5.4	Cost & compliance	SGD 2 hours	Short note-theory	
19	PH 5.5	Dependence	SGD 4 hours	Short note-theory	

20	PH 5.6	OTC	SGD 4 hours	TABLE VIVA Along with 3.4	10 marks
21	PH 5.7	Legal, ethical aspects	SGD 2 hours	Short note-theory	
22		Total hours	Practical 80 hours + SGD 22 hours		

SUBMISSION OF LABORATORY RECORD

At the time of Practical Examination each candidate shall submit to the Examiners his/her laboratory record duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

ELIGIBILITY TO APPEAR FOR EXAMINATION

The following criteria to be met by the students to be eligible for the university exams:

Shall have undergone satisfactorily the approved course of study in the subject/subjects for the prescribed duration.

Shall have attended not less than 75% of the total classes conducted in theory and not less than 80% of the total classes conducted in practical separately to become eligible to appear for examination in that subject/subjects.

Minimum of 40% marks to be obtained **separately** in theory and practical AND atleast 50% marks of the total marks **combined** in theory and practical assigned for internal assessment is to be obtained in a particular subject to appear for university exam. (average of 3 internal assessments theory and practical separately)

Learners must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

CRITERIA FOR PASS

For declaration of pass in any subject in the University examination, a candidate shall pass both in Theory and Practical examination components separately as stipulated below:

The Theory component consists of marks obtained in University Written papers only. For a pass in theory, a candidate must secure at least 40% marks in each of the two papers with minimum 50% of marks in aggregate (both papers together).

For a pass in practical examination, a candidate shall secure not less than 50% marks in aggregate, i.e., marks obtained in university practical examination and viva voce added together.

Internal assessment marks will reflect as a separate head of passing at the university examination.

A candidate not securing 50% marks in aggregate in Theory or Practical examination + viva in a subject shall be declared to have failed in that subject and is required to appear for both Theory and Practical again in the subsequent examination in that subject.

DECLARATION OF CLASS

A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of **grand total marks (university examination + internal assessment)** prescribed will be declared to have passed the examination with distinction.

A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of **grand total marks (university examination + internal assessment)** prescribed will be declared to have passed the examination in First Class.

A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of **grand total marks (university examination + internal assessment)** prescribed will be declared to have passed the examination in Pass Class.

A candidate passing a university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by him/her in the examination.

Note: Please note fraction of marks will not be rounded off for clauses (a), (b) and (c)

EXPLANATION OF TERMS USED IN THE MANUAL

LECTURE

Any instructional large group method including traditional lecture and interactive lecture.

SMALL GROUP DISCUSSION

Any instructional method involving small groups of students in an appropriate learning context.

DOAP (Demonstration- Observation - Assistance - Performance)

A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently.

SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for

learning, choosing and implementing appropriate learning methods.

SKILL ASSESSMENT

A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands.

CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know

SUGGESTED GUIDELINES FOR THE TEACHING AND LEARNING METHODS

LECTURE: Suggested topics for didactic and interactive lectures have been included along with specific learning objectives linked to each competency. Lectures should cover the core competencies with appropriate pictures, charts or diagrams.

SMALL GROUP DISCUSSION: Topics for small group discussion have suggested. These topics included are those where more intensive and interactive learning sessions are required.

SELF DIRECTED LEARNING: Non-core competencies are suggested to be taken as topics for self-directed learning. At the end of the session, the teacher moderates the discussion and the learning is recorded in the log book.

DOAP (Demonstration- Observation - Assistance - Performance)

Practicals are in the form of Demonstration- Observation – Assistance - Performance)

All sessions will have specific learning objectives which are linked to the relevant competencies and are assessed as described in the

Assessment module.

All sessions will be done with the faculty as facilitator.

The students will be encouraged to observe the demonstrations and perform the requisite skills either independently or with assistance as required.

Emphasis will be on acquiring clinically relevant skills. Thus, case-based learning and discussions will be encouraged.

TOPICS FOR HORIZONTAL INTEGRATION

(PENDING APPROVAL –Prof Dr ABHIJITH CHOWDHARY, I/C-Integrated teaching)

Minimum two of the suggested topics should be covered in each block.

BLOCK I

1. IMMUNOLOGY
2. ANAEMIA & ANTICOAGULANTS
3. ESSENTIAL MEDICINES
4. SHOCK TOXICOLOGY
5. DRUGS OF ABUSE
6. ANTIBIOTIC STEWARDSHIP PROGRAM

BLOCK II

1. ISCHEMIC HEART DISEASE
2. CHF
3. BR. ASTHMA
4. COPD
5. PEPTIC ULCER DISEASE
6. IBD &IBS
7. TUBERCULOSIS & LEPROSY
8. AIDS
9. MALARIA

FULL DAY INTEGRATION SESSIONS (IF FEASIBLE)

National days of importance for

1. AIDS,
2. Leprosy,
3. Tuberculosis,
4. Malaria,
5. Mental health,
6. Breast feeding promotion.

TOPICS FOR VERTICAL INTEGRATION

	COMPETENCY	
Number	**The student should be able to**	**Vertical Integration**
PH 1.15	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants	Anesthesiology, Physiology
PH 1.16	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: anti-histaminic, 5-HT modulating drugs, NSAIDs, drugs for gout, anti-rheumatic drugs, drugs for migraine	General Medicine
PH 1.17	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anesthetics	Anesthesiology
PH1.18	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and pre- anesthetic medications	Anesthesiology
PH1.19	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, anti-psychotic, anti- depressant drugs, anti-maniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs)	Psychiatry, Physiology
PH1.20	Describe the effects of acute and chronic ethanol intake	Psychiatry
PH1.21	Describe the symptoms and management of methanol and ethanol poisonings	General Medicine
PH1.22	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)	Psychiatry
PH1.23	Describe the process and mechanism of drug deaddiction	Psychiatry
PH1.25	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders	Physiology, General Medicine

PH1.26	Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin- angiotensin and aldosterone system	Physiology, General Medicine
PH1.27	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock	General Medicine
PH1.28	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease	General Medicine
PH1.29	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure	General Medicine
PH1.30	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the antiarrhythmics	General Medicine
PH1.31	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemias	General Medicine
PH1.32	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD	Respiratory Medicine

PH1.33	Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussives, expectorants/ mucolytics)	Respiratory Medicine
PH1.34	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below: 1. Acid-peptic disease and GERD 2. Antiemetics and prokinetics 3. Antidiarrhoeals 4. Laxatives 5. Inflammatory Bowel Disease 6. Irritable Bowel Disorders, biliary and pancreatic diseases	General Medicine
PH1.35	Drugs used in anemias	General Medicine, Physiology
	2. Colony Stimulating factors	
PH1.36	Describe the mechanism of action, types, doses, side effects, indications and contraindications of drugs used in endocrine disorders (diabetes mellitus, thyroid disorders and osteoporosis)	General Medicine
PH1.39	Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception	Obstetrics & Gynaecolo
PH1.40	Describe mechanism of action, types, doses, side effects, indications and contraindications of 1. Drugs used in the treatment of infertility, and 2. Drugs used in erectile dysfunction	Obstetrics & Gynaecology
PH1.41	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants	Obstetrics & Gynaecology
PH1.43	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	General Medicine, Pediatrics
PH1.44	Describe the first line antitubercular dugs, their mechanisms of action, side effects and doses.	Respiratory Medicine
PH1.45	Describe the drugs used in MDR and XDR Tuberculosis	Respiratory Medicine
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	Dermatology, Venereology
PH1.47	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA- AZAR, amebiasis and intestinal helminthiasis	General Medicine
PH1.47	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA- AZAR, amebiasis and intestinal helminthiasis	General Medicine
PH1.52	Describe management of common poisoning, insecticides, common sting and bites	General Medicine
PH1.56	Describe basic aspects of Geriatric and Pediatric pharmacology	Paediatrics
PH1.57	Describe drugs used in skin disorders	Dermatology, Venereology & Leprosy
PH1.58	Describe drugs used in Ocular disorders	Ophthalmology

PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations	Pediatrics, General Medicine
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient	General Medicine
PH3.3	Perform a critical evaluation of the drug promotional literature	General Medicine
PH3.5	To prepare and explain a list of P-drugs for a given case/condition	General Medicine
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use	General Medicine
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance	General Medicine
PH5.5	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management	Psychiatry
PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs	Psychiatry

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

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

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

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

Annexure

MODEL QUESTION PAPERS

QP Code - Paper I

Answer All Questions. Draw diagrams wherever necessary

Time 3 hours **Maximum 100 Marks**

I. MCQ 1 x 20 =20 Marks

1. In patient with nephritic syndrome and hypoalbuminemia, protein binding of which drug will not be affected:
a) Tolbutamide
b) Morphine
c) Diazepam
d) Valproate

2. A 70 Kg man was given a drug in a dose of 100mg/kg body weight . Its $t_{½}$ is 10 hours, initial plasma concentration is 1.9 mg/ml. True statement is:
a) CL is 0.02 litre/hr
b) CL is 20 litre/hr
c) k is 6.93
d) CL is 0.2litre/hr

3. New born baby was born with phocomelia. It results due to which drug taken by mother during pregnancy?
a) Tetracycline
b) Thalidomide
c)Warfarin
d) Alcohol

4. what is the probable diagnosis in a patient with a dilated pupil not responsive to 1%pilocarpine?
a) Diabetic 3rd nerve palsy
b) Adie's tonic pupil
c)Uncal herniation
d)Pharmacological block

5.Which of the following drugs should not be given in a patient with acute angle closure glaucoma:
a)Pilocarpine
b)Clozapine
c)Fluphenazine
d)Paroxetine

6. A Patient presented in emergency with tachycardia, hyperthermia, bronchial dilatation and constipation. The person is likely to be suffering from over dose of:
A) Atropine
b) Organophosphorus compound
c) Mushroom
d) Paracetamol

7. A highway trunk driver has profuse rhinorrhoea and sneezing. Which amongst the following drugs would you prescribe him?
a) Pheniramine

b) Promethazine
c) Dimenhydrinate
d) Cetirizine

8. A20 yr old female weighing 55kg is admitted to the emergency department having consumed 10g of paracetamol together with alcohol 6 hrs earlier. A serum paracetamol level is reported as 400 micrograms/ml. Which of the following is correct with respect to this?
a) Gastric lavage is mandatory
b) Administration of active charcoal
c) Abnormalities of the kidney function are likely to be present
d) Hepatotoxicity is likely to occur

09. Use of Asprin in children with viral diseases is associated with
a) Metabolic acidosis
b) Reye's syndrome
c) Renal tubular acidosis
d) Fixed drug eruption

10. A 60Y old hypertensive patient on angiotensin II receptor antagonist(losartan) is posted for hernia repair surgery. The antihypertensive drug should be:
a) Continued till the day of operation
b) Discontinued 24hrs preoperatively
c) Discontinued one week preoperatively
d) Administrated in an increased dosage on the day of operation

11. An elderly hypertensive has diabetes mellitus and bilateral renal artery stenosis. The best management is:
a) Enalapril
b) Verapamil
c) Beta blockers
d) Thiazides

12.A 30 year old male presents with severe chest pain, breathlessness, hypotension and ECGshows ST elevation in V3,V4,V5 andV6 LEADS. He will be best treated with:
a) Streptokinase
b)t-PA
c) Heparin
d) PTCA

13. Sudden withdrawal of which of the following drugs could result in serious adverse cardiovascular changes in a patient taking the drug over long time:
a) Phenelezine (MAO inhibitor)
b) Enalapril(AC Inhibitor)
c) Clonidine(α_2 agonist)
d) Fluoxetine (serotonin reuptake inhibitor)

14. In a patient on cisplatin therapy, which of the following diuretics would be preferred?
a) Mannitol
b) Acetazolamide
c) Thiazide
d) Furosemide

15.All of the following benzodiazepines can be used in elderly and those with liver diseases

EXCEPT:
A)Lorazepam
b) Oxazepam
c)Trizolam
d) Diazepam

16.A patient of parkinsonism is managed with levodopa. If Vitamin B complex is administered concurrently to the patient:
a) The action of levodopa in brain will be potentiated
b) Decarboxylation of l-dopa in brain will be decreased
c) Side effects will be ameliorated
d) Decreased efficacy will result

17. A. 65 years old male presented to a hospital with focal seizures. His renal function was normal. Which of the following is the drug of choice for this patient?
a)Valproate
b) Pregabalin
c) Levetiracetam
d) Oxcarbazepine

18. A person taking tricyclic antidepressants presents with blurred vision and dry mouth. These adverse effects result due to blocked of:
a) M_3 muscarinic receptors
b) $GABA_A$receptors
c) H_1 histamine receptors
d) $5HT_2$ receptors

19.A 70 kg young athlete was planned for surgery. During anaesthesia, Vecuronium was not available, so repeated doses of succinyl choline was given intermittently up to 640mg. During recovery, patient was not able to spontaneously respire and move limbs. What is the cause?
a) Pseudocholinesterase deficiency
b) Phase II blockade
c) Muscle weakness due to repeated fasciculations.
d) Undiagnosed muscular dystrophy

20.Which of the following drugs are believed to be effective in the treatment of post operative shivering?
a) Ondansetron
b) Diclofenac sodium
c) Pethidine
d) Paracetamol

II Long Essay (2X15 Marks = 30 Marks)

1. A 30 year old lady was brought to the Neurology OPD with history of three episodes of fits in the last 10 days. She gave a history of head injury six month back following a car accident. Neurological examination revealed no abnormality. Awake EEG of the patient and the MRI scan of the brain were normal. Based on the typical description of the fit, the neurologist made a diagnosis of Generalized Tonic Clonic Seizures (GTCS) and antiepileptic medications were started.

1.1 Which are the antiepileptic drugs appropriate for this patient? [1 Marks]

1.2 Explain the mechanism of action of any one of them [4 Marks]
1.3 Discuss its adverse effects? [2 Marks]
1.4 What are the advantages of newer antiepileptic drugs compared to the conventional drugs in this patient? [3 Marks]
2.1 Enlist different types of receptors with examples of drugs acting through them [2+2 marks]
2.2 Describe the factors modifying drug action and their clinical significance [3+3 Marks]

Short Essays [10X5 Marks=50 Marks]

1.1 What is bioavailability? Explain the clinical significance. [3+2 marks]
1.2 Compare and contrast Nitrous oxide and halothane [2.5+2.5 marks]
1.3 Discuss the treatment of organophosphorus (OP) poisoning with rationale [2+3]
1.4 Describe the therapeutic uses and adverse effects of beta blockers[2.5+2.5 marks]
1.5 A 30-year-old man presented with progressive worsening of shortness of breath. He was exposed to dust while cleaning his office room and gave past history of severe asthma and multiple hospitalizations. His peak flow rates are decreased by nearly 50% from baseline and was diagnosed with acute severe asthma.
1.6 Discuss the pharmacological management of this patient [3 Marks]
1.7 Which are the drugs used in combination therapy and give the rationale[2 marks]
1.8 Discuss the pharmacological management of a patient with *Helicobacter pylori* infection [5 Marks]
1.9 Rationale for the use of succinylcholine during intubation and discuss its adverse effects [2+3 Marks]
1.10 Describe the uses and adverse effects of Aspirin [3+2 Marks]
1.11 Why is allopurinol used in chronic gout? What are it adverse effects [3+ 2Marks]
1.12 Discuss the uses and adverse effects of metoclopramide [3+2 Marks]

Annexure

MODEL QUESTION PAPERS

QP Code - Paper II

Answer All Questions. Draw diagrams wherever necessary

Time 3 hours **Maximum 100 Marks**

I. MCQ 1 x 20 =20 Marks

01. A 22 years old female, Neetha presented to you with complaints of headache and vomiting since 2 months. She is having amenorrhea but urine pregnancy test is negative. She is also complained of secretion of milk from the breasts. A provisional diagnosis of hyper prolactinemia was made and MRI was suggested. MRI confirmed the presence of a large pituitary adenoma. Neetha was advised surgery, however,she is not willing to undergo surgery. Which of the following medication is most likely to be prescribed
a) Sumatriptan
b) Bromocrptine
c) Ergotamine
d) Allopurinol

02. A pregnant female is taking carbimazole. Which of the following is not seen in the neonate?
a) Choanal atresia
b) Scalp defects
c) Cleft lip/ palate
d) Fetalgoiter

03. A patient is receiving insulin and acarbose for diabetes mellitus and developed hypoglycaemia. Which of the following should be used for treatment of hypoglycaemia in this patients?
a) Sucrose
b) Galactose
c) Glucose
d) Starch

04. Prevention are treatment of Osteoporosis in post menopausal women maybe achieved by all EXPECT:
a) Estrogen and Progesterne hormones replacement therapy
b) Calcium and Vitamin D supplementation
c) Bisphosphonates
d) Multivitamins

05. A patient has sub clinical folate deficiency. All of the following drugs can be prescribed megaloblastic anemia in this patient EXPECT:
a) Alchohol
b) Phenytoin
c) Chloroquine
d) Sulfasalzine

06. A diabetic female of INH and rifampicin for TB developed DVT. She was started of warfarin, PT is not raised and next step should be:
a) Increase the dose of warfarin
b) Replace warfarin acenocoumarin
c) Switch ithambutol for rafampicin
d) Use LMW heparin

07. A substance has molecular weight 30,000. It exerts oncotic pressure similar to be albumin and is non-antigenic. It does not interfere with blood grouping and cross-matching. It is :
a) Dextran 40
b) Dextran 70
c) Polygeline
d) Hetastarch

08. In theophylline metabolism, drug interactions occurs with all EXCEPT:
a) Cimetidine
b) Phenobarbitone
c) Rifamine
d) Tetracyclines

09. A patient of peptic ulcer was prescribed ranitidine and sucralfate in the morning hours. Why is this combination incorrect?
a) Ranitidine combined with sucralfate and prevents its action
b) Combination of these two drugs produces serious side effects like agranulocytosis

c) Ranitidine increases the gastric pH so sucralfate is not able to act.
d) Sucralfate inhibits the absorption of ranitidine

10. Anti-peptic ulcer drug that can be given in patients with chronic renal failure (CRF)
a) Aluminium Hydroxide
b) Magnesium Hydroxide
c) Sucralfate
d) None

11. Which of the following drugs combination show antimicrobial synergism?
a) Penicillin + Streptomycin in SABE
b) Ampicillin + Tetracycline in endocarditis
c) Sulfamethoxazole + Trimethoprim in UTI
d) Amphotericin B + Flucytosine in cryptococcal meningitis

12. A drug of choice for chlamydial infection in pregnancy is:
a)Doxycycline
b)Tetracycline
c) Erythromycin
d) Ciprofloxacin

13.A diabetic patient develops cellulitis due to staphylococcus aureus that was found to be methicillin resistant on the antibiotic sensitivity testing. All of the following antibiotics will be appropriate EXCEPT:
a) Vancomycin
b) Imipenem
c) Teicoplanin
d) Linezolid

14. A middle aged man with chronic renal failure is diagnosed to have sputum-positive pulmonary tuberculosis. His creatinine clearance is 25 ml/min. All of the following drugs need modification in doses EXCEPT:
a) Isoniazid
b) Streptomycin
c) Rifampicin
d) Ethambutol

15. Bone marrow depressive drugs in the treatment of Aids patient are :
a) Didanosine
b) Zalcitabine
c) Zidovudine
d) Cotrimoxazole
e) Ganciclovir

16. Which of the following parameters is not monitoring in a patient on methotrexate therapy?
a) Liver function test
b) Lung function test
c) Eye examination
d) Hemogram

17. A pregnant women of > 35 weeks gestation has SLE. All of the following drugs in treatment EXCEPT:
a) Methotrexate
b) Sulfasalazine
c) Prednisolone
d) Chloroquine

18. Fully humanized antibodies used in treatment of rheumatoid arthritis?
a) Anakinra
b) Adalimumab
c) Infliximab
d) Leflunomide

19. A 56 years old female presented with breast carcinoma and she was prescribed herceptin (transtuzumab). Which of the following statements regarding this drug is true?

a) It is an antibody produced entirely from mouse containing no human component
b) It is a monoclonal antibody produced by injecting HER-2 antigen
c) It is a polyclonal antibody
d) It is a monoclonal antibody containing only human component

20. A patient of multidrug resistant tuberculosis is on antitubercular drugs, After a few months he develops an inability to distinguish between red and green color. Most likely drug causing these symptoms is:
a) Rifampicin
b) Ethambutol
c) Cycloserine
d) Ethionamide

Long Essay (15 Marks X 2=30 marks)

1. A14-year-old boy presented with polyuria, polydipsia and weight loss of about 6 kg in last 3 months. His biochemical evaluation showed FBS 280mg/dl; PPBS 370mg/dl; HbA1c 10.4%. After assessment, his diagnosis was Type 1 Diabetes mellitus

1.1 Discuss the pharmacological management of this patient [5 marks]
1.2 What are the expected adverse effects of the medications? [3 marks]
1.3 Explain the precautions to be taken to prevent the adverse effects? [2 marks]
1.4 Enumerate the first line drugs used in the treatment of tuberculosis [2 Marks]
1.5 Discuss the mechanism of action and adverse effects of any one of them[2.5+ 2.5 Marks]
1.6 Explain the regimen for the treatment of Multi-Drug Resistant (MDR) tuberculosis [3 marks]

Short Essays [10 X5=50 Marks]

1.1.Describe the uses and adverse effects of Corticosteroids [2.5+2.5 marks]
1.2 Explain the mechanism of action and adverse effects of aminoglycosides [2.5 +2.5 marks]

1.3 Discuss the Mechanism of action, adverse effects and uses of Clomiphene Citrate [2+ 1+ 2 marks]
1.4 Explain the therapeutic uses and adverse effects of Zidovudine [3+2 marks]
1.5 Describe the mechanism of action and therapeutic use of Bisphosphonates [3+2 marks]
1.6 Describe the uses and adverse effects of Heparin [2+3]
1.7 Explain the mechanism of action and therapeutic uses of Angiotensin Converting Enzyme Inhibitors [2.5+2.5 marks]
1.8 What is role of calcium channel blockers in treatment hypertension? Discuss their adverse effects [3+2 marks]
1.9 A patient is being discharged from hospital after treatment of an otherwise uneventful acute myocardial infarction (MI). He is a known hypertensive and was found to have elevated LDL during this admission. His blood sugars are normal.
1.10 Describe in brief about 5 HT_3 antagonists and their uses? (3+2)
1.11 What is status asthmatics and its treatment (2+3)
1.12 Mechanism of action of Vancomycin, its uses and adverse effects (2+2+1)

PAPER 1

DISTRIBUTION OF MARKS FOR THE DIFFERENT TOPICS

Topics	Main Question	Short Notes	**MCQ**	**Marks**
General Pharmacology Toxicology Clinical Pharmacology and rational drug use	**1**	**Or 3**	**3**	**18**
Autonomic Nervous System	1	**Or 3**	**3**	**18**
Autacoids		**1**	**1**	**06**
Central Nervous System	**1**	**Or 3**	**3**	**18**
Drugs in anaesthetic practice	**0**	**1**	**1**	**06**
Diuretics	**0**	**1**	**1**	**06**
Drugs affecting blood and blood formation	**0**	**1**	**5**	**10**
Cardiovascular System	**1**	**Or 3**	**3**	**18**
		Total marks		**100**

PAPER II

DISTRIBUTION OF MARKS FOR THE DIFFERENT TOPICS II

Topics	Main Question	Short Notes	MCQ	**Marks**
Respiratory System	0	1	3	**8**
Gastrointestinal System	1	Or 2 (without essay)	5	**15**
Endocrine System	**1**	**2 or 5(without essay)**	**5**	**30**
Chemotherapy	**1(Mandatory)**	**4**	**5**	**40**
Miscellaneous	**0**	**1**	**2**	**07**
		Total		**100**

BOOKS

1. Recommended Books: (Latest editions are recommended)
   Basic references
2. KD Tripathi, Essentials of Medical Pharmacology, 8 th Edition.
3. Padmaja Udaykumar, Medical Pharmacology, 6 th (CBME) Edition
4. HL Sharma and KK Sharma, Principles of Pharmacology, 3 rd Edition.
5. RS Satoskar, Nirmala N Rege, Raakhi K Tripathi, S D
6. Bhandarkar. Pharmacology and Pharmacotherapeutics, 25thEdition.

Reference Books: (Latest editions -recommended)

1. Advanced references (may also include journals/ web/ other electronic sources).
2. Goodman & Gilman's -The Pharmacological Basis of Therapeutics, ed. Laurence L Brunton, Bruce
3. A. Chabner, Bjorn Knollman.13th Edition.
4. Lippincott Illustrated Reviews: Pharmacology ed. Karen Whalen
5. Bertram G. Katzung and Anthony J. Trevor, Basic and Clinical Pharmacology,14 th
6. David E Golan, Ehrin J Armstrong, April W Armstrong, Principles of Pharmacology
7. Indian Journal of Pharmacology
8. Indian journal of physiology and pharmacology.

Department of MICROBIOLOGY

TABLE OF CONTENTS

I. GOALS AND OBJECTIVES

GOAL

- The broad goal of the teaching of undergraduate students in Microbiology is to provide an understanding of the natural history of infectious disease in order to deal with the etiology, pathogenesis, laboratory diagnosis, treatment and control of infections in the community.

OBJECTIVES

1. Competencies: The undergraduate learner demonstrate:
    a. Understanding of role of microbial agents in health and disease
    b. Understanding of the immunological mechanisms in health and disease
    c. Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents
    d. Knowledge of the principles and application of infection control measures
    e. An understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases.

c) INTEGRATION

- The teaching should be aligned and integrated horizontally and vertically in organ systems with emphasis on host-microbe-environment interactions and their alterations in disease and clinical correlations so as to provide an overall understanding of the etiological agents, their laboratory diagnosis and prevention.

II. TERMS AND TEACHING GUIDELINES

1. LECTURE

Is a teaching learning method which includes traditional and interactive sessions involving a large group.

2. SMALL GROUP DISCUSSION

It is an instructional method involving small groups of students in an appropriate learning context.

3. DOAP (Demonstration- Observation - Assistance - Performance)

A practical session that allows the student to observe demonstration assists the performer, perform in a simulated environment, perform under supervision or perform independently.

4. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning , choosing and implementing appropriate learning methods.

5. SKILL ASSESSMENT

Is a session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know).

III. MINIMUM TEACHING HOURS

MCI No	Specific Learning Objective	Number of competencies	LECTURE	TUTORIAL /SGD	Practicals	SDL
MI1	General Microbiology and Immunity	11	16	8	15	3
MI2	CVS and Blood	7	9	9	5	1
MI3	Gastrointestinal and hepatobiliary system	8	10	4	5	0
MI4	Musculoskeletal system skin and soft tissue infections	3	10	3	5	2
MI5	Central Nervous System infections	3	6	7	3	1
MI6	Respiratory tract infections	3	6	9	7	1
MI7	Genitourinary & Sexually transmitted infections	3	5	2	4	1
MI8	Zoonotic diseases and miscellaneous	16	11	13	11	1
	TOTAL	**54**	**73**	**55**	**55**	**10**
	CBME Requirement		**70**	**110**		**10**

IV . LEARNING OBJECTIVES

- Learning objectives are derived as per the competency given in MCI CBME manual The following instructions may be followed
- Topics are numbed as per MCI like MI1, MI2, MI3… MI8
- Under each topic competency are numbered as per MCI MI1.1, MI1.2..... MI8.16
- Under each competency sub competencies are numbered as MI1.1.1.MI1.1.2……..
- The objectives mentioned are basic minimum to be covered under the curriculum. For students benefit covering the topic beyond the mentioned competencies is desirable

TOPIC: GENERAL BACTERIOLOGY & IMMUNOLOGY (MI1.1-1.11)

No of competencies – 11 **No of procedures requiring certification – 1**

MI1.1 Describe the different causative agents of Infectious diseases, the methods used in their detection, and discuss the role of microbes in health and disease

MI1.1.1 Introduction to Infectious diseases

- Define: Health, Disease, infectious agents, commensalism, parasite, pathogen and opportunistic pathogen.
- Classify types of infections, Describe chain of infection
- Enumerate various types of medically important micro-organisms - bacteria, viruses, parasites, fungi
- Differentiate between pathogen, commensals, and saprophyte.

MI1.1.2 Isolation & identification of bacteria

MI1.1.2.1 Describe the classification & morphology of bacteria.

MI1.1.2.2 Describe general pathogenesis and general lab diagnosis of bacterial infections

MI1.1.2.3 Define,classify culture media, applications of **culture media**

List out and describe different **culture methods**

MI1.1.2.4 Interpretation of various biochemical reactions

MI1.1.3 Introduction to virology

- Describe the classification & morphology of virus
- Describe general pathogenesis and general lab diagnosis of viral infections

MI1.1.4 Introduction to mycology

- Describe the classification & morphology of fungi .Describe general pathogenesis and general lab diagnosis of fungal infections.

MI1.1.5 Introduction to parasitology

- Describe the classification, morphology of parasites.
- Describe general pathogenesis and general lab diagnosis of parasitic infections

MI1.2 Perform and identify the different causative agents of Infectious

diseases by Gram Stain, ZN stain and stool routine microscopy

MI1.3 Describe the **epidemiological basis** of common infectious diseases

- Define: Epidemiology, Describe the various epidemiological patterns of infectious disease.
- Discuss the various microbial factors contributing to disease.
- Discuss the various sources and reservoirs of infections.
- Describe the various modes of transmission of infections.

MI1.4 Classify and describe the different methods of **sterilization and disinfection**. Discuss the application of the different methods in the laboratory, in clinical and surgical practice

MI1.4.1 Define: Sterilization, disinfection, asepsis, antiseptics, and decontamination.

- Classify & describe various methods of sterilization methods
- Discuss various methods of disinfection
- List out Testing of disinfectants. Discuss the application of the different methods in clinical and surgical practice.

MI1.5 Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice

MI1.5.1 Classify the medical devices using Spaulding's classification

- Classify disinfectants
- Define & applications of Fumigation, fogging
- Describe: Plasma sterilization
- Identify the most appropriate method of sterilization / disinfection in the given cases scenario.

MI1.6 Describe the mechanisms of **drug resistance**, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy

MI1.6.1 Describe the bacterial genetic structures

- Describe bacterial variation – mutation & gene transfer
- Describe the methods of gene transfer in bacteria
- Describe gene transfer by artificial methods.
- List out mechanism of action of antimicrobial agents

MI1.6.2 Define drug resistance, List out various mechanisms of antibacterial resistance. MRSA,VRE,ESBL,MBL etc

- Define: Bacteriostatic, bactericidal, pharmacodynamics, pharmacokinetics, adverse reactions.
- List out and describe different methods of antimicrobial susceptibility testing
- Discuss MIC, broth dilution, agar dilution
- Describe principles of antibiotics selection and monitoring therapy

MI1.7 Describe the **immunological mechanisms in health**

MI1.7.1 Immunity

- Define & classify Immunity. Describe in detail all types of Immunity.
- Describe the role of vaccines in Immunity

MI1.7.2 Immune system - Describe structure and functions of immune system

MI1.7.3 Antigen & Immunoglobulins

- Define& classify Antigen. Describe characteristics of Antigens
- Define & classify Immunoglobulins
- (Antibody).
- Describe in detail all types of Antibody.

MI1.7.4 Complement system

- Describe components, general properties cascade and role of Complement system in health and disease

MI1.7.5 Antigen antibody reactions

- Define & classify antigen antibody reactions
- Discuss the principles of Ag -Ab reactions
- Describe the applications of Ag-Ab reactions in the diagnosis of diseases.
- Describe the approach to interpretation of Ag-Ab reaction in the diagnosis of diseases.

MI1.8 Describe the mechanisms of **immunity and response** of the host immune system to infections

MI1.8.1 Define & classify Immune response

- Describe humoral immune response – Primary response, Secondary response, Td response,

T independent response, immunomodulators, monoclonal antibodies

MI1.8.2 Describe cell mediated immune response

- cytokines, importance of CMI
- Differentiate humoral and cell mediated immune response
- Discuss the theories of immune response of humoral immunity

MI1.9 Discuss the immunological basis of **vaccines** and describe the Universal Immunisation schedule

- Classify & describe types of immunization
- Define & classify types of Vaccines
- Discuss advantages and disadvantages among different types of vaccines
- Describe National Immunization Schedule (India)
- Importance of passive immunization

MI1.10 Describe the immunological mechanisms in **immunological disorder** (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection.

MI1.10.1 Hypersensitivity

- Define& classify Hypersensitivity reactions including Gel and Coombs classification
- Describe the mechanism, clinical features, laboratory evaluation and prevention of type I hypersensitivity
- Describe the mechanism, clinical features, laboratory evaluation and prevention of type II hypersensitivity
- Describe the mechanism, clinical features, laboratory evaluation and prevention of type III hypersensitivity
- Describe the mechanism, clinical features, laboratory evaluation and prevention of type IV hypersensitivity
- Discuss tuberculin test, patch test.

MI1.10.2 Autoimmunity

- Define & Describe mechanisms of Immunological tolerance
- Define & Describe various mechanisms of autoimmunity
- Describe various clinical manifestations of common autoimmune diseases
- Describe approach for laboratory diagnosis of autoimmune diseases

MI1.10.3 Immunodeficiency

- Define & Classify immunodeficiency syndromes
- Describe various immunodeficiency syndromes.
- Discuss the laboratory methods used in detection of immunodeficiency diseases.

MI1.11 Describe the immunological mechanisms of **transplantation and tumor** immunity

Transplantation immunity

- Define & Classify transplantation,
- Define & Discuss the mechanism allograft rejection, prevention of rejection
- Histocompatibility antigens, MHC
- Describe types of HLA typing
- Describe Graft – versus-host reaction

Tumor immunity

- Define Tumor antigen, immunological surveillance
- Describe immunosuppression.
- Describe immunotherapy in cancer

TOPIC – CVS & BLOOD (MI2.1-2.7)

No of competencies- 7 **No of procedures requiring certification -NIL**

MI2.1 Describe the etiologic agents in rheumatic fever and their diagnosis

Rheumatic fever

- Describe the immunological basis of rheumatic fever/ nonsuppurative diseases caused by streptococci
- Classify streptococcus
- Describe the morphology, pathogenesis, antigenic structures, toxin & virulence factors, clinical features, epidemiology of streptococcus pyogenes
- Discuss the serological test for diagnosis of rheumatic fever.
- Discuss the role of antibiotics in treatment and prevention of rheumatic fever.

MI2.2 Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of **Infective endocarditis**

- Enumerate the organisms causing infective endocarditis
- Viridans Streptococcus, Coagulase negative Staph, HACEK group etc
- Describe the pathogenesis, clinical features of infective endocarditis.
- Discuss the approach to identify the causative organism.
- Discuss the importance of multiple sample collection.
- Discuss automated blood culture systems.

MI2.3 Identify the microbial agents causing Rheumatic Heart Disease & infective Endocarditis

- Identify bacteria by observing colony morphology, biochemical reactions
- Interpret antimicrobial susceptibility test.
- Define: Minimum Inhibitory concentration, minimum bactericidal concentration.
- Discuss other test that can be used for diagnosis.

MI2.3.1 Define sepsis, **septicemia,** bacteremia, fungemia, viremia, parasitemia

- Describe etiology, pathogenesis, clinical features, lab diagnosis including prognostic markers and treatment of septicemia

MI2.4 List the common microbial agents causing **anemia**. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia

- List the common microbial agents causing anemia.
- Describe the morphology, of the common microbial agents causing anemia.
- Discuss the mode of infection, pathogenesis & clinical course of the common microbial agents causing anemia.
- Discuss the laboratory diagnosis of the common microbial agents Causing anemia
- Discuss the treatment & prevention of the common microbial agents causing anemia.
- infectious agents causing Iron defeciency, megaloblastic,haemolytic anaemia and anaemia of chronic infections,

MI2.5 Describe the etio- pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kalaazar, malaria, filariasis and other common parasites prevalent in India

Introduction

- Classify parasites and enumerate parasites prevalent to India

MI2.5.1 Malaria

- Describe the morphology, life cycle, pathogenesis, clinical features of malarial parasite.
- Describe the treatment and prevention of malaria.

MI2.5.2 Leishmania

- Describe the morphology, life cycle, pathogenesis, clinical features of leishmania.
- Describe the laboratory diagnosis for kalaazar
- Describe the treatment and prevention for kalaazar

MI2.5.3 Trypanosoma

- Describe the morphology, life cycle, pathogenesis, clinical features of Trypanosoma.
- Describe the laboratory diagnosis for sleeping sickness.
- Describe the treatment and prevention for sleeping sickness

MI2.5.4 Filarial worm

- Describe the morphology, life cycle, pathogenesis, clinical features of filarial worm.
- Describe the laboratory diagnosis for filarial worm.
- Describe the treatment and prevention for filarial worm.

MI2.5.5 Schistosomes

- Describe the morphology, life cycle, pathogenesis, clinical features of Schistosomes.
- Describe the laboratory diagnosis for schistosomiasis.
- Describe the treatment and prevention of schistosomiasis.

MI2.6 Identify the causative agent of malaria and filariasis

MI2.7 Describe the epidemiology, the etio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV

MI2.7.1 Describe morphology, epidemiology, pathogenesis of HIV

- Describe clinical features of AIDS

MI2.7.2 Opportunistic infections in AIDS

MI2.7.3 Describe the immunological abnormalities in HIV infection

- Describe various methods of laboratory diagnosis of HIV
- Discuss applications of serological tests.
- Discuss laboratory monitoring of HIV infection
- Discuss the different approaches to the treatment of AIDS

MI2.7.4 Discuss NACO guidelines, strategies, pre-test counseling, post- test counseling

- Discuss NACO guidelines for post-exposure prophylaxis

MI2.7.5 Describe various modes of transmission of HIV

MI2.7.6 Describe prophylactic measures in preventing HIV

Transmission Standard precautions, spill management etc

TOPIC: GASTROINTESTINAL & HEAPATOBILIARY SYSTEM (MI3.1-3.8)

No of competencies 8 **No of procedures requiring certification – NIL**

MI3.1. Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents.

MI3.1.1-Introduction of gastrointestinal infections

- Brief structure and immunity of GIT
- Define diarrohea, dysentery
- Enumerate the various etiological agents of diarrhoea bacterial, viral, parasitic etc.
- Classify the etiological agents in different age groups, immunocompromised, immunocompetent individuals.
- Discuss the mode of transmission, the pathogenesis, clinical manifestation and laboratory diagnosis of diarrhoea

MI3.1.2 Epidemiology, pathogenesis, laboratory diagnosis of diarrheagenic E.coli,

MI3.1.3 Epidemiology, pathogenesis, clinical features, complications, laboratory diagnosis,treatment & prophylaxis of Cholera

MI3.1.4 Antibiotic Associated Diarrhoea - Clostridium difficile

MI3.1.5 Viral gastroenteritis etiological agents, epidemiology, pathogenesis, clinical features and laboratory diagnosis - Rota, Astro, Noro

MI3.1.6 Bacillary dysentery Define dysentery etiological agents, pathogenesis, clinical features and laboratory diagnosis of bacillary dysentery -Shigella.Y.enterocolitica

MI3.1.7 Amoebic dysentery Discuss the morphology, life cycle, mode of transmission, pathogenesis, clinical features, complications and laboratory diagnosis of Amoebic dysentery difference between

amoebic and bacillary dysentery - E.histolytica

- Mention briefly about non pathogenic intestinal amoebae

MI3.1.8 Etiological agents, pathogenesis, clinical manifestations and laboratory diagnosis of Diarrhoea in immunocompromised host- Giardiasis Cryptosporidium, Cyclospora, Isospora, Giardia

MI3.1.9 Soil transmitted helminthic infections- Ascaris, Enterobius, Trichuris trichuira

MI3.2 Identify the common microbial agents causing diarrhoea and dysentery

MI3.3 Enteric fever Describe the enteric fever pathogens and discuss the evaluation of clinical course and the laboratory diagnosis of diseases caused by them

- Define, mention the etiological agents, epidemiology, pathogenesis, clinical manifestations, complications, laboratory diagnosis of enteric fever

MI3.4 Identify the different modalities for diagnosis of Enteric fever , choose the appropriate test related to the duration of illness .

MI3.5 Food poisoning Enumerate the causative agents of food poisoning and discuss the pathogenesis ,clinical course and laboratory diagnosis

- Definition, source, pathogenesis, classification of food poisoning etiological agents based on type of food and pathogenesis, clinical manifestation laboratory diagnosis treatment and prophylaxis of food poisoning – Staphylococcus, Bacillus cereus, Clostridium perfrinegens, Clostridium botulinum, Salmonella typhimurium, halophilic vibrios etc

MI 3.6 Acid Peptic disease Describe the etiopathogenesis of Acid peptic disease and the clinical course . Discus the diagnosis and management of the causative agent of Acid peptic disease .

- Etiopathogenesis,clinical features,complications laboratory diagnosis treatment and prophylaxis of Acid peptic disease - H.pylori

MI3.7 Viral hepatitis Describe the epidemiology, the etio- pathogenesis and discuss the viral markers in the evolution of viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis

MI 3.7.1 Discuss the pathogenesis, clinical manifestations, complications and laboratory diagnosis, treatment and prophylaxis of enterically transmitted viral hepatitis Hepatitis A & E

MI 3.7. 2 Discuss the pathogenesis, clinical features, laboratory diagnosis treatment and prophylaxis of parenteral transmitted viral hepatitis -Hepatitis B

MI 3.7. 3 Discuss the pathogenesis, clinical features, laboratory diagnosis treatment and prophylaxis of parenteral transmitted viral hepatitis C & D

- Note on national programme National Viral Hepatits Control & Prevention Programme(NVHCP)

TOPIC: INFECTIONS OF SKIN & MUSCULOSKELETAL SYSTEM (MI4.1-4.3)

No of competencies – 3 No of procedures requiring certification – NIL

MI4.1 - Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections

MI4.1.1 Introduction to anaerobic infections

- List the normal anaerobic flora of human body.
- Enumerate and classify disease causing anaerobic bacteria with disease caused by them.
- Define Anaerobiasis. Describe the types of samples and collection methods for anaerobic culture. Describe the transport of specimen and culture of clinical samples for anaerobic culture. List the antibiotics used to treat anaerobic infections
- Classify Genus Clostridium. Describe the morphology of Genus Clostridium
- Discuss the etiopathogenesis, clinical features, laboratory diagnosis, treatment and prophylaxis of **Gas gangrene**.

MI4.1.2 Discuss the pathogenesis, clinical features, laboratory diagnosis, treatment and prophylaxis of **Tetanus.**

MI4.1.3 Discuss the pathogenesis, clinical features, laboratory diagnosis and treatment of **botulism.**

MI4.1.4 Discuss the etiopathogenesis, clinical features, laboratory diagnosis and treatment of **pseudomembranous colitis**.

MI4.1.5 Classification, diseases, laboratory diagnosis & treatment of infections caused by **non sporing anaerobes**

MI4.1.6 Discuss the pathogenesis, clinical features, lab diagnosis, treatment and prophylaxis of **Actinomycosis & nocardiosis**

MI4.2 – Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections

- Classify bone & joint infections
- Enumerate the microorganisms causing infections of bone & joint (infectious arthritis, osteomyelitis and orthopedic implant associated infections)
- Describe the etiopathogenesis & clinical course of bone & joint infections
- Discuss the laboratory diagnosis of bone & joint infections

MI4.3 – Describe the etiopathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis

MI4.3.1 Introduction to Skin & Soft Tissue Infections

- Describe the normal anatomy, innate immunity & commensals of skin
- Define folliculitis, furuncle, carbuncle, macule, papule, nodule, pustule, vesicle, scales, ulcer and bulla.

- List the various organisms causing skin and soft tissue infections - Bacteria, Viruses, Fungi, Parasites
- Describe the pathogenesis, clinical course and laboratory diagnosis of **Staphylococcus aureus**
- Enumerate the etiological agents and laboratory diagnosis of post- operative wound infections & burns wound infection

MI4.3.2

- Describe the pathogenesis, clinical course and laboratory diagnosis of **Leprosy**
- Describe the pathogenesis, clinical course and laboratory diagnosis of **Atypical mycobacterial infections**

MI4.3.3 Enumerate **viruses causing skin and soft tissue lesions**. Discuss in detail Herpes viruses,pathogenesis, clinical features, laboratory diagnosis, treatment and prophylaxis

MI4.3.3a Viral exanthematous infections - Measles, Rubella, (Coxsackie, Pox, HPV, Molluscum, Hand foot mouth Disease)

MI4.3.4 List fungi causing **superficial fungal diseases**. Describe their clinical features,laboratory diagnosis,treatment and prophylaxis - Tinea versicolor, piedra, tinea nigra, dermatophytoses, Mucocutaneous candidiasis

MI4.3.5 subcutaneous mycosis – list the fungi causing subcutaneous mycosis.Describe the clinical features, laboratory diagnosis and treatment of subcutaneous mycosis.- Sporotrichosis, Chromoblastomycoses, Rhinosporidiosis, entamophthoromycoses, mycetoma

MI4.3.6 Enumerate the tissue nematode parasites causing skin and soft tissue lesions with their clinical course and laboratory diagnosis- Filariasis, Onchocerca, Loa loa, Mansonella, Dracunculus, Trichinella and Larva migrans

MI4.3.7 Describe the pathogenesis, clinical course and laboratory diagnosis of Diabetic foot & cellulitis- Streptococcus & others

MI4.3.8 Describe the pathogenesis, clinical course and laboratory diagnosis of cutaneous Anthrax

TOPIC: CENTRAL NERVOUS SYSTEM INFECTIONS –(MI5.1-5.3)

No of competencies: (3) No of procedures that require certification: NIL

MI5.1 Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of **meningitis**

MI5.1.1 Describe normal structure of CNS and normal protective mechanisms
MI5.1.2 Define meningitis
MI5.1.3 Classify meningitis based on age group and duration
MI5.1.4. Enumerate the causative agents of meningitis and classify them based on age group affected, duration of disease and immune status
MI5.1.5. Describe general pathogenesis and clinical features of meningitis
MI5.1.6. Discuss the general approach to diagnosis of meningitis
MI5.1.7. Describe pathogenesis, lab diagnosis, prevention and treatment of meningococcal meningitis
MI5.1.8. Describe pathogenesis, lab diagnosis, prevention and treatment of pneumococcal meningitis
MI5.1.9. Describe pathogenesis, lab diagnosis, prevention and treatment of meningitis caused by *Streptococcus agalactiae*
MI5.1.10. Describe pathogenesis, lab diagnosis, prevention and treatment of meningitis caused by *Haemophilus influenzae*
MI5.1.11. Describe pathogenesis, lab diagnosis, prevention and treatment of Listeria meningitis
MI5.1.12. Describe pathogenesis, lab diagnosis, prevention and treatment of gram negative bacterial meningitis
MI5.1.13. Describe pathogenesis, lab diagnosis, prevention and treatment of tubercular meningitis
MI5.1.14. Describe pathogenesis, lab diagnosis, prevention and treatment of meningitis caused by spirochetes
MI5.1.15. Describe pathogenesis, lab diagnosis, prevention and treatment of viral meningitis caused by *Herpes viruses, Enteroviruses, Mumpsvirus*, etc
MI5.1.16. Describe pathogenesis, lab diagnosis, prevention and treatment of meningitis caused by fungi - *Cryptococcus neoformans, Candida Spp., Coccidioides, Histoplasma, etc*

MI5.2 Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of **encephalitis**

MI5.2.1. Define: Encephalitis

MI5.2.2. Classify Encephalitis

MI5.2.3. Enumerate the causative agents of Encephalitis

MI5.2.4. Describe general pathogenesis of encephalitis

MI5.2.5. Describe the clinical presentation of Encephalitis

MI5.2.6. Discuss the approach to diagnosis of viral Encephalitis

MI5.2.7. Describe morphology of polio virus. Describe pathogenesis, clinical features, lab diagnosis and prevention of poliomyelitis

MI5.2.8. Describe morphology of rabies virus. Describe pathogenesis, clinical features, lab diagnosis and prevention of rabies

MI5.2.9. Describe etiology, pathogenesis, clinical features, lab diagnosis and prevention of slow viral infections

MI5.2.10. Discuss the etiopathogenesis, clinical features and approach to diagnosis of parasitic meningitis and Encephalitis

MI5.2.11. Discuss the etiopathogenesis, clinical features and approach to diagnosis of brain abscess

MI5.2.12. Discuss the etiopathogenesis, clinical features and approach to diagnosis of cystic brain lesion- neurocysticercosis, hydatid disease of brain

MI5.3 Identify the microbial agents causing meningitis

MI5.3.1. Analyse clinical features, interpret laboratory test results provided to diagnose the clinical condition and identify the causative microorganism.

MI5.3.2 Describe normal ranges of common CSF parameters

MI5.3.3. Interpret abnormal results of CSF analysis report provided.

MI5.3.4 Demonstrate CSF collection in a mannequin

TOPIC: RESPIRATORY TRACT INFECTIONS MI6.1-6.3

No of Competency-3 No of procedures require Certification-2

Competency MI6.1 Describe the etio-pathogenesis, laboratory diagnosis and prevention of Infections of upper and lower respiratory tract

- **MI6.1.1** Describe the structure respiratory system and role of immunity in respiratory system
- **MI6.1.2** Discuss the etiological agents, pathogenesis, epidemiology clinical features,complications and laboratory diagnosis of rhinitis
- **MI6.1.3** Discuss the classification, etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of otitis
- **MI6.1.4** Discuss the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of sinusitis
- **MI6.1.5** Discuss the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of pharyngitis, tonsillitis
- **MI6.1.6** Discuss the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of laryngitis, bronchitis, bronchiolitis
- **MI6.1.7** Define & classify pneumonia. Enumerate the etiological agents of pneumonia general laboratory diagnosis and prophylaxis of pneumonia
- **MI6.1.8** Discuss pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of community acquired pneumonia- pneumococci
- **MI6.1.9** Enumerate the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of hospital acquired pneumonia-Klebsiella, Staphylococci, Legionella

- **MI6.1.10** Enumerate the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis treatment and prophylaxis of ventilator associated pneumonia- Acinetobacter
- **MI6.1.11** Enumerate the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of atypical pneumonia- Mycoplasma, Chlamydia
- **MI6.1.12** Enumerate the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of viral respiratory infections – Adeno, RSV, EBV
- **MI6.1.13** Enumerate the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of viral pneumonia – Influenza virus, SARS -corona
- **MI6.1.14** Enumerate the etiological agents, pathogenesis, epidemiology clinical features, complications and laboratory diagnosis of pneumonia in immunocompromised host- Pneumocystis jirovecii, CMV
- **MI6.1.15** Describe the epidemiology, mode of transmission, pathogenesis, clinical features complications, laboratory diagnosis, treatment and prophylaxis of pulmonary tuberculosis
- **MI6.1.16** Discuss the importance of MDR TB, RNTCP HIV TB co-infection
- **MI6.1.17** Define and classify the atypical mycobacteria discuss the pathogenesis, clinical features, complications and treatment of pulmonary atypical mycobacterial infection
- **MI6.1.18** Discuss the general characters of dimorphic fungi. Discuss the mode of transmission, pathogenesis, clinical features, complications and laboratory diagnosis of pulmonary mycosis-Histoplasma, coccidioides, Blastomyces, Paracoccidiodies
- **MI6.1.19** Discuss mode of transmission, pathogenesis, clinical features laboratory diagnosis of aspergillosis
- **MI6.1.20** Parasites affecting lung – Paragonimus westermanii (non core), Loefflers syndrome, amoebic lung abscess
- **MI6.1.21** Discuss the immunoprophylaxis for respiratory tract infections

MI6.2 Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)

- **MI 6.2.1** Describe the method of sample collection and transportation
- **MI 6.2.2** Explain the steps of gram's staining procedure
- **MI 6.2.3** Do the grams staining procedure
- **MI 6.2.4** Observe the stained smear
- **MI 6.2.5** Interpret and Report the staining results

MI6.3 Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain)

- **MI 6.3.1** Enumerate the organisms causing LRTI
- **MI 6.3.2** Describe the method of sample collection
- **MI 6.3.3** Recap the Gram's staining procedure and repetition
- **MI 6.3.4** Explain the Acidfast staining procedure
- **MI 6.3.5** Perform the Acid fast staining procedure
- **MI 6.3.6** Interpret and Report the staining results

Topic: - Genitourinary & sexually transmitted infections (MI7.1-7.3)

No of competencies – 3 No of procedures requiring certification – NIL

MI 7.1 - Describe the etiopathogenesis and discuss the laboratory diagnosis of infections of genitourinary system

MI 7.1.1 Describe the normal anatomy and innate defense mechanisms in the male and female genital tract

MI 7.1.2 Enumerate the various infections of genitourinary tract

MI 7.1.3 Describe the etiology and pathogenesis of Genitourinary tract infections in general

MI 7.1.4 Discuss the clinical features, sample collection and laboratory diagnosis of genitourinary infections in general

MI 7.1.5 Discuss the effect/ complications of genitourinary infections in pregnancy (Maternal & fetal)

MI 7.2 – Describe the etiopathogenesis and discuss the laboratory diagnosis of **Sexually Transmitted Infections**. Recommend preventive measures

MI 7.2.1 Enumerate the bacterial, viral, fungal and parasitic agents causing Sexually Transmitted infections

MI 7.2.2 Describe the pathogenesis, clinical features, laboratory diagnosis and treatment of pathogens causing ulcerative lesions in the genital tract (Syphilis, Haemophilus ducreyi, LGV, Calymmatobacterium granulomatis, Herpes Virus)

MI 7.2.3 Describe the pathogenesis, clinical features, laboratory diagnosis and treatment of pathogens causing Urethral syndrome/ white discharge per vagina (Gonococci, Candida spp, Trichomonas vaginalis, Bacterial vaginosis)

MI 7.2.4 Describe the pathogenesis, clinical features, laboratory diagnosis and treatment of Mycoplasma spp

MI 7.2.5 Describe non gonococcal urethritis. Enumerate the agents causing the same

MI 7.2.6 Differentiate between bacterial vaginosis & bacterial vaginitis

MI 7.2.7 Discuss the various measure for prevention of Sexually Transmitted infections

MI 7.2.8 Discuss the importance of confidentiality in reporting Sexually transmitted diseases

MI 7.2.9 Discuss the role of counselling in management of Sexually transmitted diseases

MI 7.2.10 Enumerate the pathogens causing congenital infections. Discuss the pathogenesis, lab diagnosis, prophylaxis, prevention and treatment of these infections.

MI 7.3 – Describe the etiopathogenesis, clinical features, the appropriate method for specimen collection and discuss the laboratory diagnosis of **Urinary tract infections**

MI 7.3.1 Describe the normal anatomy, physiology and Innate defense mechanisms of the urinary tract

MI 7.3.2 Mention the types of Urinary tract infections (upper and lower)

MI 7.3.3 Mention the causative agents of urinary tract infection

MI 7.3.4 Enumerate the predisposing factors in Urinary Tract infections

MI 7.3.5 Discuss the pathogenesis of urinary tract infection

MI 7.3.6 Discuss the clinical features of Urinary tract infections (Difference between upper and lower urinary tract infections)

MI 7.3.7 Describe the methods of collection of urine from infant, adult men/women, and catheterized patients

MI 7.3.8 Discuss the concept of significant bacteriuria

MI 7.3.9 Discuss about asymptomatic bacteriuria & conditions these are seen

MI 7.3.10 Describe about sterile pyuria and enumerate the disease causing sterile pyuria

MI 7.3.11 Define Catheter associated urinary tract infection. Enumerate the predisposing factors, prevention, diagnosis and treatment of CAUTI

MI 7.3.12 Discuss the laboratory diagnosis and treatment of Urinary tract infections

TOPIC- ZOONOTIC DISEASES & MISCELLANEOUS (MI8.1-8.16)

No of competencies -16 No of procedures require certification-1

MI8.1 Enumerate the microbial agents and their vectors causing **Zoonotic diseases**. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention

Introduction -Define zoonotic infections. Enumerate organisms causing zoonotic infections in man and the mode of transmission/vectors transmitting them

MI8.1.1 Anthrax-Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention of Anthrax

MI8.1.2 Plague- Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention plague

MI8.1.3 Brucellosis-Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention brucellosis

MI8.1.4 Leptospirosis-Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention leptospirosis

MI 8.1.5 Rickettsia- Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention Rickettsial and miscellaneous zoonoses

MI8.1.6 Arboviral-Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention of Arboviral infections-Dengue,chikungunya,KFD

MI8.1.7 Toxoplasma & Balantidium-Describe the morphology, mode of transmission,

pathogenesis and discuss the clinical course laboratory diagnosis and prevention of toxoplasmosis & balantidiasis

MI1.8.8Taeniasis-Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention of taeniasis

MI1.8.9 Hydatid disease-Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention of hydatid cyst disease

MI1.8.10 Rabies-Describe morphology of Rabies virus. Describe pathogenesis, clinical features, lab diagnosis and prevention of rabies

MI8.2 Describe the etio-pathogenesis of **Opportunistic Infections** (OI) and

discuss the factors contributing to the occurrence of OI, and the

laboratory diagnosis

•Define opportunistic infections
• Enumerate organisms causing opportunistic infections
• Discuss factors contributing to development of opportunistic infections

Viral agents

• Describe pathogenesis, clinical features, laboratory diagnosis and prevention of viral opportunistic infections - Herpse group, human papilloma virus,

Fungal OI

• Describe pathogenesis, clinical features, laboratory diagnosis and prevention of candidiasis
• Describe pathogenesis, clinical features, laboratory diagnosis and prevention of Cryptococcosis
•Describe pathogenesis, clinical features, laboratory diagnosis and prevention of mucormycosis

Parasitic OI

•Describe pathogenesis, clinical features, laboratory diagnosis and prevention of opportunistic parasitic infections - coccidian intestinal parasitic infections, strongyloidiasis

MI8.3 Describe the role of **oncogenic viruses** in the evolution of virus

associated malignancy

- Define oncogenic viruses
- Enumerate oncogenic viruses
- Describe pathogenesis of viral oncogenesis
- Describe laboratory diagnosis of oncogenic viral infections
- Describe methods of prevention of oncogenic viral infections

MI8.4 Describe the etiologic agents of **Emerging Infectious diseases.**

- Discuss the clinical course and diagnosis
- Define emerging infectious agents.
- Enumerate agents causing emerging infections

- Describe factors contributing to emerging infections.
- Discuss clinical course and laboratory diagnosis of emerging infections
- Describe the Indian scenario of emerging infectious agents

MI8.5 Define **Healthcare Associated Infections (HAI)** and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention

- Define Healthcare Associated Infections (HAI)
- Enumerate the types of HAI
- Discuss the factors that contribute to the development of and methods to prevent catheter associated urinary tract infection (CAUTI)
- Discuss the factors that contribute to the development of and methods to prevent central line associated blood stream infection (CLABSI)
- Discuss the factors that contribute to the development of and methods to prevent ventilator associated pneumonia (VAP)
- Discuss the factors that contribute to the development of and methods to prevent surgical site infection (SSI)
- Describe principles and application of antibiotic stewardship

MI8.6 Describe the basics of **PANDEMIC MANAGEMENT (Infection control)**

- Define Standard precautions
- List the components of Standard precautions
- Describe the various transmission-based precautions.
- Describe the constitution and functions of HICC.
- Define Biomedical waste
    - Classify biomedical waste and describe methods of segregation, decontamination and disposal of each type as per Biomedical waste management rule
    - Describe appropriate management of needle stick injury in healthcare setting
    - Manage bio-spill
    - Describe vaccines that are useful in healthcare workers

MI8.7 Demonstrate Pandemic management (Infection control) practices and use of **Personal Protective Equipment (PPE)**

MI8.8 Describe the methods used and significance of assessing the microbial contamination of food, water and air

- Describe the methods used and significance of assessing the microbial contamination of food.
- Describe the methods used and significance of assessing the microbial contamination of water.
- Describe the methods used and significance of assessing the microbial contamination of air.

MI8.9 Discuss the appropriate method of **collection of samples** in the performance of laboratory tests in the detection of microbial agents causing Pandemic (infectious diseases)

- Discuss methods of sample collection for laboratory diagnosis of upper respiratory infections
- Discuss methods of sample collection for laboratory diagnosis of lower respiratory infections

- Discuss methods of sample collection for laboratory diagnosis of CVS and blood stream infections
- Discuss methods of sample collection for laboratory diagnosis of CNS infections
- Discuss methods of sample collection for laboratory diagnosis of gastrointestinal infections
- Discuss methods of sample collection for laboratory diagnosis of infections of skin and soft tissues
- Discuss methods of sample collection for laboratory diagnosis of musculoskeletal infections
- Discuss methods of sample collection for laboratory diagnosis of infections eye, nose and ear
- Discuss methods of sample collection for laboratory diagnosis of genitourinary infections

MI8.10 Demonstrate the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing Pandemic (Infectious diseases)

MI8.11 Demonstrate respect for patient samples sent to the laboratory for performance of laboratory tests in the detection of microbial agents causing Infectious diseases

MI8.12 Discuss confidentiality pertaining to patient identity in laboratory results

- Discuss the rights and responsibility of patients
- Discuss the rights and responsibility of laboratory with respect to confidentiality of laboratory results
- Discuss the ethical issues involved in confidentiality pertaining to patient identity.
- Discuss the medicolegal consequences of breach in confidentiality

MI8.13 Choose the appropriate laboratory test in the diagnosis of the infectious disease

- Identify the clinical condition based on the history provided.
- Choose the appropriate laboratory tests in the diagnosis of given infectious disease.
- Justify why a particular laboratory test was chosen to diagnose a given infectious disease

MI8.14 Demonstrate **confidentiality** pertaining to patient identity in laboratory results

- Demonstrate the understanding of importance of confidentiality with respect to patient's laboratory test results
- Identify situations where confidentiality needs to be maintained regarding patient's laboratory test results and where it can be bypassed
- Demonstrate confidentiality pertaining to patient identity in laboratory results.
- Counsel the patient about the test results in simulated setting

MI8.15 Choose and **Interpret the results** of the laboratory tests used in diagnosis of the infectious diseases

- Choose appropriate laboratory test(s) in the diagnosis of the infectious disease based on the case scenario and the order in which they need to be performed, if applicable
- Interpret the results of the laboratory tests used in diagnosis of the given infectious disease scenario

MI8.16 Describe the **National Health Programs** in the prevention of common infectious disease (for information purpose only as taught in CM)

- Enumerate all the National Health Programs regarding common infectious diseases in India
- Describe the goals of the various National Health Programs in the prevention of common infectious disease.
- Describe laboratory diagnostic tools used in the National Programs related to infectious diseases
- Describe general immunoprphylactic and chemoprophylactic measures used in the National Programs related to infectious diseases

V. TEACHING & LEARNING METHODS

TOPIC- GENERAL BACTERIOLOGY & IMMUNOLOGY MI 1.1-1.11

Sl. no	LECTURES (10)	TUTORIALS/SGD (8)	SDL (3)	PRACTICAL (15)
1	**MI1.1.1** Introduction to infectious diseases a nd History	Microscopy - Types of microscopes, principles and applications of each	**MI1.7.2** immune system	Simple stain exercise and hanging frop demonstration
2	**MI1.1.2** Morphology &Physiology of Bacteria	**MI1.1.2.3** Culture Media	**MI1.7.3** Antigen & immunoglobuli n s	**MI1.1.2.3** Culture media and methods (including anaerobic)
3	**MI1.1.3** Introduction to virology	**MI1.1.2.4** Principles of lab diagnosis of infectious diseases – identification of bacteria (including biochemical tests)	**MI1.10.4** Immunodeficie n cy	Identification of bacteria based on Biochemical tests
4	**MI1.1.4** Introduction to mycology	**MI1.3** Epidemiology & pathogenesis of Infectious diseases		**MI1.1.3** Demonstration of Viral Diagnostic methods - microscopy /culture/immunologi cal/molecular
5	**MI1.1.5** Introduction to parasitology	Visit to CSSD		**MI1.1.4** Demonstration of Diagnostic methods used in Fungal infections -

				microscopy/culture /i mmunological/mol ec ular
6	**MI1.4.1**Sterilizatio n & Disinfection - Physical methods	**MI1.5.1** Sterilization & Disinfection, Spaulding's classification, chemical methods		**MI1.1.5** Demonstration of Diagnostic methods used in parasitic infections - microscopy/culture /i mmunological/mol ec ular; stool examination Exercise (1)
7	**MI1.6.1** Bacterial genetics (Bacteriophage)	**MI1.6.2** Principles and types of antibiotic susceptibility testing (Introduce MRSA, ESBL, MBL, VRE)		**MI1.2** Gram staining (1)
8	**MI1.7.1** Immunity	**MI1.9** Immunological basis of vaccine & Universal Immunization Schedule		**MI1.2** Gram staining (2)
9	**MI1.7.4** Complement system			**MI1.2** Acid fast staining (1)
10	**MI1.7.5** Antigen-Antibody reactions			**MI1.2** Acid fast staining (2)
11	**MI1.8.1**Immune response - Humoral			**MI1.2** Stool examination (2)
12	**MI1.8.2** Immune response - cell mediated			**MI1.5** Physical methods of sterilization - Demo
13	**MI1.10.1** Hypersensitivity -1			**MI1.5** Identify the most appropriate method of sterilization / disinfection in the given case scenarios. Discuss the reason for

				choosing the method of sterilization / disinfection.
14	**MI1.10.2** Hypersensitivity - 2			**MI1.6.2** Antimicrobial susceptibility testing and interpretation – Disk diffusion Demo
15	**MI1.10.3** Autoimmunity			**MI1.7.5** Demonstration of types of Antigen Antibody reactions
16	**MI1.11** Immunology of transplantation & tumour immunity			

TOPIC – CVS & BLOOD MI 2.1-2.7

SL.NO	LECTURE-9	TUTORIALS/SGD-9	SDL-2	PRACTICAL (5)
1	**MI2.1** Rheumatic fever -Microbial agent and pathogenesis, Lab diagnosis and management - Streptococcus pyogenes	**MI2.4** Anaemia(1)	Diphyllobothrium latum and Mansonella	**MI2. 1 AE** Rheumatic fever - Streptococci - ASLO
2	**MI2.2** Infective endocarditis	Case discussion- Hookworms,pathogenesis, clinical course,lab diagnosis, treatment and prevention	**MI2.5.4** Filarial worm	**MI2.3.1 AE** Sepsis markers - CRP, Procalcitonin - Applied exercise
3	**MI2.3.1** Septicemia	Case discussion- Malaria with complication and reinforce life cycle, Babesiosis		**MI2.2 AE** Infective endocarditis- (Viridans Streptococci, Coagulase negative Staphylococci)
4	**MI2.5** Parasites endemic to India- Classification, distribution and	**MI2.5.3** Trypanasomes		**MI2.4** stool examination (3)
	diseases burden			(Hookworm)
5	**MI2.5.1** Malaria, mode of infection, pathogenesis, clinical course, lab diagnosis, treatment and prevention	**MI2.5.5** Schistosomes		**MI2.6 Demonstratio n** of blood parasites - Plasmodia, Microfilaria (smear)
6	**MI2.5.2** Leishmania pathogenesis, clinical course, lab diagnosis, treatment and prevention	**MI2.7.2** Opportunistic infections - relevant to HIV/AIDS		**MI2.5.2,3 Demonstratio n** of blood parasites - Leishmania, Trypanosomes (smear/picture

7	**MI2.7.1** HIV I	**MI2.7.4** NACO guidelines, strategies, pre-test counseling, post- test counseling		**MI2.7.3 AE** Serological diagnosis of HIV - ICT, ELISA, PCR
8	**MI2.7.3** HIV 2	**MI2.7.5** Modes of transmission,prevention		**MI2.7.3** Pre & Posttest counselling, Confidentailit y (AETCO M - OSPE)

TOPIC: GASTROINTESTINAL & HEAPATOBILIARY SYSTEM MI3.1-3.8

SL.NO	LECTURES (10)	TUTORIALS/S GD (4)	SDL(0)	PRACTICAL (6)
1	**MI3.1.1** Introduction to gastrointestinal infections	**MI3.1.2** Diarrheagenic E.coli	**MI3.1.4** Antibiotic associated diarrohea	**MI3.1.2 ,3,5 AE** -3 Diarrheagenic E.coli, cholera, food poisoning Hanging drop preperation
2	**MI3.1.3** Cholera	**MI3.1.5** Viral diarhhea		**MI3.1.7 ,8,9** DOAP: Stool examination (3,4,5); Demonstration - Enatamoeba Giardia,Coccidia
3	**MI3.1.6** Bacillary dysentery	**MI3.1.9** Soil transmitted helminthic infections		**MI3.1. 6 AE** Bacillary dysentery
4	**MI3.1.7** Parasitic dysentery E.histolytica Balantidium coli	**MI 3.6** Overview of Acid peptic disorder		**MI3. 4 AE** – Lab diagnosis of Enteric fever 1st week- blood culture 2nd week widal test

5	**MI3.1.8**Parasitic Diarrhea in immunocompetent and immunocompromised			**MI3. 7 AE** Seromarkers of Hepatitis B, Hepatitis C
6	**MI3.3** Enteric fever			Applied bacteriology, virology and parasitology exercises in GIT
7	**MI3.5** Food poisoning			
8	**MI 3.7. 1** Enterically transmitted Viral hepatitis - Hepatitis A and E			
9	**MI 3.7. 2** - Hepatitis B			
10	**MI 3.7. 3** Hepatitis C and D			

TOPIC: INFECTIONS OF SKIN & MUSCULOSKELETAL SYSTEM MI 4.1-4.3

SL.NO	LECTURE (10)	TUTORIAL/SGD (3)	SDL (1)	PRACTICAL (4)
1	**MI4.1.1** Introduction to anaerobic infections	**MI4.1.6** Actinomycosis , Nocardia	**MI4.3.3a** Pox virus	**MI4.3.1** Gram stain exercise Gram stain of Cl.tetaniDemo) Demonstration of sample collection – (collection of pus)
				AE 3- 1.Cellulitis (Streptococcus pyogenes), 2.Surgical site infection, 3.Burns wound infection (Pseudomonas**)**

2	**MI4.1.2** Tetanus	**MI4.3.7** Cellulitis including diabetic foot		**MI4.2** AE 1.Osteomyelitis 2. Infective arthritis
3	**MI4.1.5** Infections of Nonsporing anaerobes	**MI4.3.6** Tissue nematode infections of skin and soft-tissue		**MI4.3.2** ZN staining - Demonstration of slides of 1. M Leprae, preparation of Slit Skin Smear demo (video)
4	**MI4.2** Bone & joint infections			**MI4.3.4, 5 AE** Dermatophytoses & Mycetoma collection of sample KOH mount, culture, Side culture; LPCB mount
5	**MI4.3** Introduction to skin and soft tissue infections			**MI4.3.3** AE - Viral exanthematous fever
6	**MI4.3.2** Leprosy, (Atypical mycobacteria affecting skin			
7	**MI4.3.3-** Herpes viruses			
8	**MI4.3.3a** Viral exanthematous infections			
9	**MI4.3.4** Superficial mycoses			
10	**MI4.3.5** Subcutaneous mycoses			

TOPIC: CENTRAL NERVOUS SYSTEM INFECTIONS MI5.1-5.3

SL.NO	LECTURES (6)	TUTORIALS/SGD (7)	SDL (2)	PRACTICAL (3)
	MI5.1.1 Introduction to CNS infections	**MI5.1.2a** Pyogenic meningitis	Prevention of Polio and rabies	**MI5.2.7,8** Spotter - Polio vaccine,hydatid cyst **MI5.2.8** AE 1.Rabies - using Negri body slide/photograph **MI5.2.12** 2.- hydatid cyst, 3.Neurocysticercosis (specimen/CT scan picture) 4.cerebral malaria - peripheral smear- Pl.falciparum or ICT
2	**MI5.1.2** Pyogenic meningitis	**MI5.1.3** Chronic meningitis		**MI5.1.8,9,10 AE.Pyogenic meningitis-** Sample collection - CSF (Manequin) 1.Meningococcus, H.influenzae 2. Neonatal meningitis - Streptococcus agalctiae
3	**MI5.1.5** Fungal meningitis	**MI5.1.4** Aseptic meningitis - Viral causes		**MI5.1.13 AE-** 3.Tubercular meningitis **MI5.1.16. AE** 4.Cryptococcal meningitis **MI5.2.11 AE - cerebral**
				abscess - Anaerobes/ Staphylococcus/ Nocardia/

4	**MI5.2.1** Viral encephalitis	**MI5.2.4** Slow viral infections		
5	**MI5.2.2** Polio	**MI5.2.5** Parasitic meningitis and encephalitis Toxoplasmosis, cerebral malaria		
6	**MI5.2.3** Rabies	**MI5.2.5** Parasitic meningitis and encephalitis Primary amoebic encephalitis		
7		**MI5.2.6** Infectious space occupying lesions of CNS		

TOPIC: RESPIRATORY TRACT INFECTIONS MI6.1-6.3

Sl.no	LECTURE (6)	TUTORIALS/SGD (9)	SDL (1)	PRACTICAL (7)
1	**MI6.1-6.4** Introduction to URTI - normal structure & protective mechanisms, etiology, pathogenesis, general lab diagnosis, treatment	**MI6.1.7&8** Community acquired pneumonia - Pneumococcus, H.influenzae	**MI6.1.9** HAP-staph, Legionella	**MI6.1.3 &4** **AE** otitis Proteus, Aspergillus
2	**MI6.1.5** Diphtheria	**MI6.1.6** Whooping cough and croup B.pertusis, Parainfluenza		**MI6.1.5** **AE**-white patch in oral cavity - Albert stain,
3	**MI6.1.13** Viral pneumonia - Influenza viruses	**MI6.1.12** Viral lower respiratory infections - Adeno, RSV, EBV		**AE-CAP** S.pneumo,

	(Corona)			H.influenzae, K.pneumoniae **VAP** Acinetobacter
4	**MI6.1.15** Mycobacterium tuberculosis- class 1	**MI6.1.11** Atypical Pneumonia - Mycoplasma, Chlamydia, viral		**MI 6.2** AE Gram's staining - with history - otitis media, sinusitis
5	**MI6.1.16** Mycobacterium tuberculosis- class 2	Tb- lab diagnosis with diagnostic algorithm and treatment - integrated with Path, Pharmac		**MI 6.3.1,2,3 AE** Gram's staining - sputum (pneumococcus, Klebsiella, quality of sample)
6	**MI6.1.18 & 19** Fungal infections of lower respiratory tract	**MI6.1.17** Atypical Myco bacteria		**MI6.3.4** Acid fast staining (4)
7		**MI6.1.21** Immunoprophylaxis of Respiratory infection		**MI6.3.4** Acid fast staining (5)
8		**MI6.1.20** General diagnosis of pulmonary parasitic infections- Lung flukes, Paragonimus		
9		**MI6.1.14** Pneumonia in immunocompromised		

TOPIC: GENITOURINARY & SEXUALLY TRANSMITTED INFECTIONS (MI7.1-7.3)

Sl.no	LECTURE (5)	TUTORIALS/SGD (2)	SDL (1)	PRACTICAL (4)
1	**MI 7.1** Normal anatomy & infections of Genito urinary system- pathogenesis, general lab diagnosis	**MI 7.2.7** Prevention measures in STD	**MI 7.2.4** Nongonococcal urethritis including mycoplasma, Ureaplasma, Chlamydia	**MI 7.2.3 AE** Discharge per vagina (differnce between bacterial vaginosis& bacterial vaginitis), Urethral syndrome
2	**MI 7.2.1& 2.2** Pathogens causing ulcerative Lesions in the genital tract 1- Syphilis	**MI 7.2.10** Congenital infections		**MI 7.2.2 AE-**ulcerative lesions in the external genitalia
3	**MI 7.2.2** Pathogens causing ulcerative Lesions in the genital tract 2 (Haemophilus ducreyi, LGV Calymmatobacterium granulomatis, Herpes Virus)			**MI 7.3 AE** - UTI sample collection
4	**MI 7.2.3** Pathogens causing urethral discharge/ white discharge per vagina (Gonnorhoea, Candida, Trichomonas vaginalis, Bacterial vaginosis)			**MI 7.3.11 AE** CAUTI
5	**MI 7.3** Urinary tract infections - E.coli, Klebsiella, Proteus, Enterococcus, others			

TOPIC- ZOONOTIC DISEASES & MISCELLANEOUS (MI8.1-8.16)

SL.NO	LECTURE (6)	TUTORIALS/SGD (9)	SDL (1)	PRACTICAL (11)
1	**MI8.1&1.1** Introduction to zoonotic infections, Anthrax	**MI8.1.2** Plague	Zoonotic TB,cat scratch disease, rat bite fever	**MI 8.1.3,4,5 AE- PUO** Brucellosis leptospirosis **SEROLOGY** Brucella Agg Leptospirosis Weil Felix
2	**MI8.1.3** Brucellosis	**MI8.1.6** Viral hemorrhagic fevers - Yellow fever,		**MI8.1.6 AE**-Lab diagnosis of dengue,
		Ebola, Roboviruses (Hanta, Arena), Lassa, Marburg		chikungunya
3	**MI8.1.4** Leptospirosis , Borreliosis	**MI8.1.8** Taeniasis, (Cysticercosis, partly covered in CNS) and (Hymenolepiasis)		**Mi8.1.8&9 Stool Examination** (5)-larva of Strongyloides **Demonstration** of specimen Taenia adult worms,hydatid cyst & slide of hydatid cyst
4	**MI8.1.5** Rickettsial infections, Other zoonoses (Nontyphoidal Salmonellosis, Prions, Zoonotic mycoses)	**MI8.2** Introduction to opportunistic infections & viral opportunistic infections, candidiasis (Also covered in HIV-CVS MI2.7)		**MI8. 2 AE** Candidiasis Mucromycosis

5	**MI8.1.6** Arboviral infections- Classification, Spotted fever group, Dengue, Chukungunya, KFD, Gen Lab diagnosis; (Zikavirus)	**MI8.2** Opportunistic Intestinal parasitic infections - Cystisosporiasis, Cryptosporidiasis, Cyclosporiasis, Microsporidiasis and Strongyloidiasis, Giardia - (covered in GIT 3.3)		**MI8.7** Donning & doffing of PPE for a given situation - 1
6	**MI8.1.9** Hydatid cyst disease	**MI8.4** Emerging infections and bioterrorism		**MI8.7** Donning & doffing of PPE for a given situation - 2
7	**MI8.2** Zygomycosis	**MI8.5** Hospital Associated Infections (seminar)		**MI8.7** Donning & doffing of PPE for a given situation - 3
8	**MI8.3** Oncogenic viruses -HPV, HTLV (HBV, HDV,,EBV etc)	**MI8.6** Biomedical waste management		**MI8.6** 1.How to manage **bio-spill** in a simulated setting (AETCOM) 2.Advice a HCW with **needle stick injury** in complete and correct sequence in a simulated setting AETCOM 3.Segregate **biomedical waste** as per BMW 2016 rules

9	**MI8.6** Antibiotic stewardship	**MI8.8** Food, water and air microbiology		**MI8.9** Collection of throat swab, nasopharyngeal swab peripheral venous blood for culture in simulated situation
10	**MI8.6** Infection control in hospitals- Principles, components and application; surveillance - standard & transmission based precautions, HICC	**MI8.9,10&11** Sample collection and transportation - (T/L opportunities - General micro/Individual systems/Together at the end as applied Micro practical classes)		**MI8.9** collection of wound swab and pus sample in simulated situation Instruct sample collection procedure (sputum, urine, stool,for culture)
11	**MI8.16** National health programs on infectious diseases - Integrated with PSM	**MI8.12** Discuss with help of case scenarios or role plays or videos : a. Request form or container with incomplete or wrong information		**MI8.9** skin scraping, hair clippings and nail samples) collection procedure independently
		b. Lost CSF sample c. Contaminated blood for culture d. Delayed submission of urine sample for culture e. Salivary sample for ZN stain		in a simulated setting (covered in skin) Demonstrating respect to patient samples - OSPE (AETCOM)
12		**MI8.14** Interaction with ICTC staff - AETCOM		

13		**MI8.15** Case based discussion - reflection confidentiality- Pt identity, lab results) - AETCOM		

VI. CERTIFIABLE COMPETENCIES

It should be certified that the student is competent to perform the below skills independently without supervision.

SI. NO	NUMBER	COMPETENCY	Number required to certify
1	MI1.2	Perform and identify the different causative agents of Infectious diseases by Gram Stain, ZN stain and stool routine microscopy	**5**
2	MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)	**3**
3	MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain)	**3**
4	MI8.7	Demonstrate Infection control practices and use of Personal Protective Equipment (PPE)	**3 each in (Hand hygiene & PPE)**

VII. TIME TABLE

Day	8-9 AM	9 AM -12 NOON		12-1 PM	1-2 PM	2-3 PM	3-4 PM
Monday	Microbiology	Clinical Postings		Lunch		Microbiology Practical	
Tuesday						Microbiology Practical	
Wednesday	Microbiology						
Thursday							
Friday							Microbiology
Saturday		9-11AM	11-12 Noon			AETCOM	
			Microbiology				

VIII. COMP ETENCY DISTRIBUTION IN EACH BLOCK

MCI No	BLOCK WISE COURSE	Competencies	LECTURE	TUTORIAL/SGD	Practical	SDL
MI1	**IST BLOCK**	**General Microbiology and Immunoly**	**16**	**8**	**15**	**3**
MI2		**CVS and Blood**	**9**	**9**	**5**	**1**
MI3		**Gastrointestinal and hepatobiliary system**	**10**	**4**	**5**	**0**

MI4	**IInd BLOCK**	**Musculoskeletal system skin and soft tissue infections**	**10**	**3**	**5**	**2**
MI5		**Central Nervous System infections**	**6**	**7**	**3**	**1**
MI6		**Respiratory tract infections**	**6**	**9**	**7**	**1**
MI7		**Genitourinary & Sexually transmitted infections**	**5**	**2**	**4**	**1**
MI8	**IIIrd BLOCK**	**Zoonotic diseases and miscellaneous**	**11**	**13**	**11**	**1**
			73	**55**	**55**	**10**
		CBME Requirement	**70**	**110**		**10**

IX. TOPICS FOR INTEGRATION

	Pathology	**Microbiology**	**Pharmacology**	**Forensic Medicine**	**Community Medicine**	**Concerned Clinical subjects**
BLOCK 1 **15 weeks**	Immunology Anaemia Wound healing Shock	Immunology Anaemia Shock Surgical practice Infective endocarditis & Rheumatic heart disease Immunisation	Immunology Anaemia Essential medicines Shock Toxicology	Wound healing Toxicology	Essential medicines	Shock Surgical practice Toxicology Infective endocarditis & Rheumatic heart disease Immunisation
BLOCK 2 **15 weeks**	Infective endocarditis & Rheumatic heart disease (Nesting) Myocardial infarction Atherosclerosis Tuberculosis Leprosy AIDS Malaria	Tuberculosis Leprosy AIDS Malaria Enteric fever Viral hepatitis Acid peptic disease Bone & Joint infection Meningitis Encephalitis STI	Tuberculosis Leprosy AIDS Malaria Acid peptic disease		Tuberculosis Leprosy AIDS Malaria	Myocardial infarction Atherosclerosis Tuberculosis Leprosy AIDS Malaria Enteric fever Viral hepatitis Acid peptic disease Bone & Joint infection Meningitis Encephalitis STI

BLOCK 3 **10 weeks**	Diabetes mellitus Hepatitis (Sharing / Nesting)	Zoonotic disease Hospital acquired infection National health programs of communicable diseases	Diabetes mellitus Endocrines		Diabetes mellitus Zoonotic disease Hospital acquired infection National health programs of communicable diseases	Diabetes mellitus Zoonotic disease Hospital acquired infection Endocrines

- Beyond these topics, Institutions are free to integrate topics with concerned departments, wherever feasible.
- Minimum two of the suggested topics should be covered in each block

X. DISTRIBUTON OF ATTITUDE ETHICS AND COMMUNICATION SKILLS (AETCOM) MODULE

SI NO	MODULE	TOPIC	DEPARTMENT					No. of hours	Formative assessment	Summative assessment
			PA	MI	PH	CM	FM			
1	2.1	Foundation of communication				✓		5	✓	-
2	2.2	Foundation of bioethics					✓	2	-	✓
3	2.3	Health care as a right				✓		2	-	✓
4	2.4	Working in a health care team	✓					6	✓	-
5	2.5	Bioethics- case studies on patient autonomy and decision making (patient rights and shared responsibility in health care)			✓			6	✓	✓
6	2.6	Bioethics-Case studies on patient autonomy and decision making (refusal of care including do not resuscitate and withdrawal of lifeSupport)			✓			5	✓	✓
7	2.7	Bioethics- Case studies on patient		✓				5	✓	✓
		autonomy and decision making (consent for surgical procedures)								
8	2.8	What does it mean to be a family member of sick patient					✓	6	✓	✓

EVALUATION METHODOLOGY

Summative Assessment - An assessment conducted at the end of instruction to check how much the student has learnt.

Formative Assessment - An assessment conducted during the instruction with primary purpose of providing feedback for improving learning.

Internal Assessment - Range of assessments conducted by the teachers teaching a particular subject with the purpose of knowing what is learnt. Internal assessment can have both formative and summative functions.

Note - Assessment requires specification of measurable and observable entities. This could be in the form of whole tasks that contribute to one or more competencies or assessment of a competency per se. Another approach is to break down the individual competency into learning objectives related to the domains of knowledge, skills, attitudes, communication etc. and then assess them individually.

Scheduling of Internal Assessment - Done once in three months.

Theory IA can include: Written tests should have essay questions, short notes and MCQs.

Practical IA can include: Practical tests, Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), records maintenance and attitudinal assessment.

Assessment of Log-book- Log book should record all activities like seminar, symposia, quizzes and other academic activities. It should be assessed regularly and submitted to the department. Up to ten (10) per cent IA Practical marks should be for Log book assessment.

Assessment of Practical Record book- Practical book should record all skills and other practical exercises done during the academic programme. It should be assessed regularly and submitted to the department. Up to ten (10) per cent IA Practical marks should be for Practical record book assessment.

Assessment for AETCOM will include: - Written tests comprising of short notes and creative writing experiences only in internal assessment.

SUMMATIVE ASSESSMENT OR UNIVERSITY EXAMS

THEORY

GENERAL INSTRUCTIONS

1. The topics for the two papers are distributed
2. Questions in each paper will be as per distribution
3. The SLO needs to be referred while setting the question paper
4. Repetition of questions from the same SLO to be avoided
5. The marks allotted to the different topics & sections to be adhered.
6. Questions to be covered from the different sections of Microbiology
7. Main question needs to be structured questions with clinical history with marks allotted to each
8. As far as possible clinically oriented application-based questions to be framed

DISTRIBUTION OF TOPICS IN DIFFERENT PAPERS

Theory	Topics	Questions	Marks allotment
PAPER I	1.General microbiology & Immunology 2.CVS & Blood 3.Gastrointestinal & hepatobiliary system 4.Musculoskeletal system, Skin & soft tissue infections	Main Questions(MQ) Short Notes (SN) MCQ Total	2x15=30 10x5=50 20x1=20 100
PAPER II	5.Central Nervous system 6.Respiratory System 7.Genitourinary & Sexually Transmitted infections 8.Zoonotic diseases and Miscellaneous	Main Questions(MQ) Short Notes (SN) MCQ Total	2x15=30 10x5=50 20x1=20 100

PAPER 1

DISTRIBUTION OF MARKS FOR THE DIFFERENT TOPICS

Topics	Main Question	Short Notes	**MCQ**	**Marks**
General microbiology		2	2	**12**
Immunology		2	4	**14**
CVS & Blood	1 (only if no MQ from Skin)	1 OR 3 (if MQ is from skin)	4	**24**
GIT& hepatobiliary	1	2	6	**26**
Skin & soft tissue	1(only if no MQ from CVS)	1 OR 3(if MQ is from CVS)	4	**24**
	2	**10**	**20**	**100**

DISTRIBUTION FOR THE SECTIONS IN PAPER I

Topic	Main Question	Short Notes	MCQ	Total marks
General microbiology	-	2	3	13
Immunology	-	2	3	13
Bacteriology	1	2	3	28
Virology	1(only if no MQ from parasitology)	If MQ then NIL No MQ then 2	5	20
Parasitology	1(only if no MQ from Virology)	If MQ then NIL No MQ then 2	3	13
Mycology	Nil	2	3	13
	2	**10**	**20**	**100**

PAPER II

DISTRIBUTION OF MARKS FOR THE DIFFERENT TOPICS II

Topics	Main Qestion	Short Notes	MCQ	**Marks**
CNS 6.1-6.3	1(if not from genitourinary)	1 or 3(if MQ from genitourinary)	4	**24**
Respiratory system 7.1-7.3	1 (only if no MQ from zoonotic)	2 OR 4(if MQ is from zoonotic)	4	**24**
Genito Urinary Tract 7.1-7.3	1(only if no MQ from CNS)	1 or 3(if MQ from CNS)	4	**24**
Zoonotic 8.1	1(only if no MQ from RS)	1 OR 3(if MQ is from RS)	4	**19**
Miscellaneous 8.2 – 8.6	-	1	4	**09**
	2	**10**	**20**	**100**

DISTRIBUTION OF MARKS FOR DIFFERENT SECTIONS IN PAPER II

Topic	Main Question	Short Notes	MCQ	Total marks
Bacteriology	1	4	6	**41**
Virology	1	4	4	**39**
Parasitology	NIL	1	6	**11**
Mycology	NIL	1	4	**09**
	2	**10**	**20**	**100**

TOTAL DISTRIBUTION FOR DIFFERENT SECTIONS IN BOTH PAPERS

SECTION	**PAPER I**	**PAPER II**	**MARKS**
GEN.BACT	13	-	**13**
IMMUNOLOGY	13	-	**13**
BACTERIOLOGY	28	41	**69**
VIROLOGY	20	39	**59**
MYCOLOGY	13	09	**22**
PARASITOLOGY	13	11	**24**
	100	100	**200**

PRACTICAL ASSESSMENT

LIST OF INSTRUMENTS, SPECIMENS, SLIDES AND CHARTS

A .**SLIDES**

a. BACTERIOLOGY

1. Staphylococci
2. Streptococci
3. Pneumococci
4. Gonococci
5. Corynebacterium diphtheriae
6. Bacillus
7. Clostridium tetani
8. Mycobacterium tuberculosis
9. Mycobacterium leprae
10. Actinomyces

b. PARASITOLOGY

1. Plasmodium – ring form
2. Plasmodium – gametocyte form
3. Leishmania
4. Scolex of tape worm
5. Egg of tape worm
6. Egg of Ascaris
7. Egg of Ancylostoma
8. Larva of Strongyloides
9. Adult worm Enterobius vermicularis
10. Microfilaria
11. Hydatid cyst

c. MYCOLOGY

1. Candida
2. Cryptococcus
3. Aspergillus
4. Penicillium
5. Rhizopus /mucor
6. Dermatophytes
7. Mycetoma
8. Rhinosporidiosis

d. VIROLOGY

1. Polio vaccine
2. Negri body

B. MEDIA

1. Nutrient agar
2. Mac conkey agar
3. Blood agar
4. Chocolate agar
5. LJ media
6. Loefflers serum slope
7. Potassium tellurite
8. TCBS
9. Wilson & Blair
10. Urease test
11. Indole test
12. Citrate test
13. Antibiotic susceptibility test - KB method
14. RCMB
15. Thioglycollate

C. INSTRUMENT

1. Anaerobic jar
2. Sterile swab
3. Filters

D. SPECIMENS

1. Round worm
2. Hook worm
3. Taenia
4. Hydatid cyst

E. CLINICAL MICROBIOLOGY (Charts with case scenarios)

CASE SCENARIO- GENERAL INSTRUCTIONS

- The exercise should be associated with clinical history
- It should be designed and evaluated in such a way that the student will be able to discuss about the sample collection, interpretation of results & management of cases
- The organism needs to be emphasized in the particular exercise to be decided after referring the **SLO** table
- Case related slides, culture, AST, serological tests, photos, specimens should be displayed in the particular exercise so that student will have comprehensive approach to the clinical case

1. TOPIC- CVS & BLOOD

- Rheumatic fever
- Sepsis – role of sepsis markers
- Infective endocarditis
- HIV - serodiagnosis

2. TOPIC- GIT & HEPATOBILIARY

- Diarrhoeal disease – cholera,diarroheogenic E.coli,diarrhoea in immunocmpromised host, Food poisoning
- Dysentery – bacillary
- Viral gastro enteritis
- Lab diagnosis of Enteric fever (pathogen isolation)
- Lab diagnosis of Enteric fever (serological diagnosis)
- Virology exercise Seromarkers of Hepatitis B, Hepatitis C

3.TOPIC – SKIN & SOFT TISSUE INFECTIONS

- Cellulitis (Streptococcus pyogenes)
- Surgical site infection
- Burns wound infection (Pseudomonas)
- Osteomyelitis & Infective arthritis
- Dermatophytoses - tineacorporis, tineacapitis, onchycomycosis
- Viral exanthematous fever
- Mycetoma

4.TOPIC-CNS INFECTIONS

- Rabies
- Hydatid cyst, Neurocysticercosis
- Cerebral malaria
- Meningitis -.

    i)Pyogenic meningitis

    ii) Neonatal meningitis

    iii)Tubercular meningitis

    iv) Cryptococcal meningitis

- Cerebral abscess

5.TOPIC- RESPIRATORY SYSTEM INFECTIONS

- Otitis media -Proteus, aspergillus
- White patch in oral cavity
- Influenza
- Pul. Aspergillosis
- Pneumonia –

    i. Community Acquired Pneumonia
    ii. Hospital Acquired pneumonia
    iii. Ventilator Associated Pneumonia

6. TOPIC-GENITO URINARY SYSTEM INFECTIONS

- **STI**

    i. Ulcerative lesions in the external genitalia

    ii. Discharge per vagina

- **UTI**
- **CAUTI**

7. TOPIC- ZOONOTIC & MISCELLANEOUS

- PUO – serological diagnosis

i. Brucellosis
ii. Leptospirosis
iii. Typhus fever

- Dengue, Chikungunya
- Candidiasis
- Mucromycosis

8. OSPE

- Hand hygiene and selection; Donning & doffing of PPE for a given 3 different situation (thrice)
- Segregate biomedical waste as per BMW2016 rules
- Collection of throat swab, nasopharyngeal swab in simulated situation
- Collection of peripheral venous blood for culture in simulated situation
- Collection of wound swab and pus sample in simulated situation
- Instruct sample collection procedure (sputum, urine, stool,for culture)
- skin scraping, hair clippings and nail samples) collection procedure independently in a simulated setting

AETCOM

- Demonstrating respect to patient samples -OSPE (AETCOM)
- Advice a HCW with needle stick injury in complete and correct sequence in a simulated setting - AETCOM
- Instruct a ward boy - how to manage bio-spill in a simulated setting (AETCOM)

PRACTICAL ASSESSMENT

As per MCI 100 marks with viva

- Practical – 80
- Viva – 20

DISTRIBUTION OF MARKS FOR DIFFERENT EXERCISES

Exercise	Number	Marks
Spotters	10	10
Gram's stain	1	10
ZN/Alberts stain	1	10
Stool examination	1	10
Case scenario	1 Bacteriology/ Virology 1 Parasitology/Mycology	15 15
OSPE & AETCOM	1+1	10
VIVA		20
TOTAL		**100**

SPOTTERS DISTRIBUTION

Section	Number
General microbiology	2
Immunology	1
Bacteriology	2
Virology	1
parasitology	2
Mycology	2
TOTAL	10

II. STAINING

1. Gram's

2. ZN/Alberts

3. Stool examination

III. CLINICAL BACTERIOLOGY/VIROLOGY CASE

SCENARIO- GENERAL INSTRUCTIONS

- The exercise should be associated with clinical history
- The history should be provided with relevant tests which will help the student to arrive at diagnosis
- It should be designed and evaluated in such a way that the student will be able to discuss about the sample collection, interpretation of results & management of cases

BACTERIOLOGY	**VIROLOGY**
Cardio vascular system & blood Rheumatic fever,endocarditis,sepsis	HIV
GIT & HB Diarrhoea- cholera, food poisoning Dysentery – bacillary Enteric fever- culture based, serological	Hepatitis A, Hepatitis B, hepatitis C
Skin & soft tissue infections-cellutitis,SSI, burns wound infection, bone and joint infection	Viral exanthematous fever- Measles, Zoster, Dengue, chikungunya
CNS- meningitis- pyogenic, tubercular, neonatal	Rabies,

Cerebral abcess	
RS- otitis media,white patch in the oral cavity Pneumonia- community acquired,hospital acquired	Inflenza.corona
UTI & genitourinary STI- ulcerative , discharge UTI- community Acquired, Catheter associated	HSV, HPV
Zoonotic – PUO- brucella,Leptospira,Rickettssia	

MYCOLOGY & PARASITOLOGY

Mycology	**Parasitology**
Dermatophytosis-corporis, capitis, onychomycosis	Amoebic dysentery
Candida- mucocutaneous/systemic	Malaria – vivax,falciparum
Cryptococcus-meningitis	Intestinal helminthiasis- Ascaris,Ancyloastoma,Enterobius etc
Mycetoma	Intestinal protozoan – diarrohea in immunocompromised
Pulmonary aspergillosis	Neurocysticercosis
Mucoromycosis	Filariasis
Pneumocystis pneumonia	

IV .OSPE

- Hand hygiene and selection; Donning & doffing of PPE for a given 3 different situations
- Segregate biomedical waste as per BMW2016 rules
- Collection of throat swab, nasopharyngeal swab in simulated situation
- Collection of peripheral venous blood for culture in simulated situation
- Collection of wound swab and pus sample in simulated situation
- Instruct sample collection procedure (sputum, urine, stool,for culture)
- Skin scraping, hair clippings and nail samples) collection procedure independently in a simulated setting

AETCOM

- Demonstrating respect to patient samples -OSPE (AETCOM)
- Advice a HCW with needle stick injury in complete and correct sequence in a simulated setting (Remove from HIV, CVS) - AETCOM
- Instruct a wardboy - how to manage bio-spill in a simulated setting (AETCOM)

LIST OF BOOKS

1. Apurba Sastry and Sandhya Bhat; Essentials of Medical Microbiology,3rd Edition,2021
2. Lippincott Illustrated Reviews Microbiology,South Asian Edition by Cynthia Nau Cornelissen

   ,Marcia Metzgar Hobbs SAE editors Sumathi Muralidharan & Rohith Chawla As per CBME
3. Ananthnaryan & Panikar's Text Book of Microbiology 11th Edition. edited by Reba Kanungo
4. Basic Medical Microbiology Patric R Murray
5. Roitt's Essential Immunology Peter J ,Delves Seamus J. Martin Dennis R Burton Ivan M Roitt
6. Apurba Sastry and Sandhya Bhat; Essentials of Practical Microbiology,3rd Edition,2021
7. K D Chatterjee Parasitology Protoazoology and Helminthology 13th edition 2019
8. C K Jayaram Panicker Panicker's text Book of Medical Parasitology 8Th edition
9. Text book of Medical parasitology by Subhash Chandra Parija

REFERENCE BOOKS

1. Apurba Sastry and Sandhya Bhat; Essentials of hospital infection control 1st Edition,2019
2. Mandell, Douglas,and Bennett's Principles and practice of Infectious diseases
3. Harrison's principles of internal Medicine
4. Essentials of Clinical infectious diseases –William F Wright

DEPARTMENT OF COMMUNITY MEDICINE

PREAMBLE

Community Medicine plays a key role in the making of an Indian Medical Graduate going by the goals and role attributes envisaged by Medical Council of India. The sheet anchor nature of this speciality in moulding the IMG across the MBBS course provides scope and opportunity for us to train the student in preventive, promotive, curative, and rehabilitative aspects with seamless integration with other disciplines.

Community medicine is the umbrella of medicine which connects the dots together. It is the enterprise of responsibility, a living embodiment of what it means to be human and watch the true face of human suffering in all its fullness. This branch has evolved to a great extent with the addition of many interdisciplinary components and is now conferred the status of 'clinical speciality' by medical council of India which was long overdue.

Community medicine equips the IMG in 'community-oriented health care' encompassing community education, networking, advocacy, policy, research, and of course clinical care at primary and secondary level. This myriad nature of our speciality requires holistic training at the undergraduate level. With more specific and objective training in community medicine as per competency framework will bolster the philosophy and practice of 'holistic care' which will help bridge the changing paradigm of 'health for all' to 'universal health coverage'.

The new Graduate Medical Education Regulations provides for an outcome driven undergraduate curriculum, to provide the orientation and the skills necessary for life-long learning, to enable proper care of the patient. The undergraduate medical curriculum has thus evolved from being teacher-centered to student centered, from discipline-based to integrated core and options-based and from passive acquisition of knowledge imparted by teachers to active problem-based learning. Skill acquisition is an indispensable component of the learning process in modern medicine. However, the need for development of professional attitude, behaviour and communication skills befitting a medical practitioner is well perceived and emphasized by the new curriculum with incorporation of AETCOM sessions.

GOALS AND OBJECTIVES

GOAL: The broad goal of the teaching of undergraduate students in Community Medicine is to prepare them to function as community and first level physicians in accordance with the institutional goals.

OBJECTIVES

a) KNOWLEDGE

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

1) Describe the health care delivery system including rehabilitation of the disabled in the country;
2) Describe the National Health Programmes with particular emphasis on maternal and child health programmes, family welfare planning and population control.
3) List epidemiological methods and describe their application to communicable and non-communicable diseases in the community or hospital situation.
4) Apply bio-statistical methods and techniques.
5) Outline the demographic pattern of the country and appreciate the roles of the individual, family, community and socio-cultural milieu in health and disease.
6) Describe the health information systems.
7) Enunciate the principles and components of primary health care and the national health policies to achieve the goal of 'Health for All'.
8) Identify the environmental and occupational hazards and their control.
9) Describe the importance of water and sanitation in human health.
10) To understand the principles of health economics, health administration, health education in relation to community.

b) **SKILLS** At the end of the course, the student should be able to: -

1) Use epidemiology as a scientific tool to make rational decisions relevant to community and individual patient intervention.

2) Collect, analyse, interpret, and present simple community and hospital-based data.

3) Diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources and in the context of the prevailing socio-cultural beliefs.

4) Diagnose and manage maternal and child health problems and advise a couple and

the community on the family planning methods available in the context of the national priorities.

5) Diagnose and manage common nutritional problems at the individual and community level.

6) Plan, implement and evaluate a health education programme with the skill to use simple audio-visual aids.

7) Interact with other members of the health care team and participate in the organisation of health care services and implementations of national health programmes.

C) ETHICS, ATTITUDE AND COMMUNICATION:

1) Demonstrate ability to communicate and counsel patients and their families in a patient, respectful, nonthreatening, non- judgmental and empathetic manner

2) Apply fundamental principles of bioethics such as beneficence, non- maleficence and justice in patient care and community development
3) Promote autonomy and shared responsibility as a guiding principle in health seeking and patient care especially in reproductive health, family planning and management of diseases
4) Demonstrate justice as a guiding principle in encounters with patients and their families especially in mental illnesses, socially isolated communities and diseases such as HIV, leprosy and others.
5) Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers
6) Demonstrate empathy for patients.
7) Demonstrate an understanding of the implications and the appropriate procedure and response to be followed in the event of medical errors such as adverse events following immunization, improper bio-medical waste management.
8) Appropriately address queries of patients and their families attending a health facility regarding disease control measures and national health schemes
9) Administer informed consent and ensure confidentiality in patient care and health related research

10) Demonstrates ability to maintain required documentation in health care (including correct use of medical records)

D) INTEGRATION:

Develop capabilities of synthesis between cause of illness in the environment or community and individual health and respond with leadership qualities to institute remedial measures for this.

EXPLANATION OF TERMS USED IN THE MANUAL

1. LECTURE

Any instructional large group method including traditional lecture and interactive lecture.

2. SMALL GROUP DISCUSSION

Any instructional method involving small groups of students in an appropriate learning context.

3. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning, choosing and implementing appropriate learning methods.

4. FIELD VISIST

Any visit to an organization of public health importance to observe its functioning. It may also include visits to community for family study / clinic-social case discussion.

5. SKILL ASSESSMENT

A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients or **in the community/ field** as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know.

SUGGESTED GUIDELINES FOR THE TEACHING AND LEARNING METHODS

LECTURE:

Suggested topics for didactic and interactive lectures have been included along with specific learning objectives linked to each competency. Lectures should cover the core competencies with appropriate pictures, charts, or diagrams.

SMALL GROUP DISCUSSION:

The topics for small group discussion that have been suggested, these topics included are those where more intensive and interactive learning sessions are required.

SELF DIRECTED LEARNING:

Non-core competencies are suggested to be taken as topics for self-directed learning. At the end of the session, the teacher moderates the discussion and the learning is recorded in the logbook.

PRACTICAL DEMONSTRATION

Practical classes will include demonstration and discussion on topics of public health importance. All sessions will have specific learning objectives which are linked to the relevant competencies and are assessed as described in the assessment module.

All sessions will be done with the faculty as facilitator.

The students will be encouraged to observe the demonstrations and perform the requisite skills either independently or with assistance as required. Emphasis will be on acquiring relevant skills at the field level and clinically. Thus,case-based learning and discussions will be encouraged.

FIELD VISIST

Any visit to an organization of public health importance to observe its functioning. These may include visit to PHC, Anganwadi, DOTS Centre, Hospital Waste Management Facility, Water Treatment Plant, ART / ICTC Centre

It may also include visits to community for family study / clinic social case discussion.

BEDSIDE CLINICO SOCIAL CASE DISCUSSIONS:

Is teaching clinico-social aspects of disease and communication skills in the presence of a patient.

FAMILY STUDY:

Students visit families in the community to understand the association of various environmental factors, socio-economic factors and the psychological or emotional factors with the health and disease of the family.

DOAP:

A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently.

RESEARCH PROJECT:

This teaching-learning method involves eight steps: question, hypothesis, objectives, review of literature, methodology, results (data and analysis), discussion, and conclusion

PHASE II MBBS, PART 1

MINIMUM TEACHING HOURS IN 2nd Year

Sl No	**Topic**	**Number of competencies**	**Lecture**	**SGD/ Tutorial DOAP**	**SDL**	**Total Hrs**
6	Epidemiology	9 (19 SLOs)	9	8	2	19
7	Occupational Health	5 (14 SLOs)	3	1	1	5
8	Nutrition	6 (33 SLOs)	2	4	1	7
9	Disaster Management	4 (7 SLOs)	2	0	2	4
10	International Health	2 (6 SLOs)	2	0	0	2
11	Environmental Health Problems	8 (37 SLOs)	2	14	2	18
12	Mental Health	3 (5 SLOs)	0	2	1	3
13	Essential Medicines	3 (5 SLOs)	0	1	1	2
	Total	40 (126 SLOs)	**20**	**30**	**10**	**60**
14	AETCOM Module 2.1&2.3		8			

Topic: Epidemiology
Number of Competencies: 9
Number of procedures for certification:
Total number of hours required: 19

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
CM7.1	**Define Epidemiology and describe and enumerate the principles, concepts and uses**							
CM7.1.1	At the end of this session, students must be able to define Epidemiology and describe and the principles of Epidemiology	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.1.2	At the end of this session, students must be able to discuss Epidemiological approach	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.1.3	At the end of this session, students must be able to dnlist and discuss uses of Epidemiology	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.2	**Enumerate, describe and discuss the modes of transmission and measures for prevention and control of communicable and non communicable diseases**							

CM7.2.1	At the end of this session, students must be able to enumerate, describe and discuss the modes of transmission of a disease	K	KH	Y	2	Small group discussion, Lecture	Small group	General Medicine
CM7.3	**Enumerate, describe and discuss the sources of epidemiological data**							
CM7.3.1	At the end of this session, students must be able to enumerate, describe and discuss the sources of epidemiological data	K	SH	Y	2	Small group discussion, Lecture	discussion, Lecture	
CM7.4	**Define, calculate and interpret morbidity and mortality indicators based on given set of data**							
CM7.4.1	At the end of this session, students must be able to enlist and define different mortality and morbidity indicators.	S	SH	Y	2	Small group, DOAP sessions	Small group, DOAP sessions	
CM7.4.2	At the end of this session, students must be able to calculate and interpret different mortality indicators based on given set of data	S	SH	Y	2	Small group, DOAP sessions	Small group, DOAP sessions	
CM7.5	**Enumerate, define, describe and discuss epidemiological study designs**							

CM7.5.1	At the end of this session, students must be able to classify various epidemiological study designs	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.5.2	At the end of this session, students must be able to describe Descriptive Epidemiology with suitable examples?	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.5.3	At the end of this session, students must be able to discuss the steps involved in conducting case control study and what are the advantages and disadvantages of a case control study.	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.5.4	At the end of this session, students must be able to discuss the steps involved in conducting Cohort study and what are the advantages and disadvantages of a Cohort study.	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.5.5	At the end of this session, students must be able to discuss the steps involved in conducting Randomized control trail and discuss non randomized trail	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.6	**Enumerate and evaluate the need of screening tests**							
CM7.6.1	At the end of this session, students must be able to enlist different types of screening and discuss the uses of screening tests	S	SH	Y	2	Small group discussion, DOAP sessions	Small group, DOAP	S

CM7.6.2	At the end of this session, students must be able to discuss the validity and reliability of a screening test.	S	SH	Y	2	Small group discussion, DOAP sessions	Small group, DOAP	S
CM7.7	**Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures**							
CM7.7.1	At the end of this session, students must be able to describe and demonstrate the steps in the Investigation of an epidemic of communicable disease	S	SH	Y	2	Small group discussion, DOAP sessions	sessions	Microbiology
CM7.7.2	At the end of this session, students must be able to describe the principles of control measures	S	SH	Y	2	Small group discussion, DOAP sessions	sessions	Microbiology
CM7.8	**Describe the principles of association, causation and biases in epidemiological studies**							
CM7.8.1	At the end of this session, students must be able to describe the principles of association in epidemiological studies and discuss different criteria used to asses causation of a disease	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.8.2	At the end of this session, students must be able to define the term bias and discuss different types of bias with suitable examples.	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	

CM7.9	**Describe and demonstrate the application of computers in epidemiology**							
CM7.9.1	At the end of this session, students must be able to enlist different statistical software and demonstrate their use in analysis of data	S	KH	Y	2	Small group discussion, DOAP sessions	Small group, DOAP sessions	

Topic: Occupational health
Number of Competencies: 5
Number of procedures for certification:
Total number of hours required: 5

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
CM11.1	**Enumerate and describe the presenting features of patients with occupational illness including agriculture**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.1.1	At the end of the session, phase 2 students must be able to enumerate the various occupational illnesses.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.1.2	At the end of the session, phase 2 students must be able to describe the presenting clinical features of the patients.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	

CM11.1.3	At the end of the session, phase 2 students must be able to explain the treatment modality of mentioned occupational illnesses.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.2	**Describe the role, benefits and functioning of the employees state insurance scheme**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.2.1	At the end of this session, the phase II students must be able to tell about the role of employee's state insurance scheme correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.2.2	At the end of this session, the phase II students must be able to describe the benefits of employee's state insurance scheme correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.2.3	At the end of this session, the phase II students must be able to discuss the functioning of employee's state insurance scheme correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3	**Enumerate and describe specific occupational health hazards, their risk factors and preventive measures**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.1	At the end of this session the phase II students must be able to enumerate are the occupational hazards specifically.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	

CM 11.3.2	At the end of this session, the phase II students must be able to describe the occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.3	At the end of this session, the phase II students must be able to enumerate the risk factors of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.4	At the end of this session, the phase II students must be able to describe the risk factors of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.4	At the end of this session, the phase II students must be able to enumerate the preventive measures of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.3.5	At the end of this session, the phase II students must be able to describe the preventive measures of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.4	**Describe the principles of ergonomics in health preservation**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.4.1	At the end of this session, the phase II students must be able to describe the principles of ergonomics used for health preservation correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	

CM11.5	**Describe occupational disorders of health professionals and their prevention & management**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.5.1	At the end of this session, the phase II students must be able to describe the occupational disorders of health professionals correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.5.2	At the end of this session, the phase II students must be able to discuss the prevention and management of occupational disorders of health professionals correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	

Topic: Nutrition

Number of Competencies: 6

Number of procedures for certification:

Total number of hours required: 7

	Competency	**Domain K/S/ A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Phase 1/2/3**	**Teaching -Learning Method**	**Assessment Method**	**Integration**
CM 5.3	**Define and describe common nutrition related health disorders (including macro-PEM, Micro-iron, Zn, iodine, Vit. A), their control and management**							
CM 5.3.1	At the end of this session, students must be able to list the common nutrition related health disorders	K	K	Y	2	Interactive lecture	Written exam/Viva	General Medicine /Paediatrics

CM 5.3.2	At the end of this session, students must be able to enumerate the different indicators used to classify PEM	K	KH	Y	2	Interactive lecture	Written exam/Viva	General Medicine /Paediatrics
CM 5.3.3	At the end of this session, students must be able to discuss the clinical features of PEM	K	KH	Y	2	Interactive lecture	Written exam/Viva	General Medicine /Paediatrics
CM 5.3.4	At the end of this session, students must be able to discuss the preventive measures and management of PEM	K	KH	Y	2	Interactive lecture	Written exam/Viva	
CM 5.3.5	At the end of this session, students must be able to discuss the signs and symptoms of anemia	K	KH	Y	2	Practical demo	Written exam/Viva	Paediatrics
CM 5.3.6	At the end of this session, students must be able to discuss the preventive measures of iron deficiency anaemia.	K	KH	Y	2	Interactive Lecture	Written exam/Viva	General Medicine
CM 5.3.7	At the end of this session, students must be able to describe the spectrum of iodine deficiency disorder	K	KH	Y	2	Interactive Lecture	Written exam/Viva	General Medicine
CM 5.3.7	At the end of this session, students must be able to describe the control measures for IDD in reference to NIDDCP	K	KH	Y	2	Interactive Lecture	Written exam/Viva	General Medicine

CM 5.3.8	At the end of this session, students must be able to describe clinical manifestations of Vitamin A deficiency	K	KH	Y	2	Interactive Lecture with video	Written exam/Viva	Paediatrics
CM 5.3.9	At the end of this session, students must be able to discuss the prevention of Vitamin A deficiency with reference to Vit A prophylaxisprogram	K	KH	Y	2	Interactive Lecture	Written exam/Viva	
CM 5.3.10	At the end of this session, students must be able to discuss briefly the prevention of Zinc deficiency	K	KH	Y	2	Interactive Lecture	Written exam/Viva	
CM 5.4	**Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment**							
CM 5.4.1	At the end of this session, students must be able to plan a balanced diet chart for a pregnant female belonging to low socio economic status with locally available foods.	S	SH	Y	2	SGD	OSCE	General Medicine /Paediatrics
CM 5.4.2	At the end of this session, students must be able to prepare a diet chart for a 4year old male child with PEM belonging to low socio economic status with locally available foods.	S	SH	Y	2	SGD	OSCE	
CM 5.4.3	At the end of this session, students must be able to prepare a diet chart for a lactating female of 30 years with locally available foods with	S	SH	Y	2	SGD	OSCE	

	locally available foods							
CM 5.4.4	At the end of this session, students must be able to prepare a diet chart for an adolescent female who is anaemic with locally available foods.	S	SH	Y	2	SGD	OSCE	
CM 5.4.5	At the end of this session, students must be able to prepare a diet chart to an obese man belonging to higher socio economic status and with family history of hypertension	S	SH	Y	2	SGD	OSCE	
CM 5.4.6	At the end of this session, students must be able to prepare a diet chart for a family of 5 from lower socioeconomic status using the consumption units	S	SH	Y	2	SGD	OSCE	
CM 5.5	**Describe the methods of nutritional surveillance, principles of nutritional education and rehabilitation in the context of sociocultural factors**							
CM 5.5.1	At the end of this session, students must be able to describe briefly the important components of Nutritional Surveillance	K	KH	Y	2	Interactive lecture	Written exam/Viva	Paediatrics
CM 5.5.2	At the end of this session, students must be able to differentiate between nutritional monitoring and nutritional surveillance	K	KH	Y	2	Interactive lecture	Written exam/Viva	

CM 5.5.3	At the end of this session, students must be able to describe briefly the principles of Nutritional Education with special emphasis on locally available foods	K	KH	Y	2	Interactive lecture	Written exam/Viva	General Medicine
CM 5.5.4	At the end of this session, students must be able to describe briefly the principles of Nutritional Rehabilitation Keeping in mind the prevalent local socio cultural factors and according to the national program.	K	KH	Y	2	Interactive lecture	Written exam/Viva	
CM 5.6	**Enumerate and discuss the National Nutrition Policy, important national nutritional Programs including the Integrated Child Development Services Scheme (ICDS) etc**							
Cm 5.6.1	At the end of this session, students must be able to discuss briefly the objectives and intervention strategies of the National nutrition Policy, 1993.	K	KH	Y	2	Interactive Lecture	Written exam/Viva	
CM 5.6.2	At the end of this session, students must be able to discuss briefly the objectives and services provided by Integrated Child Development Services Scheme (ICDS) in the community.	K	KH	Y	2	SGT, Field visit	Written exam/Viva	Paediatrics
CM 5.6.3	At the end of this session, students must be able to discuss briefly the objectives and services provided under The National Nutrition Mission 2017	K	KH	Y	2	SGT, Seminar	Written exam/Viva	

CM 5.6.4	At the end of this session, students must be able to discuss briefly the objectives and services provided under Balawadi Nutritional program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.5	At the end of this session, students must be able to discuss briefly the Vit A Prophylaxis Program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.6	At the end of this session, students must be able to discuss briefly the National nutritional Anemia prophylaxis program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.7	At the end of this session, students must be able to discuss briefly the IDD control program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.8	At the end of this session, students must be able to discuss briefly the Mid-day meal scheme and mid day meal program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM5.7	**Describe food hygiene**							
CM5.7.1	At the end of this session, students must be able to what is food hygiene and describe different components of food hygiene.	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	Microbiology
CM5.8	**Describe and discuss the importance and methods of food fortification and effects of additives and adulteration**							

CM5.8.1	At the end of this session, students must be able to define and enlist the methods of food fortification	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	
CM5.8.1.2	At the end of this session, students must be able to describe and discuss the importance of food fortification	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	
CM5.8.1.3	At the end of this session, students must be able to what are food additives and what are their effects on health.	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	
CM5.8.1.4	At the end of this session, students must be able to what are the effects of food adulteration?	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	

Topic: Disaster management
Number of Competencies: 4
Number of procedures for certification:
Total number of hours required: 4

	Competency	**Domain K/S/ A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Phase 1/2/3**	**Teaching -Learning Method**	**Assessment Method**	**Integration**
C.M 13.1	**Define and Describe the concept of Disaster Management**							**-**

C.M 13.1.1	At the end of this session, students must be able to list the types of disaster	K	KH	Y	3	Lecture	Written / Viva Voice	-
C.M 13.1.2	At the end of this session, students must be able to describe the occurrence global and in India	K	KH	Y	3	Lecture	Written / Viva Voice	-
C.M 13.2	**Discuss the Disaster management with disaster cycle**							-
C.M 13.2.1	At the end of this session, students must be able to discuss how disaster is managed with the help of Disaster cycle	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	
C.M 13.3	At the end of this session, students must be able to describe manmade disaster in the world and in india							
C.M 13.3.1	At the end of this session, students must be able to explain manmade disaster	K	KH	Y	3	Lecture	Written / Viva Voice	-
CM 13.4	**Describe the details of the National Disaster Management Authority**							

C.M 13.4.1	At the end of this session, students must be able to describe the Natural disaster	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-
C.M 13.4.2	At the end of this session, students must be able to list the objectives and strategies under National disaster management per.2016	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-
C.M 13.4.3	At the end of this session, students must be able to describe the role of NDMA in disaster management.	K	KH	Y	3	Lecture	Written / Viva Voice	-

Topic: International Health
Number of Competencies: 2
Number of procedures for certification:
Total number of hours required: 2

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
18.1	**Define and describe the concept of International Health.**							
18.1.1	At the end of this session, students must be able to define the concept of International Health.	K	K	Y	3	Lecture	Theory & Viva voce	
18.1.2	At the end of this session, students must be able to describe history and concept of International Health.	K	K	Y	3	Lecture	Theory & Viva voce	

18.2	**Describe roles of various international health agencies.**							
18.2.1	At the end of this session, students must be able to describe the structure and work of World Health Organization.	K	K	Y	3	Lecture	Theory & Viva voce	
18.2.2	At the end of this session, students must be able to describe content of services given by UNICEF.	K	K	Y	3	Lecture	Theory & Viva voce	
18.2.3	At the end of this session, students must be able to describe work of other United Nations agencies such as UNDP, UN Fund for Population Activities, FAO, ILO and World Bank.	K	K	Y	3	Lecture	Theory & Viva voce	
18.2.4	At the end of this session, students must be able to describe work of Bilateral agencies and Non-governmental agencies.	K	K	Y	3	Lecture	Theory & Viva voce	

Topic: Environmental health problems
Number of Competencies: 8
Number of procedures for certification:
Total number of hours required: 18

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
CM3.1	**Describe the health hazards of air, water, noise, radiation and pollution**							
CM3.1.1	At the end of this session, the phase I students must be able to discuss the health hazards of air pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT
CM3.1.2	At the end of this session, the phase I students must be able to discuss the health hazards of water pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT
CM3.1.3	At the end of this session, the phase I students must be able to discuss the health hazards of noise pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT
CM3.1.4	At the end of this session, the phase I students must be able to discuss the health hazards of radiation pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT

CM3.2	**Describe concept of safe & wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting**							
CM3.2.1	At the end of this session, students must be able to define safe & wholesome water	K	K	Y	1	LGD	Written exam/Viva	
CM3.2.2	At the end of this session, students must be able to Enumerate the various sources of water supply	K	K	Y	1	LGD	Written exam/Viva	
CM3.2.3	At the end of this session, students must be able to describe large scale water purification processes	K	KH	Y	1	SG Field visit	Written exam/Viva	
CM3.2.4	At the end of this session, students must be able to describe small scale water purification processes	K	KH	Y	1	LGD	Written exam/Viva	
CM3.2.5	At the end of this session, students must be able to Enumerate the criteria and standards for drinking water quality	K	K	Y	1	SGD, Seminar	Written exam/Viva	
CM3.2.6	At the end of this session, students must be able to describe the concept of water conservation and methods	K	KH	Y	1	SGD, Seminar	Written exam/Viva	

CM3.2.7	At the end of this session, students must be able to explain rain water harvesting	K	K	Y	1	SGD, Field visit	Written exam/Viva	
CM 3.3	**Describe the aetiology and basis of water borne diseases/jaundice, hepatitis/diarrheal diseases**							
CM 3.3.1	At the end of this session, students must be able to describe etiology of water borne diseases due to biological and chemical agents	K	KH	Y	1	Lecture	Written exam/Viva	Microbiology
CM 3.3.2	At the end of this session, students must be able to describe importance of “faeco-oral route “ of transmission.	K	KH	Y	1	Lecture	Written exam/Viva	Microbiology
CM 3.3.3	At the end of this session, students must be able to describe transmission of diseases such as jaundice/viral hepatitis/rota virus diarrhea and polio	K	KH	Y	1	Lecture	Written exam/Viva	Microbiology
CM 3.4	**Describe the concept of solid waste, human excreta and sewage disposal**							
CM 3.4.1	At the end of this session, students must be able to define solid wastes	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.2	At the end of this session, students must be able to enumerate sources of solid waste	K	K	Y	1	Lecture	Written exam/Viva	

CM 3.4.3	At the end of this session, students must be able to differentiate between degradable and non-degradable and recyclable solid waste	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.4.4	At the end of this session, students must be able to enumerate methods of storage/ collection/ transportation and final disposal of solid wastes	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.5	At the end of this session, students must be able to describe features of “sanitary latrine”, “septic tank” and “soakage pit”	K	KH	Y	1	SGD, Field visit	Written exam/Viva	
CM 3.4.6	At the end of this session, students must be able to enumerate type of latrines suitable for sewered and non-seweredareas.	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.7	At the end of this session, students must be able to enumerate “composting methods” & differentiate between Aerobic & non Aerobic	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.8	At the end of this session, students must be able to describe a “water carriage system”/ “sewerage system”	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.5	**Describe the standards of housing and the effect of housing on health**							

CM 3.5.1	At the end of this session, students must be able to describe standards of an “Ideal Housing”	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.5.2	At the end of this session, students must be able to enumerate diseases due to over-crowding & Indoor pollution	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.5.3	At the end of this session, students must be able to describe hazards of poor housing	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.5.4	At the end of this session, students must be able to describe diseases associated with high rise buildings	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.6	**Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program**							
CM 3.6.1	At the end of this session, students must be able to enumerate “Vector borne diseases	K	K	Y	2	Lecture	Written exam/Viva	Microbiology
CM 3.6.2	At the end of this session, students must be able to describe different components vector borne disease control Programs	K	KH	Y	2	Lecture	Written exam/Viva	Microbiology

CM 3.7	**Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures**							
CM 3.7.1	At the end of this session, students must be able to identify common vectors of public health importance	K	K	Y	2	SGD	OSPE	
CM 3.7.2	At the end of this session, students must be able to describe the different stages of "Life Cycle" of common vector	K	KH	Y	2	SGD	Written exam/Viva	
CM 3.7.3	At the end of this session, students must be able to describe methods of control of vectors of public health importance	K	KH	Y	2	SGD, Seminar	Written exam/Viva	
CM 3.8	**Describe the mode of action, application cycle of commonly used insecticides and rodenticides.**							
CM 3.8.1	At the end of this session, students must be able to classify insecticides	K	K	Y	2	SGD	Written exam/Viva	Pathology
CM 3.8.2	At the end of this session, students must be able to enumerate the properties of an ideal insecticide	K	K	Y	2	SGD	Written exam/Viva	Pathology
CM 3.8.3	At the end of this session, students must be able to describe the mode of action and application of common insecticides.	K	KH	Y	2	SGD	Written exam/Viva	Pathology

CM 3.8.5	At the end of this session, students must be able to classify rodenticides	K	K	Y	2	SGD	Written exam/Viva	Pathology
CM 3.8.6	At the end of this session, students must be able to describe mode of action and application of common rodenticides	K	KH	Y	2	SGD	Written exam/Viva	Pathology

Topic: Mental health
Number of Competencies: 3
Number of procedures for certification:
Total number of hours required: 3

	Competency	**Domain K/S/ A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Phase 1/2/3**	**Teaching -Learning Method**	**Assessment Method**	**Integration**
C.M 15.1	**Define and describe the concept of mental health**							
C.M 15.1.1	At the end of this session, students must be able to define mental health.	K	KH	Y	3	Lecture	Written / Viva Voice	Horizontal/ Vertical Psychiatry
C.M 15.1.2	At the end of this session, students must be able to enumerate and describe causes of mental health disorders.	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry

C.M 15.1.3	At the end of this session, students must be able to describe the types of mental illness/disorders	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry
C.M 15.2	**Describe warning signals of mental health disorder**							
C.M 15.2.1	At the end of this session, students must be able to enlist and describe warning signals of mental health disorders	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry
C.M 15.3	**Describe National Mental Health Program**							
C.M 15.3.1	At the end of this session, students must be able to describe objectives and strategies of National mental health programme.	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry

Topic: Essential medicines
Number of Competencies: 3
Number of procedures for certification:
Total number of hours required: 2

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
19.1	**Define and describe the concept of Essential Medicine List (EML).**							
19.1.1	At the end of this session, students must be able to define the concept of Essential medicines.	K	K	Y	3	Lecture	Theory & Viva voce	
19.1.2	At the end of this session, students must be able to describe the concept of essential medicines.	K	K	Y	3	Lecture	Theory & Viva voce	
19.2	**Describe roles of essential medicine in primary health care.**							
19.2.1	At the end of this session, students must be able to describe the role of essential medicine in primary health care.	K	K	Y	3	Lecture	Theory & Viva voce	
19.3	**Describe counterfeit medicine and its prevention.**							
19.3.1	At the end of this session, students must be able to what is counterfeit medicine?	K	K	Y	3	Lecture	Theory & Viva voce	
19.3.2	At the end of this session, students must be able to describe prevention of counterfeit medication.	K	K	Y	3	Lecture	Theory & Viva voce	

DEPARTMENT OF COMMUNITY MEDICINE
INTEGRATED TEACHING TOPICS

Number	Competency	Vertical Integration	Horizontal Integration
CM3.1	Describe the health hazards of air, water, noise, radiation and pollution	General Medicine, ENT	-
CM3.3	Describe the aetiology and basis of water borne diseases /jaundice/hepatitis/ diarrheal diseases	Microbiology, General Medicine, Paediatrics	-
CM3.6	Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program	Microbiology	-
CM3.7	Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures	Microbiology	-
CM3.8	Describe the mode of action, application cycle of commonly used insecticides and rodenticides	Pharmacology	-
CM5.3	Define and describe common nutrition related health disorders (including macro-PEM, Micro-iron, Zn, iodine, Vit. A), their control and management	General Medicine, Paediatrics	-
CM5.4	Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment	General Medicine, Paediatrics	-
CM5.5.	Describe the methods of nutritional surveillance, principles of nutritional education and rehabilitation in the context of socio cultural factors	General Medicine, Paediatrics	-
CM5.6	Enumerate and discuss the National Nutrition Policy, important national nutritional Programs including the Integrated Child Development Services Scheme (ICDS) etc	Paediatrics	-
CM5.7	Describe food hygiene	-	Microbiology
CM5.8	Describe and discuss the importance and methods of food fortification and effects of additives and adulteration	Paediatrics	-
CM7.1	Define Epidemiology and describe and enumerate the principles, concepts and uses	General Medicine	-
CM7.2	Enumerate, describe and discuss the modes of transmission and measures	General Medicine	-

	for prevention and control of communicable and non-communicable diseases		
CM7.3	Enumerate, describe and discuss the sources of epidemiological data	General Medicine	-
CM7.4	Define, calculate and interpret morbidity and mortality indicators based on given set of data	General Medicine	-
CM7.5	Enumerate, define, describe and discuss epidemiological study designs	General Medicine	-
CM7.6	Enumerate and evaluate the need of screening tests	General Medicine	-
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures	General Medicine	Microbiology
CM7.8	Describe the principles of association, causation and biases in epidemiological studies	General Medicine	-
CM13.1	Define and describe the concept of Disaster management	General Surgery, General Medicine	-
CM13.2	Describe disaster management cycle	General Surgery, General Medicine	-
CM13.3	Describe manmade disasters in the world and in India	General Surgery, General Medicine	-
CM13.4	Describe the details of the National Disaster management Authority	General Surgery, General Medicine	-
CM15.1	Define and describe the concept of mental Health	Psychiatry	-
CM15.2	Describe warning signals of mental health disorder	Psychiatry	-
CM15.3	Describe National Mental Health program	Psychiatry	-
CM19.1	Define and describe the concept of Essential Medicine List (EML)	-	Pharmacology
CM19.2	Describe roles of essential medicine in primary health care	-	Pharmacology
CM19.3	Describe counterfeit medicine and its prevention	-	Pharmacology

Recommended Text books-(Latest edition)

1. Park's text book of preventive and social medicine
2. Kulkarni's text book of preventive and social medicine
3. Sunderlal's text book of preventive and social medicine
4. Suryakantha's text book of Community medicine
5. Essentials of Community medicine practicals- DK Mahabalaraju
6. Nutritive values of Indian foods-C.Gopalan
7. Methods in bio-statistics – BK Mahajan
8. Text book of bio statistics – P Sundar Rao

Reference books

1. Public health and preventive medicine -Maxcy-rosenau
2. Oxford text book of public health -Oxford medical education
3. Uses of epidemiology -Morris
4. Medical statistics -Bradford and hill
5. Preventive and community medicine -Clark
6. Human nutrition and dietetics -Davidson and passmore
7. Practical epidemiology -Barker
8. Theory and practice of public health -Hobson

FORENSIC MEDICINE & TOXICOLOGY

GOAL:

The aim of teaching the undergraduate student in Forensic Medicine is to impart such knowledge and skills that may enable him to manage common medico-legal problems in day to day practice. He/she shall acquire competence for post mortem diagnosis based on history, physical examination and relevant observations during autopsy.

COMPETENCIES:

Period of Training – Phase II MBBS & Phase III part 1 MBBS

The learner must demonstrate:

- Understanding of medico-legal responsibilities of physicians in primary and secondary care settings,
- Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
- Ability to manage medical and legal issues in cases of poisoning / overdose,
- Understanding the medico-legal framework of medical practice and medical negligence,
- Understanding of codes of conduct and medical ethics.

Period of Training – Internship

A. An intern must perform or assist in:

- Identifying and documenting medico-legal problems in a hospital and general practice,
- Identifying the medico-legal responsibilities of a medical practitioner in various hospital situations,
- Diagnosing and managing with competence basic poisoning conditions in the community,
- Diagnosing and managing with competence and documentation in cases of Rape /Sexual assault,
- Preparing medico-legal reports in various medico legal situations.

B. An intern must have observed or preferably assisted at the following operations/ procedures:

Various medico legal / post-mortem procedures and formalities during their performance by police.

Certifiable Procedural skills desirable of Indian Medical Graduate in Forensic Medicine & Toxicology

- Documentation and certification of trauma (I)
- Diagnosis and certification of death (D)
- Legal documentation related to emergency cases (D)
- Certification of medico-legal cases e.g. Age estimation, Sexual Violence etc. (D)
- Establishing communication in medico-legal cases with police,

public health authorities, other concerned departments, etc (D)
I- Independently performed on patients,
O- Observed in patients or on simulations,
D- Demonstration on patients or simulations and performance under supervision in patients

Competencies in Phase II MBBS and Phase III part 1 MBBS			
No.	**Topic**	**Competencies**	**Procedures requiring certification**
1	General information	11	Nil
2	Forensic Pathology	35	Nil
3	Clinical Forensic Medicine	33	Nil
4	Medical jurisprudence (Medical Law & Ethics)	30	Nil
5	Forensic Psychiatry	06	Nil
6	Forensic laboratory investigation in medicolegal practice	03	Nil
7	Emerging technologies in Forensic Medicine	01	Nil
8	General Toxicology	10	Nil
9	Chemical Toxicology	06	Nil
10	Pharmaceutical Toxicology	01	Nil
11	Biotoxicology	01	Nil
12	Sociomedical Toxicology	01	Nil
13	Environmental Toxicology	02	Nil
14	Skills in Forensic Medicine & Toxicology	22	Nil
	TOTAL	**162**	**Nil**

Competencies in Internship			
Sl no	**Topic**	**Competencies**	**Procedures requiring certification**
1	Documentation and certification of trauma (I)	**1**	**1**
2	Diagnosis and certification of death (D)	**1**	**1**

3	Legal documentation related to emergency cases (D)	**1**	**1**
4	Certification of medico-legal cases e.g. Age estimation, Sexual Violence etc. (D)	**3**	**3**
5	Establishing communication in medico-legal cases with police, public health authorities, other concerned departments, etc (D)	**3**	**3**
	Total	**9**	**9**

Minimum Teaching Hours in MBBS Phase II & Phase III part 1

Forensic Medicine & Toxicology	**Lectures (hours)**	**Small group learning (Tutorials / Seminars) /Integrated learning (hours)**	**Self - Directed Learning (hours)**	**Total (hours)**
Phase II	15	30	05	50
Phase III part 1	25	45	05	75
Total	**40**	**75**	**10**	**125**
AETCOM	**Lectures (hours)**	**Small group learning (Tutorials / Seminars) /Integrated learning (hours)**	**Self - Directed Learning (hours)**	**Total (hours)**
Phase II	00	29	08	37
Phase III part 1	00	19	06	25
Total	**00**	**48**	**14**	**62**

Minimum Teaching Hours in Internship

Subject	**Period of posting**
Forensic Medicine & Toxicology	**7 days**

List of Competencies and SLOs to be covered in Phase II MBBS

General Information

- **Lecture – 1 hr (Orientation class)**
- **Assessment:** No assessment

FM1.1 - Demonstrate knowledge of basics of Forensic Medicine like definitions of Forensic medicine, Clinical Forensic Medicine, Forensic Pathology, State Medicine, Legal Medicine and Medical Jurisprudence

: Define Forensic Medicine and Medical Jurisprudence.
: Describe different branches of Forensic medicine like Clinical Forensic Medicine, Forensic Pathology, Forensic Odontology and Forensic Psychiatry.
: Discuss on Forensic Medicine practice in different parts of the world.

FM1.2 -Describe history of Forensic Medicine

: Describe the etymology of Forensic Medicine.
: Describe how knowledge of medicine was applied to aid in the administration of justice from ancient time and its evolution to the recent times.
: Enumerate the important people and events related to Forensic Medicine.

Forensic Pathology

- **Lecture – 1 hr (Interactive)** **Assessment:** Written, Viva voce

FM2.1 - Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical Death and Brainstem Death

: Define death.
: Describe the types of death (somatic, molecular, brain-death, cortical death and brainstem death).
: Describe the procedure of declaring death with specific reference to brain stem death.

FM2.2 - Describe and discuss natural and unnatural deaths

2.2.1: Describe the manner of death and cause of death

FM2.3 - Describe and discuss issues related to sudden natural deaths

: Define sudden natural death.
: Enumerate the causes for sudden natural death.
: Describe the medicolegal importance of sudden natural death. 2.3.4: Discuss the autopsy procedure in case of sudden natural death.

- **SDL – 1 hr (Followed by reflective writing)** **Assessment:** Written, Viva voce

FM2.4 - Describe salient features of the Organ Transplantation and The Human Organ Transplant (Amendment) Act 2011 and discuss ethical issues regarding organ donation

2.4.1: Discuss the ethical and legal issues related to organ donation and transplantation. 2.4.2: Describe the salient features of The Human Organ Transplant Act, 1994 with amendments till date.

- **Lecture – 1 hr (Interactive)** **Assessment:** Written, Viva voce

FM2.5 - Discuss moment of death, modes of death - coma, asphyxia and syncope

2.5.1: Describe the modes of death (coma, syncope, asphyxia).

FM2.6 - Discuss presumption of death and survivorship

2.6.1: Discuss the importance of presumption of death (Sec. 107 & 108 IEA).

FM2.7 - Describe and discuss suspended animation

: Define suspended animation.
: Enumerate the causes for suspended animation.
: Discuss the medicolegal importance of suspended animation.

- **SGD – 2 hrs** **Assessment:** Written, Viva voce

FM2.10 - Discuss estimation of time since death

2.10.1: Enumerate the various factors which help in determination of time since death. 2.10.2: Discuss on Forensic entomology.

FM2.8 - Describe and discuss postmortem changes including signs of death, cooling of body, post-mortem lividity, rigor mortis, cadaveric spasm, cold stiffening and heat stiffening

: Classify post-mortem changes (immediate, early, late).

: Describe postmortem cooling and its medicolegal importance. 2.8.3: Define postmortem lividity.
2.8.4: Describe postmortem lividity and its medico legal importance. 2.8.5: Define rigor mortis.
2.8.6: Describe rigor mortis and its medico legal importance. 2.8.7: Enumerate the conditions simulating rigor mortis.
: Define cadaveric spasm.
: Differentiate between cadaveric spasm and rigor mortis.
: Discuss on cold stiffening, heat stiffening, chemical stiffening and gas stiffening.

- **SGD – 1 hr** **Assessment:** Written, Viva voce

FM2.9 - Describe putrefaction, mummification, adipocere and maceration

2.9.1: Describe the various changes seen in the body due to putrefaction. 2.9.2: Define adipocere.
2.9.3: Describe adipocere and its medico legal importance. 2.9.4: Define mummification.
2.9.5: Describe mummification and its medico legal importance.

- **Lecture – 1 hr** **Assessment:** Written, Viva voce

FM2.11 - Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination

: Describe the types of autopsy.
: Enumerate the objectives of medicolegal autopsy. 2.11.3: Enumerate the objectives of foetal autopsy.
2.11.4: Enumerate the objectives of skeletal remains examination.

FM2.14 - Describe and discuss examination of clothing, preservation of viscera on post- mortem examination for chemical analysis and other medico-legal purposes, post- mortem artefacts

: Describe the method of preservation and dispatch of viscera and body fluids for chemical analysis.

: Describe the method of preservation and dispatch of viscera and body fluids for histopathology and microbiological investigations.

: Describe the method of preservation and dispatch of clothes in a medicolegal case.

: Discuss on postmortem artefacts and their medicolegal importance

***FM8.5 - Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis**

8.5.1: Explain the procedure of medico-legal autopsy in a suspected case of poisoning. 8.5.2: Describe the method of preserving the various viscera in a case of poisoning.

8.5.3: Describe the procedure for dispatch of viscera for chemical analysis in a case of poisoning.

***FM8.9 - Describe the procedure of intimation of suspicious cases or actual cases of foul play to the police, maintenance of records, preservation and dispatch of relevant samples for laboratory analysis.**

: Describe the procedure of intimation of suspicious cases or actual cases of foul play to the police

- S. 39 CrPC, S. 40 CrPC, S. 175 CrPC.
- S. 166 (B) IPC, S. 176 IPC, S. 177 IPC, S. 201 IPC, S. 202 IPC.

: Describe the procedure of record maintenance in a case of poisoning.

: Describe the procedure of collection and dispatch of viscera for chemical analysis in a case of poisoning.

- **Lecture – 1 hr** **Assessment:** Written, Viva voce

FM2.12 - Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination

2.12.1: Describe the rules for conducting medicolegal autopsy. 2.12.2: Enumerate the skin incisions in medicolegal autopsy.

: Enumerate the methods of evisceration in medicolegal autopsy.

: Describe the external and internal examination in medicolegal autopsy. 2.12.5: Explain the special techniques used in medicolegal autopsy (demonstration of pneumothorax, air embolism, etc).

FM2.13 - Describe and discuss obscure autopsy

2.13.1: Discuss on obscure autopsy with examples. 2.13.2: Discuss on negative autopsy with examples.

FM2.17 - Describe and discuss exhumation

: Define exhumation.

: Enumerate the objectives of exhumation.
: Describe the rules and procedure of exhumation.

- **SGD – 4 hrs (Practical)** **Assessment:** Written, Viva voce, OSPE, Practical book, Log book

FM2.16 - Describe and discuss examination of mutilated bodies or fragments, charred bones and bundle of bones

: Describe the procedure of examination of mutilated bodies / fragments.
: Describe the procedure of examination of skeletal remains (including charred bones).

***FM14.9 - Demonstrate examination of & present an opinion after examination of skeletal remains in a simulated/ supervised environment**

: Enumerate the objectives of skeletal remains examination.
: Demonstrate the procedure of examination of skeletal remains in a simulated/ supervised environment.
: Draft a medicolegal report and opinion after examination of skeletal remains.

- **SGD – 1 hr** **Assessment:** Written, Viva voce

FM2.18 - Crime Scene Investigation: -

Describe and discuss the objectives of crime scene visit, the duties & responsibilities of doctors on crime scene and the reconstruction of sequence of events after crime scene investigation

: Enumerate the objectives of crime scene visit by an autopsy surgeon.
: Describe the procedure of examination of crime scene and preservation of evidentiary material.
: Explain the reconstruction of a case after the crime scene visit.

- **SGD – 1 hr** **Assessment:** Viva voce

FM2.31 - Demonstrate ability to work in a team for conduction of medico-legal autopsies in cases of death following alleged medical negligence, dowry death, death in custody or following violation of human rights as per National Human Rights Commission Guidelines on exhumation

: Demonstrate the benefit of team work in a medicolegal autopsy of alleged medical negligence.

: Demonstrate the benefit of team work in a medicolegal autopsy of alleged dowry death.

: Demonstrate the benefit of team work in a medicolegal autopsy of alleged custodial death.

: Demonstrate the benefit of team work in a medicolegal autopsy of death due to violation of human rights.

: Demonstrate the benefit of team work in exhumation.

- **SDL – 1 hr** **Assessment:** Written, Viva voce

FM2.19 - Investigation of anaesthetic, operative deaths: Describe and discuss

special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences

2.19.1: Explain the significance of autopsy in operative deaths. 2.19.2: Describe the procedure of autopsy in operative deaths.
2.19.3: Describe the procedure of preservation and dispatch of evidentiary material for investigation in deaths associated with anaesthesia and surgery

- **SDL – 1 hr** **Assessment:** Written,

FM2.15 - Describe special protocols for conduction of medico-legal autopsies in cases of death in custody or following violation of human rights as per National Human Rights Commission Guidelines

2.15.1: Describe the National Human Rights Commission guidelines for conduction of medicolegal autopsy in cases of death in custody or violation of human rights.

- **SGD – 1 hr** **Assessment:** OSPE, Written, Viva voce

FM2.32 - Demonstrate ability to exchange information by verbal or nonverbal communication to the peers, family members, law enforcing agency and judiciary

: Demonstrate the skills of communication by a doctor with the peers.
: Demonstrate the skills of communication by a doctor with the patient's family members in MLC works at casualty.
: Demonstrate the skills of communication by a doctor with the deceased family members during medicolegal autopsy.
: Demonstrate the skills of communication by a doctor with the law enforcing agency/ judiciary in medicolegal practices.

FM2.33 & FM2.34 - Demonstrate ability to use local resources whenever required like in mass disaster situations

: Define Mass disaster
: Enumerate the types of Mass disaster.
: List the objectives of forensic investigation in mass disasters. 2.33.4: Describe the procedure of examination at disaster site and autopsy. 2.33.5: Describe the evidentiary materials to be preserved in mass disasters. 2.33.6: Demonstrate the importance of team work in Mass Disasters.

FM2.35 - Demonstrate professionalism while conducting autopsy in medicolegal situations, interpretation of findings and making inference/opinion, collection, preservation and dispatch of biological or trace evidences

: Demonstrate the professionalism of a doctor during conduction of medicolegal autopsies (such as interaction with investigating officer/relatives of deceased, receiving inquest form, maintaining confidentiality, etc).

: Demonstrate the professionalism in preservation and dispatching evidentiary materials to FSL (such as proper method of preservation and dispatch of materials with necessary forms and maintaining confidentiality).

: Demonstrate the professionalism in preservation and dispatching evidentiary materials to histopathology and microbiology investigations (such as proper method of preservation and dispatch of materials with necessary forms and maintaining confidentiality). 2.35.4: Demonstrate the professionalism while giving opinion in medicolegal cases (such as honesty with unbiased inferences).

Clinical Forensic Medicine

- **SGD – 2 hrs** **Assessment:** Written,

FM3.1 - IDENTIFICATION

Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, Stature, age determination using morphology, teeth- eruption, decay, bite marks, bones-ossification centres, medicolegal aspects of age

: Define Corpus delicti

: Describe the importance of corpus delicti in establishing the crime. 3.1.3: List the various means of identification in living and dead persons.

: Explain the role of hand writing analysis, gait, speech, photography and facial description as a tool of identification.

: Describe the methods of determination of race.

: Describe the methods of sex determination in a living person. 3.1.7: Describe the methods of sex determination in a dead person. 3.1.8: Define intersex.

3.1.9: Describe the types of intersex and its medicolegal importance. 3.1.10: Describe the methods of age determination in a living person. 3.1.11: Describe the methods of age determination in a dead person. 3.1.12: Explain the method of age estimation using Gustafson's technique. 3.1.13: Discuss the forensic aspects related to teeth.
3.1.14: Describe the methods of determination of stature.

- **SGD – 1 hr** **Assessment:** Written, Viva voce

FM3.2 - IDENTIFICATION

Describe and discuss identification of criminals, unknown persons, dead bodies from the remains- hairs, fibres, teeth, anthropometry, dactylography, foot prints, scars, tattoos, poroscopy & superimposition

3.2.1: Explain the role of hair in the identification of an individual. 3.2.2: Describe the medicolegal importance of hair.
3.2.3: Describe the dyes used, methods of erasure and medicolegal importance of a tattoo. 3.2.4: Describe the medicolegal importance of the scar.
: Define anthropometry.
: Describe various data included in anthropometry and its importance in identification. 3.2.7: Define dactylography.
3.2.8: Describe the types, method of collection and medicolegal importance of dactylography. 3.2.9: Discuss the role of poroscopy, cheiloscopy and rugoscopy in identification.
: Describe the role of foot prints in establishing the identity.
: Describe the role of facial reconstruction in establishing the identity. 3.2.12: Discuss the role of superimposition in establishing the identity.

- **SGD – 2 hrs (Practical)** **Assessment:** OSPE, Practical book, Log book

***FM14.6 - Demonstrate and interpret medico-legal aspects from examination of hair (human & animal) fibre, semen & other biological fluids**

: Identify hair (human/ animal), other fibres by physical and microscopic examination and describe its medicolegal importance.
: Identify the **semen** by physical and microscopic examination and describe its medicolegal importance**.**

***FM14.7 - Demonstrate & identify that a particular stain is blood and identify the species of its origin**

: Identify the blood by physical and microscopic examination.
: Explain the various medicolegal conclusions by examining the blood stains. 14.7.3: Explain the method of identifying the species of origin of the blood stain.

***FM14.8 - Demonstrate the correct technique to perform and identify ABO & RH blood group of a person**

14.8.1: Perform the technique of identifying the ABO blood group of a person. 14.8.2: Perform the technique of identifying the Rh blood group of a person.

Toxicology: General Toxicology

- **SDL – 1 hr** **Assessment:** Written, Viva Voce

FM8.1 - Describe the history of Toxicology

8.1.1: Describe the history of Toxicology.

- **Lecture – 1 hr** **Assessment:** Written, Viva Voce

FM8.2 - Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison

8.2.1: Define Toxicology, Forensic Toxicology, Clinical Toxicology and Poison

FM8.3 - Describe the various types of poisons, Toxicokinetics, and Toxicodynamics and diagnosis of poisoning in living and dead

8.3.1: Classify poisons in respect to mode of action and mode of usage. 8.3.2: Describe pharmacokinetics & pharmacodynamics of the poisons. 8.3.3: Explain the diagnosis of poisoning in the living individual. 8.3.4: Explain the diagnosis of poisoning in the dead individual

FM8.4 - Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons

: Describe the legal sections related to poisoning in India.

- ✓ S. 85 IPC, S. 86 IPC, S. 274 IPC, S. 284 IPC, S. 299 IPC, S. 300 IPC, S. 304 (A) IPC, S. 375 IPC
- ✓ S. 324 IPC, S. 325 IPC, S. 326 IPC, S. 326A IPC, S. 326B IPC, S. 328 IPC
- ✓ S. 357C CrPC
- ✓ S. 185 IMV Act, S. 203 IMV Act, S. 204 IMV Act

: Describe Narcotic Drugs and Psychotropic Substances Act, 1985. 8.4.3: Describe Karnataka Poisons (Possession and Sale) Rules, 2015.

8.4.4: Describe the legal responsibilities of a doctor in a case of poisoning

FM8.6 - Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India

8.6.1: Describe the general symptoms and signs of the common poisons encountered in India. 8.6.2: Describe the general principles of diagnosis of the common poisons encountered in India.
8.6.3: Enumerate the line of management of the common poisons encountered in India.

- **Lecture – 1 hr** **Assessment:** Written, Viva Voce

FM8.8 - Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination

8.8.1: List the general treatment procedure in case of poisoning. 8.8.2: Explain the procedure of Gastric lavage.
8.8.3: Enumerate the indications and contraindications for Gastric lavage. 8.8.4: Define antidote.
8.8.5: Describe the various types of antidotes. 8.8.6: Explain Chelation therapy.
8.8.7: Describe the methods for hastening elimination of absorbed poison.

- **Lecture – 1 hr** **Assessment:** Written, Viva Voce

FM8.10 - Describe the general principles of Analytical Toxicology and give a brief description of analytical methods available for toxicological analysis: Chromatography – Thin Layer Chromatography, Gas Chromatography, Liquid Chromatography and Atomic Absorption Spectroscopy

8.10.1: List the various analytical methods used in Toxicology. 8.10.2: Describe the general principle of Thin Layer Chromatography. 8.10.3: Describe the basic principle and uses of Gas Chromatography.
: Describe the basic principle and uses of Liquid Chromatography.
: Describe the basic principle and uses of Atomic Absorption Spectroscopy. 8.10.6: Describe the basic principle and uses of Mass Spectrometry.
8.10.7: Describe the basic principle and uses of Radioimmuno Assay

- **SGD – 2 hrs (Practical/ Skills lab)** **Assessment:**

OSPE, Written, Viva Voce

***FM14.2 - Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment** 14.2.1: Take an informed consent from the Patient / Guardian after explaining the importance of MLC registration in Poisoning cases.

: Perform the clinical examination (history taking, general physical examination, systemic examination, laboratory investigations, differential diagnosis) in poisoning cases in a simulated/ supervised environment.
: Prepare the medicolegal certificate after documenting the clinical findings. 14.2.4: Prepare the police intimation.

***FM14.3 - Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination** 14.3.1: Demonstrate the process of collecting, preserving and dispatch of the materials/ exhibits in a suspected case of **ingested poisoning**.

14.3.2: Demonstrate the process of collecting, preserving and dispatch of the materials/ exhibits in a suspected case of **inhalation poisoning** along with clinical examination. 14.3.3: Demonstrate the process of collecting, preserving and dispatch of the materials/ exhibits in a suspected case of **injected poisoning** along with clinical examination.

FM8.7 - Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids

: Describe the bedside clinic tests for Hydrochloric acid poisoning (Ammonia test, Litmus paper test, Silver nitrate test).
: Describe the bedside clinic tests for Nitric acid poisoning (Ferrous Sulphate test). 8.7.3: Describe the bedside clinic tests for Sulphuric acid poisoning (Litmus paper test). 8.7.4: Describe the bedside clinic tests for Oxalic acid poisoning (Barium nitrate test). 8.7.5: Describe the bedside clinic tests for Caustic alkalis poisoning (Litmus paper test). 8.7.6: Describe the bedside clinic tests for Phenol (Folin Ciocaltaeu reagent test).
8.7.7: Describe the bedside clinic tests for Salicylates (Trinder's reagent test).

Toxicology : Chemical Toxicology

- **SGD – 2 hrs** **Assessment:** Written, Viva voce

- **FM9.1 - Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids**

: Describe the characteristics, mechanism of action, fatal dose, fatal period,

clinical features, treatment, postmortem findings and medicolegal aspects of

Sulphuric acid poisoning.

: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Nitric acid poisoning. 9.1.3: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Hydrochloric acid poisoning.

: Discuss on Vitriolage.

: Describe the characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Carbolic acid poisoning.

: Discuss on Carboluria.

: Describe the characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Oxalic acid poisoning.

: Discuss on Oxaluria.

: Describe the characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Acetylsalicylic acid poisoning.

- **Lecture – 1 hr** **Assessment:** Written, Viva voce

FM9.2 - Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium

9.2.1: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Phosphorus poisoning. 9.2.2: Discuss on Phossy jaw.

9.2.3: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Iodine poisoning. 9.2.4: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Barium poisoning.

- **Lecture – 2 hrs** **Assessment:** Written, Viva voce

FM9.3 - Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium 9.3.1: Describe the

characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Arsenic poisoning.

: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Lead poisoning.

: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Mercury poisoning. 9.3.4: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Copper poisoning. 9.3.5: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Iron poisoning.

9.3.6: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Thallium poisoning. 9.3.7: Describe the characteristics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Cadmium poisoning. 9.3.8: Describe the causes, clinical features and treatment of Metallic fume fever.

- **Lecture – 2 hrs Assessment:** Written, Viva voce

FM9.4 - Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol

: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of ethanol intoxication.

: Define drunkenness.
: Describe the methods of detection of drunken person in legal situations.
: Describe clinical features, treatment and medicolegal aspects of chronic alcoholism.

: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects in a case of methanol poisoning.

: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action,

fatal dose, fatal period, clinical features, treatment and medicolegal aspects of ethylene glycol poisoning.

- **SGD – 2 hrs (Integration – Pharmacology)** **Assessment:** Written, Viva Voce

FM9.5 - Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide

: Classify agricultural poisons.

: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Organo-phosphorous poisoning.
: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Carbamate poisoning.
: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Organo-chlorine poisoning.
: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Paraquat poisoning.
: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Pyrethroid poisoning.
: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Aluminum and Zinc phosphide poisoning.

- **SGD – 1 hr** **Assessment:** Written, Viva Voce

FM9.6 - Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases

: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Ammonia poisoning.
: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings & medicolegal aspects of Carbon monoxide poisoning.

: Describe physical/chemical characteristics, pharmacokinetics, mechanism of action, fatal dose, fatal period, clinical features, treatment, postmortem findings and medicolegal aspects of Cyanide poisoning.

: Describe physical/chemical characteristics, mechanism of action, clinical features, treatment, postmortem findings and medicolegal aspects of Methyl Isocyanate poisoning. 9.6.5: Describe clinical features, treatment and medicolegal aspects of exposure to tear gas (in riot control).

Toxicology : Pharmaceutical Toxicology

- **SDL – 1 hr (Integration – Pharmacology) Assessment:** Written, Viva Voce

FM10.1 - Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to:

i. **Antipyretics – Paracetamol, Salicylates**
ii. **Anti-Infectives (Common antibiotics – an overview)**
iii. **Neuropsychotoxicology Barbiturates, benzodiazepins, phenytoin, lithium, haloperidol, neuroleptics, tricyclics**
iv. **Narcotic Analgesics, Anaesthetics, and Muscle Relaxants**
v. **Gastro-Intestinal and Endocrinal Drugs – Insulin**

: Describe clinical features, treatment and medico-legal aspects of poisoning due to Antipyretics (such as Paracetamol and Salicylates).
: Describe clinical features, treatment and medico-legal aspects of poisoning due to Anti-Infective overdose (common antibiotics).
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of Barbiturate poisoning.
: Describe clinical features, treatment and medico-legal aspects of Benzodiazepine poisoning.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of opium and its alkaloids.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of poisoning due to Gastro-Intestinal and Endocrinal Drugs (e.g., Insulin).

- **Lecture – 1 hr** **Assessment:** Written, Viva voce **FM10.1 vi - Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis**

: Enumerate the cardiotoxic plants.
: Describe the active principles, mechanism of action, fatal dose, fatal period, clinical features, treatment, post-mortem findings and medico-legal aspects of poisoning due to cardiotoxic plants.

Toxicology : Biotoxicology

- **SGD – 2 hrs** **Assessment:** Written, Viva Voce

FM11.1 - Describe features and management of Snake bite, scorpion sting, bee and wasp sting and spider bite

11.1.1: Differentiate poisonous and non-poisonous snakes. 11.1.2: Classify poisonous snakes.
: Identify the common poisonous and non-poisonous snakes in India.
: Describe mechanism of action, clinical features, management, postmortem findings and medicolegal

aspects of snake bite (Ophitoxaemia).
: Identify the common scorpions seen in India.
: Describe mechanism of action, clinical features, management, postmortem findings and medicolegal aspects of scorpion sting.
: Describe mechanism of action, clinical features, management, postmortem findings and medicolegal aspects of bee and wasp sting, and spider bite.

Toxicology : Environmental Toxicology

- **Lecture – 1 hr** **Assessment:** Written, Viva voce

FM13.1 - Describe toxic pollution of environment, its medico-legal aspects & toxic hazards of occupation and industry
: Enumerate the causes for environmental pollution.
: Describe the health effects of environmental pollution due to toxic substances. 13.1.3: Describe the medico-legal aspects of toxic hazards on employees of an industry **FM13.2 - Describe medico-legal aspects of poisoning in Workman's Compensation Act** 13.2.1: Describe the medico-legal issues arising out of effects of poisoning due to occupational exposure as per Workman's Compensation Act.
13.2.2: Discuss the role of physician in cases of poisoning due to occupational exposure.

Toxicology : Sociomedical Toxicology

- **Lecture – 2 hrs** **Assessment:** Written, Viva voce

FM12.1 - Describe features and management of abuse/ poisoning with following chemicals: Tobacco, cannabis, amphetamines, cocaine, hallucinogens, designer drugs & solvent
12.1.1: Define drug abuse, drug addiction, drug habituation and drug dependence. 12.1.2: List the drugs of abuse.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of acute and chronic tobacco poisoning.
: Enumerate the active principles and various preparations of cannabis.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of acute and chronic cannabis poisoning.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of acute and chronic cocaine poisoning.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of amphetamine poisoning.
: Enlist hallucinogenic substances.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of Lysergic acid diethylamide poisoning.
: Define 'Designer drug'.
: Describe the clinical features and management of common designer drugs. 12.1.12: Define 'Solvent abuse'.
: Describe clinical features, treatment, post-mortem findings and medico-legal aspects of Solvent abuse.
: Discuss on Body packer's syndrome.

Skills in Forensic Medicine & Toxicology

- **SGD – 2 hrs (Practical)** **Assessment:** OSPE, Practical book, Log book, Viva Voce

FM14.17 - To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.

: Identify with physical and /or chemical characteristics of the common poisons
e.g. dhatura, castor, cannabis, opium, aconite, copper sulphate, pesticide compounds, marking nut, oleander, Nux vomica, abrus seeds, snakes, capsicum, calotropis, lead compounds & tobacco. *(regional / local poisons)*
: Draw the medico-legal inferences with the use of the common poisons.

- **SGD – 5 hrs (Practical – 5 cases)** **Assessment:** OSPE, Practical book, Log book, Viva Voce

FM14.5 - Conduct & prepare post-mortem examination report of varied aetiologies (at least 15) in a simulated/ supervised environment

: Describe the techniques of conducting a medicolegal autopsy.
: Describe the postmortem findings (external and internal) in a medicolegal autopsy. 14.5.3: Enumerate the ancillary investigations required (along with appropriate materials for such investigations) in a medicolegal autopsy.
14.5.4: Draft the postmortem report after a medicolegal autopsy.
Medicolegal autopsies may be a case of unnatural death, natural death, custodial death, alleged medical negligence, decomposed body, mutilated body.

- **SGD – 1 hr (Practical) Integration Pathology** **Assessment:** OSPE, Practical book, Log book, Viva Voce

FM14.19* - To identify & prepare medico-legal inference from histo-pathological slides of Myocardial Infarction, pneumonitis, tuberculosis, brain infarct, liver cirrhosis, Pulmonary oedema, *(remaining slides will be covered in phase 3 MBBS)*

: List the microscopic identifying features after examining the histopathological slides of myocardial Infarction, pneumonitis, tuberculosis, brain infarct, liver cirrhosis, pulmonary oedema.
: Describe the medico-legal inferences after examining the above-mentioned histopathological slides.

15 Summary of TL methods and list of competencies to be covered in Phase II MBBS and Assessment methods

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Sl. No.	Teaching hours and type	Competency numbers	Assessment methods
1.	Lecture – 1 hr (Orientation class)	1.1, 1.2	No assessment
2.	Lecture – 1 hr (Interactive)	2.1, 2.2, 2.3	Written, Viva voce
3.	SDL – 1 hr (Followed by reflective writing)	2.4	Written, Viva voce

4.	Lecture – 1 hr (Interactive)	2.5, 2.6, 2.7	Written, Viva voce
5.	SGD – 2 hrs	2.10, 2.8	Written, Viva voce
6.	SGD – 1 hr	2.9	Written, Viva voce
7.	Lecture – 1 hr	2.11, 2,14, 8.5, 8.9	Written, Viva voce
8.	Lecture – 1 hr	2.12, 2.13, 2.17	Written, Viva voce
9.	SGD – 4 hrs (Practical)	2.16, 14.9	Written, Viva voce, OSPE, Practical book, Log book
10.	SGD – 1 hr	2.18	Written, Viva voce
11.	SGD – 1 hr	2.31	Viva voce
12.	SDL – 1 hr	2.19	Written, Viva voce
13.	SDL – 1 hr	2.15	Written, Viva voce
14.	SGD – 1 hr	2.32, 2.33, 2.34, 2.35	OSPE, Written, Viva voce
15.	SGD – 2 hrs	3.1	Written, Viva voce
16.	SGD – 1 hr	3.2	Written, Viva voce
17.	SGD – 2 hrs (Practical)	14.6. 14.7, 14.8	OSPE, Practical book, Log book
18.	SDL – 1 hr	8.1	Written, Viva voce
19.	Lecture – 1 hr	8.2, 8.3, 8.4, 8.6	Written, Viva voce
20.	Lecture – 1 hr	8.8	Written, Viva voce
21.	Lecture – 1 hr	8.10	Written, Viva voce
22.	SGD – 2 hrs (Practical/ Skills lab)	14.2, 14.3, 8.7	OSPE, Written, Viva Voce
23.	SGD – 2 hrs	9.1	Written, Viva voce
24.	Lecture – 1 hr	9.2	Written, Viva voce
25.	Lecture – 2 hrs	9.3	Written, Viva voce
26.	Lecture – 2 hrs	9.4	Written, Viva voce
27.	SGD – 2 hrs (Integration – Pharmacology)	9.5	Written, Viva voce
28.	SGD – 1 hr	9.6	Written, Viva voce
29.	SDL – 1 hr (Integration – Pharmacology)	10.1 (i-v)	Written, Viva voce
30.	Lecture – 1 hr	10.1 (vi)	Written, Viva voce
31.	SGD – 2 hrs	11.1	Written, Viva voce
32.	Lecture – 1 hr	13.1, 13.2	Written, Viva voce
33.	Lecture – 2 hrs	12.1	Written, Viva voce
34.	SGD – 2 hrs (Practical)	14.17	OSPE, Practical book, Log book, Viva Voce
35.	SGD – 5 hrs (5 cases)	14.5	OSPE, Practical book, Log book, Viva Voce
36.	SGD – 1 hr (Practical) Integration Pathology	14.19	OSPE, Practical book, Log book, Viva Voce

Assessment in Forensic Medicine & Toxicology

Summative Assessment - An assessment conducted at the end of instruction to check how much the student has learnt.

Formative Assessment - An assessment conducted during the instruction with primary purpose of providing feedback for improving learning.

Assessment - Range of assessments conducted by the teachers teaching a particular subject with the purpose of knowing what is learnt and how it is learnt. Internal assessment can have both formative and summative functions.

Note - Assessment requires specification of measurable and observable entities. This could be in the form of whole tasks that contribute to one or more competencies or assessment of a competency per se. Another approach is to break down the individual competency into learning objectives related to the domains of knowledge, skills, attitudes, communication etc. and then assess them individually.

Scheduling of Internal Assessment - In Phase II MBBS there will be ONE Internal assessment in theory and practicals. -In Phase III part 1 MBBS there will be two Internal assessments in theory and practicals. One of the test should be prelim or similar to university examination.

Theory IA can include: Theory tests, seminars, quizzes, interest in subject, scientific attitude etc. Written tests should have essay questions, short notes and creative writing experiences.

Theory IA can include: Theory tests, seminars, quizzes, interest in subject, scientific attitude etc. Written tests should have essay questions, short notes and creative writing experiences.

Practical IA can include: practical tests, Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), records maintenance and attitudinal assessment.

Assessment of Log-book- Log book should record all activities like seminar, symposia, quizzes and other academic activities. It should be assessed regularly and submitted to the department. Up to twenty per cent IA Theory marks should be for Log book assessment.

Assessment of Practical Record book- Practical book should record all skills and other practical exercises done during the academic programme. It should be assessed regularly and submitted to the department. Up to twenty per cent IA Practical marks should be for Log book assessment

Internal Assessment for AETCOM will include: - Written tests comprising of short notes and creative writing experiences.

- OSCE based clinical scenarios and/or viva voce. Skill competencies acquired during the Professional Development Programme (AETCOM) must be tested during the practical and viva voce.

Feedback in Internal Assessment - Feedback should be provided to students throughout the course so that they are aware of their performance and remedial action can be initiated well in time. The feedbacks need to be structured and the faculty and students must be sensitized to giving and receiving feedback.

The results of IA should be displayed on notice board within two weeks of the test and an opportunity provided to the students to discuss the results and get feedback on making their performance better.

It is also recommended that students should sign with date whenever they are shown IA records in token

of having seen and discussed the marks.

Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.

Internal assessment should be based on competencies and skills.

Criteria for appearing in University examination: Learners must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination

SCHEME OF EXAMINATION

Internal assessment

TABLE SHOWING SCHEME FOR CALCULATION OF INTERNAL EXAMINATION MARKS

Theory (Maximum marks)		**Practical (Maximum marks)**	
Theory papers	40*	Practical exercises	40**
Professionalism	5	Level of participation in AETCOM activities	5
Part completion tests	5	Practical record book	5
TOTAL	50	TOTAL	50
Please note: *the marks for each of the three internal examination theory assessments must be calculated out of 40 marks, regardless of the maximum marks. ** the marks for each of the three internal examination practical assessments must be calculated out of 50 marks, regardless of the maximum marks. Only the final marks out of 50 (as in the table) needs to be submitted to the University, separately for theory and practical for each internal assessment.			

Internal assessment should be based on competencies and skills.
Regular periodic examinations shall be conducted throughout the course. There shall be three internal assessment examinations
An average of the marks scored in the three internal assessment examinations will be considered as the final internal assessment marks.
At least 50% marks of the total marks combined in theory and practicals /clinical assigned for internal assessment is to be obtained in a particular subject to be eligible to appear for university examinations. A candidate who has not secured requisite aggregate in the internal assessment may be permitted to appear for another internal examination as a remedial measure. If he/she successfully completes the remediation measures prescribed by the Institution / University as the case may be, only then he/she is eligible to appear for University Examination.
Students must secure at least 50% marks of the total marks (combined in theory and practical) assigned for internal assessment to be declared successful at the final university examination of that subject.
The third internal examination is the examination to be conducted on the lines of the university examination.
The students should be made aware of the results of internal assessment.
Internal assessment marks will reflect as a separate head of passing at the university examination.
The internal examination marks for the 1st, 2^{nd} & 3^{rd} internal examinations shall be submitted to the University on or before dates mentioned in University calendar.
Professionalism (punctuality, respect for teachers, communication with peers, timely completion and submission of record books and participation / presents in SGD) must be assessed and form a component of the marks given for internal assessment as shown in the table above.
A suggested format for assessing professionalism is shown below
A proportion of marks from part completion tests must be added to the internal assessment marks as shown in the table above.
Practical records must be assessed and contribute to the internal assessment marks as shown in the table above.
Level of participation in AETCOM Activities must be assessed and contribute to the practical component as shown in the table above.
The scheme for calculation of the internal examination marks is given the table above.
A clear record of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least 2 years after completion of the examination. Institutions may be asked to provide these details by the University as and when required.
The internal and formative assessments provide ideal opportunities for students and teachers to identify learning gaps. Teachers should provide high quality feedback to each student to enable them to bridge these learning gaps.
Formative assessments also enable the early identification of students who are struggling to achieve the intended learning outcomes. Early and appropriate targeted remediation must be planned for such students.
Internal assessment marks (theory/practicals) will contribute for the eligibility criteria for university exam. However, it will not contribute for the pass criteria in university exam.
Internal assessment marks will reflect under separate head in the marks card of the university examination.

The results of IA should be displayed on notice board within two weeks of the test and an opportunity provided to the students to discuss the results and get feedback on making their performance better.

A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial assessment by the institution. If he/ she successfully complete the same, he/she is eligible to appear for University Examination. Remedial assessment shall be completed before submitting the internal assessment marks online to the University.

Suggested format for assessing professionalism

Semester	Overall Attendance (5)	Timely submission of record books (5)	Takes the Trouble to Complete the Record book well (5)	Behaves respectfully with peers and teachers (5)	Participation in SGD (5)	Total (25)	Date	Signature of student	Signature of Teacher
1									
2									
3									
4									

Guidelines for scoring (to be shown to the student and discussed with them)
Attendance – 95-100% - 5; 90-94% - 4; 85-89% - 3; 80-84% - 2; 79-75% - 1
Timely submission of records – Always submits the record on time – 5; Often submits the record on time – 4; Sometimes submits the record on time – 3; Rarely submits the record on time – 2; Never submits the record on time – 1
Puts the efforts to complete the record well – Diagrams are neatly drawn with complete labelling &/or excellent writing of exercises – 5; Diagrams are of above average quality with nearly complete labelling &/or good writing of exercises – 4; Diagrams are of average quality with partial labelling &/or complete writing of exercises - 3; Diagrams are of below average quality with inadequate labelling &/or incomplete writing of exercises – 2; Diagrams are of unacceptable standard with grossly inadequate labelling &/or poor writing of exercises – 1
Behaves respectfully with peers and teachers – Always speaks politely and demonstrates the appropriate body language with peers and teachers – 5; Often speaks politely and demonstrates the appropriate body language with peers and teachers – 4; Sometimes speaks politely and demonstrates the appropriate body language with peers and teachers – 3; Rarely speaks politely and demonstrates the appropriate body language with peers and teachers – 2; Never speaks politely & demonstrates the appropriate body language with peers & teachers -1

Participation in SGD (Small Group Discussion)- Always participates / presents in SGD -5; Often participates / presents in SGD -4; Sometimes participates / presents in SGD -3; Rarely participates / presents in SGD -2; Never participates / presents in SGD -1

Annexure

Teaching Learning Methods

Teaching Learning Methods

- Didactic lectures should be made more interactive by encouraging the more involvement of the students. In the present digital era, student's involvement is more with usage of technology. For examples, many polling sessions, quizzes etc can be done using google slides and other apps like Kahoot, Socrative, menti.com etc.
- Small group discussion (SGD) should be planned properly and discussed among the faculty members before taking the class. As for as possible, uniformity should be maintained in the SGD by various facilitators. Case based learning (CBL) and problem-based learning (PBL) may be used to make the learner understand and learn about the various aspects in order to achieve the particular competency.
- Encourage the students learn themselves through self-directed learning (SDL). SDL sessions may be planned with objectives in order to cover the particular competency. These sessions may be conducted by providing learning material (research articles, public news, videos, etc) by a teacher and ask the students to search on a particular topic. Students should learn themselves by going through available resources and come back to classes allotted for SDL sessions where teacher able to connect the learning of students in order to achieve the competency.
- Integrated classes should be planned in order to cover the competency involving the topics from different subjects. These classes can be taken using Nesting, Temporal Coordination or Sharing. Case linkers may be used to link the topic/subject area among different subjects/ departments.
- Skills should be taught using the clinical cases at hospital wards/casualty/EMD, simulation in skills labs and/or departmental demonstration rooms. Case scenarios may be developed while teaching at skills lab and/or demonstration rooms.

Example for teaching the clinical examination in poisoning:

- **Case scenario:** A farmer working in a field was brought with history of breathlessness, vomiting, excessive sweating and muscle twitching. On examination, the pupils were constricted and heart rate was decreased. He had defecated in his cloths. Smell of kerosene was present in his breath. Even the cloths were soiled smelling kerosene.
- **Demonstration of clinical examination:** Mannequins or standardised patients in the skills lab may be used for examination and recording of vital parameters like pulse, BP, RR, SPO2 and state of pupils. Also,

response to treatment can be.

- **Diagnosis and management:** Discuss the differential diagnosis, investigations and definitive diagnosis. Discuss the various treatment modalities. The response to drugs used for treatment can be demonstrated using high fidelity mannequins.
- **Medicolegal responsibilities:** The medicolegal responsibilities such as preservation of gastric lavage material, medicolegal documentation, and police intimation should be demonstrated in a simulated environment and using standard formats.

Example for teaching the topic Injuries/ Trauma withintegration:

Linker Case: A 30-year-old male while travelling in a motor bike met with an accident with a car coming from opposite side. As a result of this, he sustained multiple injuries (can be displayed in the form of photographs). He was brought by his friend to the hospital. On reaching the hospital, patient was in semiconscious state with difficulty in breathing.

Subjects for integration: Forensic Medicine, General Surgery.

- Forensic Medicine: Topics covered in this subject include different types of mechanical injuries possible in such accidents and other relevant topics related to mechanical injuries. [Competencies to be covered: FM 3.3, 3.4, 3.8]
- General Surgery: First aid treatment, Basic life support, Transportation of patient, Basic management of injuries at hospital. [Competencies to be covered: SU 17.1, 17.2, 17.3]

Type of Integration:

- Horizontal: Temporal coordination can be done if is done in the same phase.
- Vertical: Nesting can be used if it is done in two different phases.

Additional details to case scenario:

- In addition to linker case, case details need to be added by respective departments depending on the progression of the class (such as clinical features, internal injuries, postmortem findings etc).
- Case details may be introduced step by step in order to involve students in discussion.

Example for teaching the topic Drugs / Substances of abuse with integration:

Linker Case: A 15-year-old student was brought by his parents to the hospital with a history of addiction to drugs and behavioral changes since 6 months. On examination, the patient was anxious, restless and was hesitant to talk.

Subjects for integration: Pharmacology, Forensic Medicine, Psychiatry.

- Pharmacology: Topics covered in this subject include Definitions, List of drugs of abuse, Mechanism of drug addiction. [Competencies to be covered: PH 1.22, 1.23]
- Forensic Medicine: Description of features and management of drugs/substances of abuse. [Competencies to be covered: FM 12.1]
- Psychiatry: Etiology, clinical features, treatment of drugs/substances of abuse. [Competencies to be covered: PS 4.1, 4.2, 4.3, 4.4, 4.6, 4.7]

Type of Integration:

- Horizontal: Temporal coordination/ Sharing can be done if is done in the same phase.
- Vertical: Nesting can be used if it is done in two different phases.

Additional details to case scenario:

- In addition to linker case, case details need to be added by respective departments depending on the progression of the class (such as clinical features, behavioral changes, complications, legal problems etc).
- Case details may be introduced step by step in order to involve students in discussion.

Annexure

Integration topics

Integration: The teaching should be aligned and integrated horizontally and vertically recognizing the importance of medico-legal, ethical and toxicological issues as they relate to the practice of medicine.

Integration of Forensic Medicine with Other departments:

The suggested topics, competencies and the subjects/departments for integrated teaching are shown in below table.

Sl. No.	*Topic for integration*	*Subject [Competencies]*
1	Wound healing	General Surgery [SU 5.1, 5.2, 5.3, 5.4] Pathology [PA 5.1] **Forensic Medicine [FM 3.6]**
2	General toxicology	**Forensic Medicine [FM 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8]** Pharmacology [PH 1.4, 1.5, 1.11] General Medicine [IM 21.1, 21.5, 21.6, 21.7, 21.8]
3	Insecticides	**Forensic Medicine [FM 8.6]** Pharmacology [PH 1.52] Community Medicine [CM 3.8]

4	Corrosives	**Forensic Medicine [FM 9.1]** General Medicine [IM 21.3]
5	Heavy metal poisoning	**Forensic Medicine [FM 9.2, 9.3**] Pharmacology [PH 1.53]
6	Plant poisons	General Medicine [IM 21.2] **Forensic Medicine [FM 10.1]**
7	Snake, scorpion, insect bites	**Forensic Medicine [FM 11.1]** General Medicine [IM 20.1, 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 20.8, 20.9]
8	Alcohol disorders	Pharmacology [PH 1.20, 1.21] Pathology [PA 12.1, 25.4] General Medicine [IM 5.5] **Forensic Medicine [FM 9.4]**
9	Drugs of abuse	Pharmacology [PH 1.22, 1.23] **Forensic Medicine [FM 12.1]** Psychiatry [PS 4.1, 4.2, 4.3, 4.4, 4.6, 4.7]

Annexure

Reference Books and Journals

Suggested references (as per Vancouver style): (Specification mentioned such as edition – subject to change with newer edition)

- **Basic references**

1) Reddy KSN, Murthy OP. The Essentials of Forensic Medicine and Toxicology. 34th edition, 2017. Jaypee Brothers Medical Publishers, New Delhi.
2) Pillay VV. Textbook of Forensic Medicine and Toxicology, 19th edition, 2019, Paras Medical Publishers, Hyderabad.
3) Karmakar RN. Forensic Medicine and Toxicology: Theory, Oral and Practical, 5th edition, 2015. Academic Publishers, Kolkata.
4) Nandy A. Principles of Forensic Medicine including Toxicology, 3rd edition, 2010, New Central Book Agency.
5) Subrahmanyam BV. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology, 8th edition, 2019, CBS Publishers.
6) Guharaj PV, Gupta SK. Forensic Medicine and Toxicology, 3rd edition, 2019, Universities Press (India) Private Ltd., Hyderabad.
7) Bardale R. Principles of Forensic Medicine & Toxicology, 2nd edition, 2016, Jaypee Brothers Medical Publishers, New Delhi.
8) Biswas G. Review of Forensic Medicine & Toxicology, 3rd edition, 2015, Jaypee Brothers Medical Publishers, New Delhi.
9) Vij K. Textbook of Forensic Medicine and Toxicology: Principles and Practice, 6th edition, 2014, Elsevier Ltd.
10) Ignatius PC. Forensic Medicine and Toxicology, 4th edition,

2019, Elsevier India.

11) Pillay VV. NACPFMT's Practical Medicolegal Manual: Medical Ethics, Clinical Forensics & Toxicology, 1st edition, 2019, Paras Medical Publishers, Hyderabad.
12) Bakkannavar SM. Forensic Medicine and Toxicology: Practical manual, 1st edition, 2018, Elsevier India.
13) Borah. Medical Ethics for Students and Doctors, 1st edition, 2014, Ahuja Publishers.
14) Aggrawal Anil. Essentials of Forensic Medicine & Toxicology for MBBS, 2nd edition , 2021, Avichal Publishing Company, New Delhi,

- **Advanced references (may also include journals/ web/ other electronic sources).**

1) Kannan K. Modi's Medical Jurisprudence and Toxicology, 26th edition, 2019, LexisNexis.
2) Karmakar RN. JB Mukherjee's Forensic Medicine and Toxicology, 2007, Academic Publishers.
3) Dogra TD, Rudra A. Lyon's Medical Jurisprudence and Toxicology. 11th edition (reprint), 2018. Delhi Law House, Delhi.
4) Saukko P, Knight B. Knight's Forensic Pathology. 4th edition. 2015, CRC Press
5) Pillay VV. Modern Medical Toxicology, 4th edition, 2013, Jaypee Brothers Medical Publishers Ltd., New Delhi.
6) Journal of Karnataka Medico-Legal Society.
7) Journal of South India Medico-Legal Association.
8) Journal of Indian Academy of Forensic Medicine.
9) Journal of Indian Society of Toxicology
10) Journal of Forensic and Legal Medicine
11) Journal of Forensic Sciences
12) Indian Journal of Medical Ethics

CLINICAL SUBJECTS IN PHASE II

GENERAL GUIDELINES-

A) 75 hours of lectures are allotted to Clinical subjects of which

- 25 hours each for Medicine, Surgery and Gynecology & Obstetrics.
- At least 3 hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories. Hours may be distributed weekly or as a block in each posting based on institutional logistics.
- The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday).

B) Internal Assessment-

- Regular periodic examinations shall be conducted throughout the course.
- There will be 3 internal assessment examinations in each clinical subject. The structure of the internal assessment examinations should be like the structure of University examinations.
- It is mandatory for the students to appear for all the internal assessment examinations.
- First internal assessment examination (THEORY) will be held at the end of 1st professional, second internal assessment examination will be held at the end of 2nd professional and third internal assessment examination will be held at the end of 3rd professional.
- An end of posting clinical internal assessment shall be conducted for each clinical posting in each professional year.
- Pattern of first and second Internal Assessment are left to the discretion of the individual institute. However, third internal assessment has to be conducted in the same pattern of the University exam

- Additional internal assessment examination for absent students can be considered due to genuine reason after approval by the head of the department. It should be taken before the submission of internal assessment marks to the University.
- Internal assessment marks allotment for theory and practical for the first and second internal assessment are left to the discretion of the respective institutes. Marks allotted in the third (final) Internal Assessment should be preferably for 100 marks each for Theory and Practical.
- 20% of the internal assessment marks should be from Formative Assessment in Practical internal assessment

- Feedback in Internal Assessment - Feedback should be provided to students throughout the course so that they are aware of their performance and remedial action can be initiated well in time. The feedbacks need to be structured and the faculty and students must be sensitized to giving and receiving feedback.
- The results of IA should be displayed on notice board within two weeks of the test and an opportunity provided to the students to discuss the results and get feedback on making their performance better.
- It is also recommended that students should sign with date whenever they are shown IA records in token of having seen and discussed the marks.
- Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.
- Internal assessment should be based on competencies and skills.
- Criteria for appearing in University examination: Learners must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination.
- **Average marks obtained in all three internal assessments should be calculated to 40 marks**.
- A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial assessment by the institution. If he/ she successfully complete the same, he/she is eligible to appear for University Examination. Remedial assessment shall be completed before submitting the internal assessment marks online to the University.

Second Professional teaching hours

Subjects	Lectures (hours)	Small group learning (Tutorials / Seminars) /Integrated learning (hours)	Clinical Postings (hours) *	Self - Directed Learning (hours)	Total (hours)
Pathology	80	138	-	12	230
Pharmacology	80	138	-	12	230

Microbiology	70	110	-	10	190
Community Medicine	20	30	-	10	60
Forensic Medicine and Toxicology	15	30	-	5	50
Clinical Subjects	**75****	-	540***		615
Attitude, Ethics & Communication Module (AETCOM)		29	-	8	37
Sports and extracurricular activities	-	-	-	28	28
Total	-	-	-	-	1440

Clinical postings

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

GENERAL MEDICINE

CURRICULUM FOR MBBS PHASE II

CHAPTER: OBESITY & METABOLISM:

NO. OF COMPETENCIES= 15; CERTIFIABLE PROCEDURES= 0 (NIL)

NUMBER	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	SPECIFIC LEARNING OBJECTIVES	SUGGESTED LEARNING METHOD	TIME ALLOTTED	SUGGESTED ASSESSMENT METHOD
IM 14.1	DEFINE AND MEASURE OBESITY AS IT RELATES TO INDIAN POPULATION	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • Define Obesity as per WHO guidelines and with respect to Asia/ Indian population • List the normal BMI and calculate the same using various formulae • Classify Obesity as per WHO/ Indian guidelines	LECTURES SMALL GROUP DISCUSSION (SGD)	30 MINS	SHORT NOTE/ VIVA VOCE
IM 14.2	DESCRIBE AND DISCUSS THE AETIOLOGY OF OBESITY INCLUDING MODIFIABLE AND NON	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • List the causes of	LECTURES SMALL GROUP	30 MINS	SHORT NOTE/ VIVA VOCE
	MODIFIABLE RISK FACTORS AND SECONDARY CAUSES				reversible and irreversible weight gain • Enumerate the reasons for increased prevalence of Obesity • List the modifiable and Non modifiable causes of obesity • Describe the reasons for susceptibility to Obesity	DISCUSSION (SGD)		

IM 14.3	DESCRIBE AND DISCUSS THE MONOGENIC FORMS OF OBESITY	K	K	**NO**	**DESIRABLE TO KNOW** AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • List the Monogenic forms of Obesity Describe the variants of Monogenic forms of Obesity	LECTURES SMALL GROUP DISCUSSION (SGD)	30 mins	SHORT NOTE/ VIVA VOCE
IM 14.4	DESCRIBE AND DISCUSS THE IMPACT OF ENVIRONMENTAL FACTORS INCLUDING EATING HABITS, FOOD, WORK, ENVIRONMENT & PHYSICAL ACTIVITY ON THE INCIDENCE OF OBESITY	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • List the causes of obesity • Describe host/ environment interactions in the pathogenesis of Obesity • Discuss the role of eating habits, physical activity, food and environment in weight management and obesity	LECTURES SMALL GROUP DISCUSSION (SGD)	1 HR	SHORT NOTE/ VIVA VOCE
IM 14.5	DESCRIBE AND DISCUSS THE NATURAL HISTORY OF	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO;	LECTURES SMAL	30 MINS	SHORT NOTE/ VIVA
	OBESITY AND ITS COMPLICATIONS				• Describe the pathophysiology of obesity • Discuss the natural history of obesity • List the complications of Obesity • Describe its implications on the organ systems	L GROUP DISCUSSION (SGD)		VOCE

IM 14.13	• DESCRIBE AND ENUMERATE THE INDICATIONS, PHARMACOLOGY AND SIDE EFFECTS OF PHARMACOTHERAPY FOR OBESITY	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • List the non pharmacologi cal methods of weight loss • Enumerate the indications for using drugs in obesity management • List the drugs available in management of obesity • Describe the mechanism of action of these drugs, dosing and efficacy of these drugs • Discuss the adverse effects of these drugs	LECTURES SMALL GROUP DISCUSSION (SGD)	1 HR	SHORT NOTE/ VIVA VOCE
IM 14.14	DESCRIBE AND ENUMERATE THE INDICATIONS AND SIDE EFFECTS OF BARIATRIC SURGERY	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • Describe the concept of Bariatric Surgery and its benefits • List the indications of Bariatric surgery	LECTURES SMALL GROUP DISCUSSION (SGD)	1 HR	SHORT NOTE/ VIVA VOCE
					• List the various methods of Bariatric surgery available • Discuss each method; vertical Banded Gastroplasty, Laparoscopic banding and Roux en y procedure • Discuss the complications and side effects of these procedures • Discuss the long term advantages and disadvantages of Bariatric surgery			

IM 14.15	DESCRIBE AND ENUMERATE AND EDUCATE PATIENTS, HEALTH CARE WORKERS, & PUBLIC ON MEASURES TO PREVENT OBESITY AND PROMOTE HEALTHY LIFESTYLE	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • Discuss the benefits of exercise and healthy balanced diet • Discuss the disadvantages of sedentary lifestyle and unhealthy eating • Enumerate the side effects and complications of obesity • Discuss the concept of social well being andhealthy eating	LECTURES SMALL GROUP DISCUSSION (SGD)	1HR	SHORT NOTE/ VIVA VOCE
						TOTAL	**6 HOURS**	

CHAPTER: NUTRITIONAL & VITAMIN DEFICIENCIES:

NO. OF COMPETENCIES= 05; CERTIFIABLE PROCEDURES= 0 (NIL)

NUMBER	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/S H/P	CORE Y/N	SPECIFIC LEARNING OBJECTIVES	SUGGESTED ASSESSMENT METHOD	TIME ALLOTTED	SUGGESTED ASSESSMENT METHOD

IM 23. 1	DISCUSS AND DESCRIBE THE METHODS OF NUTRITIO N AL ASSESSM EN T IN AN ADULT AND CALCULAT IO N OF CALORIC REQUIRE ME NTS DURING ILLNESSE SS	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • Discuss the Physiology of Nutrition and Energy Balance • Describe the regulation of Energy balance • List the Macronutrie nts and Micronutrie nts • Describ e the consequences of Over nutrition and Under Nutrition • Discuss the Dietary recommendatio ns of macro and micro nutrients • Calculat e caloric requiremen	LECTURE S SMALL GROUP DISCUS SIO N (SGD) VISIT TO OPD/ WARDS TO CALCUL AT E BMI, OTHER NUTRITI O NAL PARAME T ERS	2 Hrs	WRITTE N/ VIVA VOC E
					ts in health & illness • Discuss special circumstanc es like pregnancy and lactation • Enumer a te the anthropome tric measureme nts and their methods			
IM	DISCUSS	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • Discuss the normal physiology of Protein metabolism • List the	LECTURES		
23.2	AND DESCRIBE THE CAUSES AND CONSEQU E NCES OF PROTEIN CALORIC MALNUTRI TI					SMALL GROUP DISCUSSI O N (SGD) VISIT TO	1 Hr	WRITTE N/ VIVA VOCE

	ON IN THE HOSPITAL				causes of Protein and Calorie malnutrition * Discuss consequenc es of Starvation and Famine * Enumera te the investigatio ns available commonly to assess protein malnutrition * Describe the concept of 'Under Nutrition in the Hospital' Discuss	WARDS AND CALCULAT E CALORIC REQUIREM ENTS FOR IN-PATIENTS		
					Energy Balance in old age • List the Nutritional support available in the hospital and describe their details			
IM	DISCUSS	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; List the fat and water soluble vitamins • List the common causes of vitamin deficiencies • Describ e vitamin A deficiency causes, its eye signs and	LECTURE S	4 Hrs	WRITTE
23.3	AND DESCRIBE THE AETIOLOG Y, CAUSES, CLINICAL MANIFEST A TIONS, COMPLICA TI ONS, DIAGNOSIS AND MANAGEM E NT OF COMMON					SMALL GROUP DISCUSSI O N (SGD) VISIT TO OPD TO SEE PATIENTS WITH SUCH DEFICIEN C IES		N/ VIVA VOCE

	VITAMIN				clinical manifestati ons. iscuss on the managemen t of it. • Discuss on Vitamin A toxicity and its features • Describ e vitamin D deficiency causes, its clinical manifestati ons. Discuss on the managemen t of it. Describe vitamin E			
	DEFICIENC IES							
					deficiency causes, its clinical manifestati ons. Discuss on the managemen t of it. • Describe vitamin K deficiency causes, its clinical manifestati ons. Discuss on the managemen t of it. • Describe vitamin B1 (Thiamine) deficiency causes, its clinical manifestati ons. Discuss on the managemen t of it. • Describe vitamin B2 (Riboflavin) deficiency causes, its			

					clinical manifestati ons. Discuss on the managemen t of it. • Describe vitamin B 3(Niacin) deficiency/ Pellagra causes, its clinical manifestati ons. Discuss on the			

					managemen t of it. • Describe vitamin B6 (Pyridoxine) deficiency causes, its clinical manifestation s. Discuss on the management of it. • Describe vitamin B12 & Folate deficiency causes, its clinical & Neurologica l manifestati ons. Discuss on the managemen t of it. • Describe vitamin C deficiency/ Scurvy causes, its clinical manifestation s. Discuss on the management of it. • List out the Inorganic nutrients and minerals. Briefly discuss about their importance in health and Illness IRON			
IM 23. 4	ENUMERA T E THE INDICATI ON S FOR ENTERAL	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO;	LECTURE S SMALL GROUP DISCUS SIO	1 HR	WRITTE N/ VIVA VOC E

	AND PARENTERA L NUTRITIO N IN CRITICAL LY ILL PATIENTS				• Enumera te the indications for enteral and parenteral nutrition • Discuss methods to screen hospitalized patients for risk of malnutrition • Describe the enteral formulation s available and their use • List the methods to give Enteral nutrition and the procedures in their insertion- nasogastric tube feeds, percutaneo us endoscopic gastrostomy (PEG) • List the methods to give Parenteral nutrition and the formulation s • Describe the medical, legal and ethical complicatio ns and consideratio ns in the managemen t of Artificial Nutrition	N (SG D) Visit to Medical ICU and demonstr a te various feeding- Enteral and Parentera l methods & formulatio ns		
					support • Define Refeeding syndrome and its implications			

IM 23. 5	COUNSEL AND COMMUNI C ATE TO PATIENTS IN A SIMULATE D ENVIRON ME NT WITH ILLNESS ON AN APPROPRI A TE BALANCE D DIET	S	SH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO; • Identify the dietary requirements of patients either in a simulated situation (Role Play) or in actual situation • Inform the patient about the importance of Balanced diet • Demonst rate a sample balanced diet plan for the patient who is ill • Counsel the patient about the need for balanced diet for health and inform about necessary dietary changes needed for the same	DOAP SESSI ON • R O LE PLAY • At tend ward & OPD with diet couns elling sessi o ns	2 hrs	SKILL ASSES SM ENT
						TOTAL TIME	**10 HRS**	

CHAPTER: COMMON MALIGNANCIES

NO OF COMPETENCIES: 19, CERTIFIABLE PROCEDURES: 0

NUM B ER	COMPET E NCY	DOM AIN K/S/A /C	LE V E L K/ K H/ S H/ P	C O R E Y/ N	SPECIFIC LEARNING OBJECTIVES	SUGGE ST ED LEARNI N G METHO D	TIMEALL O TED	SUGGEST ED ASSESSM ENT METHOD

IM13.	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO Discuss the epidemiology of common malignancies in India Describe the disease burden of common malignancies in India List most	Lecture, Small group discussion Visit to wards	1 hour	Short notes/viva voce
					common solid organ malignancies Enumerate the risk factors for common malignancies List the modifiable risk factors of common malignancies Discuss genetics of common malignancies Describe the environmental determinants that predispose to common malignancies Discuss the role of occupation in common malignancies Enumerate the malignancies caused by radiation			
IM13.2	Describe the genetic basis of selected cancers	K	K	N	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO Discuss the genetic factors of common malignancies Enumerate inherited	Lecture, Small group discussion	1 hour	Short notes/viva voce

					cancer predispositi on syndromes and their respective malignancie s List a few malignancie s with their pattern of inheritance Enumerate the genes that predispose to malignancie s			
IM13.3	Describe the relationship between infection and cancers	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Discuss the malignancie s along with their infective agents • Enumerate the infections that predispose to common malignancie s • List the viruses and bacteria that can cause malignancie s	Lecture, Small group discussi o n Visit to wards	30 minutes	Short notes/viva voce
IM13.4	Describe the natural history, presentation, course, complications and cause of death for	K	K	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO Enumerate some malignant diseases with their local	Lecture, Small group discussi o n Visit to wards	2 hours	Short notes/viva voce
	common cancers				features/sy mptoms List the non-metastatic manifestati ons of malignant diseases and their site associations Discuss the endocrine manifestati ons of tumors Describe the cutaneous manifestati ons of			

					cancer Enumerate and describe the emergency complicatio ns of cancer Describe neurologica l paraneopla stic syndromes in cancer Describe clinical features, diagnosis and manageme nt of superior vena caval obstruction • Discuss etiology, clinical features, diagnosis of hypercalce mia in			
					malignancy Describe neutropenic sepsis Enumerate the primary tumor sites that metastasize to brain Enumerate the primary tumor sites that metastasize to the lung List the tumors that lead to liver metastasis Describe the etiology, clinical features, of bone metastasis Discuss the major cause of death in cancer			

IM13.5	Describe the common issues encountered in patients at the end of life and principles of management	K	K	N	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Enumerate the presenting problems in palliative care • Discuss the principles of palliative care • List the pharmacological treatment of pain in palliative care Discuss non-pharmacological and complementary treatments for pain in palliative care • Enumerate, discuss in brief non painful presenting problems in palliative care and their management.	Lecture, Small group discussion Visit to wards. Attend patient counseling sessions	1 hour	Short notes/viva voce
IM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer	K	K	N	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Enumerate the differences between curative and palliative care in patients with cancer • Enumerate the different modes of curative treatment in cancer • Describe in brief each of the curative therapies in cancer • Discuss biological therapies and their advantages over the other modes of treatment in cancer	Lecture, Small group discussion Visit to wards	1 hour	Short notes/viva voce

IM13.12	Describe the indications and interpret the results of Chest X Ray, mammogram, skin and tissue biopsies and tumor markers used in common cancers	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Enumerate the different methods of imaging in cancer • Discuss the role of mammogram in CA breast • Describe the tumor markers and enumerate them • Enumerate the different methods of histological analysis of a biopsy • Describe in brief the different methods of histological analysis of biopsy • Describe the role of immunohistochemistry in cancer • Describe in brief TNM classification	Bedside clinic, small group discussion Visit to wards and radiology department	1 hour 30 min	Short notes/viva voce
IM13.13	Describe and assess pain and suffering objectively in a patient with	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Enumerate the types of pain in	Bedside clinic, small group discussion	1 hour	Short notes/viva voce

	cancer				cancer and their specific clinical features Define pain & describe mechanism s of pain and its classificatio n Describe assessment and measureme nt of pain in a patient with cancer Describe pharmacolo gical treatment of pain in cancer and its side effects Describe non pharmacolo gical treatments of pain in cancer Describe the WHO analgesic ladder of manageme nt of pain Discuss the different methods of measureme nt of pain and its score	Visit wards and assess pain and write a pain scale		
IM13.14	Describe the indications for surgery, radiation and chemotherapy for	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO Enumerate the modes of	Bedside clinic, small group discussi o n Visit to	1 hour	Short notes/viva voce
	common malignancies				treatment in cancer Describe the indications and role of surgery in common malignancie s Discuss adjuvant chemothera py and its indications and adverse effects Discuss radiation therapy, its indications and adverse effects	wards		

IM13.15	Describe the need, tests involved, their utility in the prevention of common malignancies	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO Enumerate the different investigations required for the screening and prevention of common malignancies Discuss the need for various tests and investigations in common malignancies Describe the role of cytogenetic analysis in prevention of cancer	Bedside clinic, small group discussion Visit to wards	30 min	Short notes/viva voce
					• List and discuss the imaging modalities in cancer			
IM13.16	Demonstrate an understanding and needs and preferences of patients when choosing curative and palliative therapy	A/C	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Enumerate indications of palliative therapy in cancer • Discuss different forms of palliative therapy in cancer • Enumerate indications of curative therapy in cancer • Discuss different forms of curative therapy in cancer	Bedside clinic, small group discussion Visit to wards	30 min	Short notes/viva voce

IM13.17	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Enumerate the indications of narcotics/opioids in pain alleviation in patients with cancer • Enumerate and discuss about opioid use for pain in cancer • Describe WHO analgesic ladder Describe opioid toxicity Enumerate , discuss, side effects of opioid and its management	Bedside clinic, small group discussion Visit wards and learn to counsel patients regarding side effects of narcotics and their advantages at the same time	30 min	Short notes/viva voce

IM13.18	Describe and discuss the ethical and the medico legal issues involved in end of life care	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Describe step wise how to manage a patient who is dying due to cancer • Discuss ethical issues at the end of life in a patient with terminal cancer • Discuss "talking about and planning towards dying" in a patient with terminal cancer • Describe euthanasia and its role in terminal cancer	Bedside clinic, small group discussion Visit wards and learn to discuss ethical issues with patient relatives	30 min	Short notes /viva voce
IM13.19	Describe the therapies used in alleviating suffering in patients at the end of life	K	KH	Y	AT THE END OF THE SESSION THE STUDENT SHOULD BE ABLE TO • Enumerate the pharmacological and non-	Bedside clinic, small group discussion Visit wards	1 hour	Short notes/viva voce

					pharmacolo gical treatment in terminal cancer • Enumerat e non-pharmacolo gical and complemen tary treatment in terminal cancer • Describe palliative treatment of breathlessn ess and cough in patients with terminal cancer • Describe the manageme nt of GI disturbance s in terminal cancer • Describe how to manage the psychosocia l factors in terminal cancer	and learn to discuss palliativ e therapy with patient and their relative s		

Hematological

Recommended Books

1. Davidson’s Principles and Practice of Medicine, 23rdEd., 2018, Churchil Livingston, London.
2. API Text Book of Medicine 11thed, 2019.
3. Swash M, Hutchison’s Clinical Methods. 24th Edition, 2017
4. Chamberlain’s Symptoms and Signs in Clinical Medicine 13th Edition, ELBS, 2010

Reference Books

1. Harrison's Principles of Internal Medicine 20th Ed 2018 . McGraw Hill
2. Macleod’s Clinical Examination ISE 14th ed.

SVIMS-Sri Padmavathi Medical College for Women, Tirupati
Department of General Surgery
2nd year MBBS BOS

Sl.No.	Competencies	Domain	Level (K/KH/SH/P)	Core (Y/N)	Suggested teaching learning method	Suggested Assessment method	Vertical integration	Horizontal Integration	No. of Hours		If integration is there break up of hours
									Theory	clinics	
Topic: Relationship of social and behavioural to health and disease											
SU1.1	Describe Basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators	K	KH	Y	Lecture ,Small group discussion	Written/ Viva voce	Physiology, Biochemistry		2 hrs		General surgery – 1 hr Physiology- 30 min Biochemistry –30 min
SU1.2	Describe the factors that affect the metabolic response to injury.	K	KH	Y	Lecture,Small group discussion	Written/ Viva voce	Biochemistry, Pathology		1 hr		General surgery – 30 min Biochemistry –30 min
SU1.3.	Describe basic concepts of perioperative care	K	KH	Y	Lecture, Bed side clinic, Small group discussion	Written/ Viva voce	Anaesthesia, EMD		2 hrs		
SPECIFIC LEARNING OBJECTIVES At the end of the teaching and learning session 1st phase MBBS student should be able to : • Discuss classical concepts of homeostasis • Define “milieu intérieu’’ and homeostasis • Discuss the graded nature of the injury response • Describe the mediators of the metabolic response to injury • Discuss systemic inflammatory response syndrome following major injury											

• Discuss the metabolic stress response to surgery and trauma: the 'ebb and flow' model • Enumerate key catabolic elements of the flow phase of the metabolic stress response • Discuss the changes in body composition following injury • Enumerate avoidable factors that compound the response to injury • Discuss concepts behind enhanced recovery after surgery											
Topic: Shock											
SU2.1	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Pathology, Physiology		4 hrs		General surgery – 30 min Pathology – 15 min Physiology – 15 min
SU2.2	Describe the clinical features of shock and its appropriate treatment	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Anaesthesia		1 hr		
SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care	A/C	SH	y	DOAP session	Skill assessment	AETCOM			30 min	
SPECIFIC LEARNING OBJECTIVES At the end of the teaching and learning session 1st phase MBBS student should be able to : • Discuss cellular,microvascular pathophysiological changes • Discuss pathophysiological changes cardiovascular,respiratory,renal,endocrine systems • Classify shock- hypovolemic,cardiogenic,obstructive,distributive,endocrine • Discuss severity of shock-compensated,decompensated ,mild,moderate,sever • Record Pitfalls- capillary refill,tachycardia,blood pressure • Discuss the effects on each system • Describe Consequences of shock • Enumerate effects of multi organ failure											

- Discuss in detail on resuscitation. Fluid therapy, Type of fluids
- Discuss dynamic fluid response
- Describe Vasopressor and inotropic support
- Monitor and record vitals
- Discuss End points of resuscitation and 'occult hypoperfusion'
- Discuss Resuscitation algorithms
- Inform and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care

Topic: Blood and blood components											
SU 3.1.	Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Pathology, Anaesthesia		4 hrs		General surgery – 30min Pathology – 30 min
SU 3.2	Observe blood transfusions.	S	SH	Y	Small group discussion, DOAP session	Skills assessment/ Log book				30min	
SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.	A/C	SH	Y	DOAP session	Skills assessment				15 min	

SPECIFIC LEARNING OBJECTIVES

At the end of the teaching and learning session 1st phase MBBS student should be able to :

- Discuss pathophysiology of haemorrhage
- Describe revealed and concealed haemorrhage
- Define Primary, reactionary and secondary haemorrhage
- Define Surgical and non-surgical haemorrhage
- Disuss the Management of haemorrhage
- Elicit history of blood transfusion, Blood and Blood substitutes
- Enumerate indications for blood transfusion
- Perform Blood groups and cross-matching
- Enumerate transfusion reaction
- Discuss Complications of procedure of blood transfusion
- management of coagulopathy

Topic: Burns											
SU4.1	Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Physiology, Forensic medicine		2 hrs	30 min	General surgery- 15 min Physiology - 15 min min
SU4.2	Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			2 hrs		
SU4.3	Discuss the Medicolegal aspects in burn injuries.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Forensic medicine		1hr		
SU4.4	Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.	A/C	SH	Y	Small group discussion, Role play, Skills assessment	Viva voce/Skill assessment	Anaesthesia			30min	

SPECIFIC LEARNING OBJECTIVES

- At the end of the teaching and learning session 1st phase MBBS student should be able to :
- Describe area and depth of burns
- Discuss on p revention of burns
- Discuss pathophysiology of burn injury
- Define warning signs of burns to the respiratory system
- Discuss on injury to the airway and lungs
- Describe dangers of smoke, hot gas or steam inhalation
- Discuss Inflammation and circulatory changes
- Discuss the shock reaction after burns

- Discuss other life-threatening events with major burns
- Describe immediate care of the burn patient
- Discuss prehospital care and hospital care
-]define the criteria for acute admission to a burns unit
- Assess burn wound-size, area and depth
- Discuss fluid resuscitation
- Describe escharotomy
- Surgery for the acute burn woun
- Discuss minor burns,Non-thermal burn injury
- Discuss recent advances
- Discuss Medicolegal aspects in burn injuries
- Discuss Outcome and rehabilitation demonstrating empathy and care.

Topic: Wound healing and wound care											
SU5.1	Describe normal wound healing and factors affecting healing.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Pathology		1 hr		General surgery -30 min Pathology – 30 min
SU5.2	Elicit, document and present a history in a patient presenting with wounds.	C	SH	Y	DOAP session	Skill assesment				30 min	
SU5.3	Differentiate the various types of wounds, plan and observe management of wounds.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			2 hrs		
SU5.4	Discuss medico legal aspects of wounds	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Forensic medicine		1hr		

SPECIFIC LEARNING OBJECTIVES

At the end of the teaching and learning session 1st phase MBBS student should be able to :

- Enumerate factors influencing healing of a wound

- List out phases of wound healin
- Discuss normal healing in specific tissues
- Classify wound closure and healing
- Enumerate types of wounds – tidy versus untidy
- Describe Management of acute woun
- Discuss specific wounds
- Discuss Compartment syndromes
- Discuss Chronic wounds
- Discuss pressure sores- frequency, staging, vacuum assisted closure•
- Discuss Necrotising soft-tissue infections
- Discuss Hypertrophic scars,keloids
- Discuss Contractures
- Discuss Medico legal aspects of wounds•

Topic: Surgical infections

SU6.1	Define and describe the aetiology and pathogenesis of surgical Infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Microbiology		2 hrs		General surgery-30 min Microbiology – 30 min
SU6.2	Enumerate Prophylactic and therapeutic antibiotics Plan appropriate management	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	Pharmacology		2 hrs		

SPECIFIC LEARNING OBJECTIVES

At the end of the teaching and learning session 1st phase MBBS student should be able to :

- Enumerate Koch's postulates
- Discuss microbiology of surgical infection
- List out sources of infection
- Discuss factors that determine whether a wound will become infected
- Presentation of surgical infection
- Describe Southampton wound grading system
- Describe ASEPSIS wound score
- Define Specific local wound infections

- Define Systemic infection
- Discuss Systemic inflammatory response syndrome (SIRS)
- Discuss Viral infections relevant to surgery
- Describe on prevention of surgical infection
- List out prophylactic antibiotics
- Discuss postoperative wound infections
- Discuss Antimicrobial treatment of surgical infection

Recommended Books for General surgery:

1. Baily & Love, A Short Practice of Surgery, Ed. 27, 2018
2. Das S, Clinical Methods in Surgery, Ed. 14, S Das 13 Old Mayors, Calcutta;
3. SRB's Manual of Surgery, Book by Bhat M. Sriram
4. Bed side clinics in surgery by Makhan Lal Saha

Reference books

1. Sabiston textbook of surgery, 20th edition, Elsevier.
2. Schwartz'z Principles of surgery, 11th edition, Mcgraw Hill Education
3. Hamilton bailey's demonstration of physical signs in clinical surgery, 19th edition, CRC press

OBSTETRICS AND GYNAECOLOGY

CURRICULUM FOR MBBS PHASE II

Topic: Anatomy of the female reproductive tract (Basic anatomy and embryology)

Number of Competencies: 01

Number of procedures that require certification: nil

Number of hours required: 2 hours

Number	COMPETENY The student should be able to:	Domain K/S/A/C	Level K/K/SH/P	CORE Y/N	Suggested Teaching/ Learning method	Vertical Integration	Horizontal Integration	Number of hours
OG 1.1	Describe and discuss the development and anatomy of the female reproductive tract, relationship to other pelvic organs, applied anatomy as related to Obstetrics and Gynaecology	K	KH	Y	Lecture, Small group discussion	Human Anatomy		2 HOURS
OG 1.2	Describe the development of male & female reproductive system	K	KH	Y	Lecture	Obstetrics and Gynecology		

SPECIFIC LEARNING OBJECTIVES
At the end, student should be able to : • Discuss the anatomy of external genitalia and internal genital organs • Describe the blood supply, nerve supply and lymphatics to the pelvic organs • Describe the muscles and fascia in relation to the pelvic organs • Describe the structure of female urethra , urinary bladder and course of pelvic

Topic: Physiology of conception

Number of Competencies: 01

Number of procedures that require certification: nil

Number of hours required: 2 hours

No.	COMPETENCY The student should be able to:	Domain K/S/ A/C	Level K/KH/ SH/P	CORE Y/N	Suggested Teaching/ Learning method	Vertical Integration	Horizontal Integration	Number of hours
OG 2.1	Describe the physiology of ovulation, menstruation, fertilization, implantation and gametogenesis	K	K	Y	Lecture, seminars	Physiology		2 HOU RS
OG 2.2	Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it.	K	KH	Y	Lecture, Small Group discussion	Obstetrics and Gynecology		

SPECIFIC LEARNING OBJECTIVES
At the end, student should be able to : • Describe about the morphology of the oocyte, development of graafian follicle and selection and maturation of the dominant follicle during a natural cycle • Discuss Ovulation , Gametogenesis and morula formation • Discuss the phases of menstruation – endometrial cycle and even about hormones role • Draw the structure of graafian follicle and blastocyst

Topic: Development of the fetus and the placenta

Number of Competencies: 01

Number of procedures that require

certification: nil Number of hours required: 1

hours

Number	COMPETENCY The students should be able to:	Domain K/S/A /C	Level K/KH/ SH/P	CORE Y/N	Suggested Teaching/ Learning method	Vertical Integration	Horizontal Integration	Number of hours
OG 3.1	Describe and discuss the basic embryology of fetus, factors influencing fetal growthand development, anatomy of placenta	K	K	Y	Lecture, Small group discussion	Human Anatomy		2 HOURS
	Describe the stages and					Obstetrics and		

OG 3.2	consequence s of fertilization	K	KH	Y	Lecture	Gynecology		
OG 3.3	Describe the diagnosis of pregnancy in first trimester and role of teratogens	K	KH	Y	Lecture	Obstetrics And Gynecology		
OG 3.4	Describe formation of placenta, its physiological functions, Foetomaternal circulation & placentalbarrier	K	KH	Y	Lecture	Obstetrics and Gynecology		

SPECIFIC LEARNING OBJECTIVES

At the end, student should be able to

- Describe the development and function of placenta
- Describe the placental circulation
- Describe about the fetal membranes and functions
- Discuss the fetal circulation and changes of the fetal circulation atbirth
- Enumerate about the FDA categories and about various teratogenic drugs

Topic: Diagnosis of pregnancy

Number of Competencies: 01

Number of procedures that require certification: nil

Number of hours required: 2 hours

Number	COMPETENCY The student should be able to:	Domain K/S/ A/C	Level K/KH/ SH/P	CORE Y/N	Suggested Teaching/ Learning method	Vertical Integration	Horizontal Integration	Number of hours
OG 4.1	Describe, discuss and demonstrate the clinical features of pregnancy, derive and discuss its differential diagnosis, elaborate the principles underlying and interpretation of pregnancy tests	S	SH	Y	Lecture, small group discussion, beside clinic			**2 HOURS**

SPECIFIC LEARNING OBJECTIVES
At the end, student should be able to • What are the clinical features of pregnancy ? • How to diagnose pregnancy ? • What are pregnancy kits ? • differential diagnosis of pregnancy.

Topic: Maternal changes in pregnancy

Number of Competencies: 01

Number of procedures that require certification: nil Number of hours required: 2 hours

No.	COMPETENCY The student should be ableto:	Domain K/S/A/C	Level K/KH/ SH/P	CORE Y/N	Suggested Teaching/ Learning method	Suggested Assesment method	Number required to certify	Vertical Integration	Horizontal Integration	Number of hours
OG 5.1	Describe and Discuss the Changes In the Genital tract, cardiovascular system, respiratory, haematology, renal and gastrointestinal system in pregnancy	K	KH	Y	Lecture, seminars	Theory		Physiology		2 HOURS
OG 5.2	Describe and Discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry -disorders associated with it.	K	KH	Y	Lecture, Small group discussion	Theory, clinical classes/ viva voce		Obstetrics and Gynecology		

SPECIFIC LEARNING OBJECTIVES
At the end, student should be able to 1. Discuss the changes in pelvic organs during pregnancy 2. Discuss the physiological changes in different organ systems during pregnancy Discuss the changes in pelvic organs during pregnancy

TOPIC: ANTENATAL CARE

Number of Competencies: 08

Number of procedures that require certification: nil Number of hours required: 4 hours

Number	COMPETENCY The student should be ableto:	Domain K/S/A/C	Level K/KH/ SH/P	CORE Y/N	Suggested Teaching/ Learning method	Suggested Assesment method	Number required to certify	Vertical Integration	Horizontal Integration	Number of hours
OG 6.1	Enumerate, describe and discuss the objectives of antenatal care, assessment of period of gestation; screening for highrisk factors	K	K H	Y	Small group discussion, Bedside clinics, Lecture	Theory/ clinicsl classes/ Viva voce/ Skill assess ment		Community Medicine		**1 HOUR**
OG 6.2	Elicit document and present an obstetric history including menstrual history, last menstrual period, previous obstetric history, comorbid	KS	SH	Y	Small group discussi on, Bedside clinics, Lecture	Theory/ clinical classes/ Viva voce/ Skill assess ment				**1 HOUR**

	conditions, past medical history and surgical history									
OG 6.3	Describe, demonstrate, document and perform an obstetrical examination including a general and abdominal examination and clinical monitoring g of maternal and fetal well-being;	K/S	SH	Y	Bedside clinic, DOAP session	Skill assessmen t				1 HOUR
OG 6.4	Describe and demonstrat e clinical monitoring of maternal and fetal well-being	K/S	SH	Y	Bedside clinic, DOAP session, Small group discussion	Skill assess ment/ theory/ clnical classes/ Viva voce				1 HOUR
OG 6.5	Enumerate the indications for and types of vaccination in pregnancy	K	KH	Y	Lecture, Small group discussion	Clinical classes/ Viva voce				
OG 6.6	Conduct Antenatal examination of women independently and apply at-risk approach in antenatal care	S	SH	Y	Bedside clinics	Skill Station		Community Medicine	Obstetrics and Gynecology	
OG 6.7	Enumerate and describe the methods of screening high risk groups and common health problems	K	KH	Y	Small group discussion, Lecture	Theory/ clinical classes / Viva voce		Pediatrics, Obstetric s & Gynaeco logy		

SPECIFIC LEARNING OBJECTIVES
At the end, student should be able to : ▪ Discuss history taking ▪ Discuss the estimation of gestational age and prediction of expected date of delivery ▪ Discuss antenatal advice and follow up ▪ Discuss screening of high risk pregnancy ▪ Discuss vaccinations in pregnancy

Topic: Complications in early pregnancy

Number of Competencies: 05

Number of procedures that require

certification: nil Number of hours required: 3 hours

No.	COMPETENCY The student should be ableto:	Domain K/S/A/C	Level K/KH/ SH/P	CORE Y/N	Suggested Teaching/ Learning method	Suggested Assesment method	Number required to certify	Vertical Integration	Horizontal Integration	Number of hours
OG 7.1	Classify, define and discuss the aetiology and management of abortions including threatened, incomplete, inevitable, missed and septic abortion	K	K H	Y	Lecture, Small group discussi on	Clinical classes/ Viva voce				**2 HOURS**
OG 7.2	Describe the etiopathology, impact on maternal and fetal health and principles of management of hyperemesis				Lecture, Small group	Clinical classes/ Viva				1 HOUR

SPECIFIC LEARNING OBJECTIVES
At the end of the teaching and learning session student should be able to : ▪ Define abortion. ▪ Discuss about the types and management of abortion ▪ Define hyperemesis and discuss the causes and management

TOPIC: NORMAL LABOUR

Number of Competencies: 05

Number of procedures that require

certification: nil Number of hours required: 5

hours

No.	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	CORE Y/N	Suggested Teaching/ Learning metho d	Suggested Assesment method	Number required to certify	Vertical Integration	Horizontal Integration	Number of hours
OG 8.1	Enumerate and Discuss the physiology of normal labour , mechanism of labour in occipito-anterior presentation ; monitoring of labour including partogram ; conduct of labour, pain relief ; principles of induction and acceleration of labour ; management of third stage of labour	K/S	K H	Y	Lecture, Small group discussi on(with models / videos / AV aids etc)	Theory / clinical assess ment/ viva				**5 HOURS**

SPECIFIC LEARNING OBJECTIVES

At the end, student should be able to :

- Define labour
- Discuss physiology of labour
- Discuss the mechanism of labour
- Discuss management of labour
- Describe the methods of induction of labor -medical, surgical and combined

TOPIC: NORMAL PUERPERIUM

Number of Competencies: 04

Number of procedures that require certification: nil Number of hours required: 2 hours

Number	COMPETENCY The student should be able to:	Domain K/ S/ A/ C	Level K/ KH /SH/P	CORE Y/N	Suggested Teaching/ Learning method	Suggested Assesment metho d	Number required to certify	Vertical Integration	Horizontal Integration	Number of hours
OG1 9.1	Describe and discuss the physiology of puerperium, its complications, diagnosis and management; counselling for contraception, puerperal sterilization	K	KH	Y	Lecture, Small group discussio n, Bedside clinics	Theory/ clinical classes/ Viva voce				**2 HOURS**

SPECIFIC LEARNING OBJECTIVES
At the end, student should be able to: ▪ Describe the involution of uterus ▪ Discuss about lochia and types ▪ Discuss the physiology of lactation ▪ Discuss postnatal care ▪ Define and discuss puerperal sepsis ▪ Discuss the different methods of contraception in the postpartum period

SVIMS- SRI PADMVATHI MEDICAL COLLEGE FOR WOMEN::TIRUPATI

Minutes of the 2nd Board of Studies (2nd MBBS) Meeting held at College Council Hall, SVIMS-SPMCW on 22 .02.2021 from 10 AM onwards.

The following Members are attended the Meeting:

1. Dr. B.Siddartha Kumar - Chairman
   Dean, SVIMS & Senior Professor,
   Dept. of Medicine,
   SVIMS, Tirupati
2. Dr. Sharan B Singh.M - Member Secretary
   Principal I/c
   SVIMS-SPMC(W), Tirupati
3. Dr.K.V.Sreedhar Babu
   Registrar I/c - Member
   SVIMS, Tirupati
4. Dr.V.Suresh
   Controller of Examinations - Member
   SVIMS, Tirupati

Subject experts for Pathology:

5. Dr. N. Rukmangadha - Member
   Professor & HoD
   Dept. of Pathology,
   SVIMS, Tirupati
6. Dr. Anuradha - External expert
   Professor & HoD, Dept. of Pathology,
   S.V. Medical College, Tirupati.
7. Dr. Sandhya Sundaram - External expert
   Professor & HoD, Dept. of Pathology,
   SRMC & RI, Porur,
   Chennai

Subject experts for Pharmacology:

8. Dr. K.Umamaheswara Rao - Member
   Professor & HoD,
   Dept. of Pharmacology, SVIMS-SPMCW, Tirupati.
9. Dr. V.L.M. Raman, - External expert
   Professor of Pharmacology,
   ACSR Govt.Medical College
   Nellore
10. Dr.D.Anusha - External expert
    Professor of Pharmacology

SRMC Medical College,
Chennai

Subject experts for Microbiology:

11. HoD I/c, Dept. of Microbiology - Member
    SVIMS-SPMCW, Tirupati

12. Dr. C.H.Srinivasa Rao - External expert
    Professor & Head, Dept. of Microbiology,
    SVMC, Tirupati

13. Dr.R.Eshwar Singh - External expert
    Professor, Dept. of Microbiology,
    Gadag Institute of Medical Sciences,
    Gadag, Karnataka.

Subject experts for Community Medicine:

14. Dr. K.Nagaraj - Member
    Professor & HoD,
    Dept. of Community Medicine
    SVIMS, SPMC(W), Tirupati

15. Dr. Pankaj B Shah - External expert
    Professor & HoD,
    Dept. of Community Medicine,
    SRMC & RI,
    SRIHER, Chennai

16. Dr. G.Ravi Prabhu - External expert
    Professor & HoD of Community Medicine
    S.V.Medical College,
    Tirupati.

Subject experts for Forensic Medicine:

17. Dr. K.Bhaskar Reddy - Member
    Professor & HoD, Dept. of Forensic Medicine,
    SVIMS-SPMCW, Tirupati

18. Dr. Jagadeesh Narayana Reddy - External expert
    Professor & Head of Forensic Medicine & Toxicology,
    Vaidehi Institute of Medical Sciences & Research Centre,
    Bangalore.

19. Dr.S.Phanindra - External expert
    Professor & HoD, Dept. of Forensic Medicine,
    Narayana Medical College, Nellore.

Subject experts for Medicine:

20 Dr. Alladi Mohan - Member
Senior Professor & HoD,
Dept. of Medicine
SVIMS, SPMC(W), Tirupati

21. Dr.Kothiwale VA -External expert
Professor of Medicine &
Registrar, KAHER
Belahavi (belgaum)

Subject experts for General Surgery :

22. Dr. Y.Mutheeswaraiah, - Member
Professor & HoD,
Dept. of General Surgery,
SVIMS, SPMC(W), Tirupati

23. Dr.S. Nagamunaiah -External expert
Professor of General Surgery
SVMC, Tirupati

Subject experts for OBG :

24. Dr. K.Vanaja, - Member
Assoc. Professor & HoD I/c,
Dept. of OBG,
SVIMS, SPMC(W), Tirupati

25. Dr.N.Deepika - External expert
Associate Professor of OBG,
MVJ Medical College & Research Hospital,
HOSKOTE, Bangalore.

At the outset, the Chairman of the 2nd Board of Studies (2nd MBBS) of SVIMS-SPMCW has extended a warm welcome to all the faculty members and subject experts who attended the meeting and given permission to 1. Dr. Sandhya Sundaram, External Expert for Pathology , 2. Dr.D.Anusha, External Expert for Pharmacology , 3. Dr. R.Eshwar Singh, External Expert for Microbiology , 4. Dr. Pankaj B Shah, External Expert for Community Medicine , 5. Dr. Jagadeesh Narayana Reddy, External Expert for Forensic Medicine, 6. Dr. Kothiwale VA, External Expert for Medicine & 7. Dr.N.Deepika, External expert for OBG (On the request of the HoD i/c, OBG , the chairman permitted to replace in the place of Dr.Parthasarathi Reddy, Assoc.Prof , OBG, SVMC, Tirupati) to attend the meeting through online (via Zoom Business Software vide link(s): https://zoom.us/j/95879775736?pwd=SHUvVGs2bC9wQ3ZDd2jaUnlKT2xadz09). Further, the

Principal requested to the Chairman permitted to the Registrar also to attend the meeting through Online.

SVIMS-SPMCW is conducted the 2nd Board of Studies (2nd MBBS) Meeting for approval of the competent based Medical Education in accordance with the new regulations of MCI from the Academic Year 2020-21 onwards for implementation in SVIMS- Sri Padmavathi Medical College for Women of SVIMS University.

I. Agenda on New Regulations:

1. New Regulations and teaching approach as per CBME of MCI: **Approved**
2. Duration of the course: **Approved**
3. Promotion: **Approved**
4. Attendance: **Approved**
5. Internal Assessment: **Approved**
6. Re-Admission after discontinuation of study: **Approved**
7. Vacation: **Approved**
8. Compulsory internship: **Approved**
9. Award of degree: **Approved**
10. Classification of results: **Approved**
11. Pattern/Scheme of University Examination: **Approved**
12. Model Question papers: **Approved**
13. Student Log Book: **Approved**

II. Agenda on Syllabus of 2nd MBBS:

1. PATHOLOGY **Approved**

a. Internal assessment marks card will shown as a separate headup to the main marks card.
b. Competency numbers will be displayed the lectures DOAPs etc.,

2. PHARMACOLOGY **Approved**

3. MICROBIOLOGY **Approved**

4. COMMUNITY MEDICINE **Approved**

a. Pandemic module to be added
b. Clinical posting schedule which is prepared for 30 days to be changed for 20 days
c. Two Internal Assessment exams to be conducted in Phase I. The 1st 1A and IInd 1A exams to be conducted along with Ist 1A & IInd 1A exams of Pharmacology, Microbiology & Pathology.

5. FORENSIC MEDICINE **Approved**

6. **MEDICINE** **Approved**

a. Haematological carcinomas to be added

7. **GENERAL SURGERY** **Approved**

8. **OBSTETRICS & GYNECOLOGY (OBG)** **Approved**

III. **Agenda on the Format of the Student Log Book:** **Approved**

Dr. N. Rukmangadha
Member& HoD, Pathology

Dr. Anuradha
External Expert for
Pathology

Dr. Sandhya Sundaram
External Expert for
Pathology

Dr. K.Umamaheswara
Rao
Member& HoD,
Pharmacology

22/2/2021

Dr. V.L.M. Raman
External Expert for
Pharmacology

Dr.D.Anusha
External Expert for
Pharmacology

HoD I/c, Dept. of
Microbiology

22/2/202

Dr. C.H.Srinivasa Rao
External Expert for
Microbiology

Dr.R.Eshwar Singh
External Expert for
Microbiology

Dr. K.Bhaskar Reddy
Member& HoD,
Forensic Medicine

Dr. Jagadeesh Narayana
Reddy
External Expert for
Forensic Medicine

Dr.S.Phanindra
External Expert for
Forensic Medicine

Dr. K.Nagaraj
Member& HoD,
Community Medicine

Dr. Pankaj B Shah
External Expert for
Community Medicine

Dr. G.Ravi Prabhu
External Expert for
Community Medicine

Dr. Alladi Mohan
Member& HoD, Medicine

Dr.Kothiwale VA
External Expert for
Medicine

Dr. Y.Mutheeswaraiah
Member& HoD,
General Surgery

Dr. S.Nagamunaiah
External Expert for
General Surgery

Dr.K.Vanaja
Member& Ho D i/c OBG

Dr.N.Deepika
External Expert for OBG

Dr.V.Suresh
Controller of
Examinations
SVIMS, Tirupati

Dr.K.V.Sreedhar Babu
Registrar
SVIMS, Tirupati

Dr. M. Sharan B Singh
Principal, SVIMS-
SPMCW,
& Member Secretary

Dr. B.Siddartha Kumar
Dean, SVIMS &
Chairman

SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN

TIRUPATI – 517 507

MBBS COURSE

Agenda of
2nd BOARD OF STUDIES MEETING
for 3rd Part-I MBBS COURSE
As per MCI/NMC Regulations on Graduate Medical Education as amended up to 2019
(Applicable for students admitted to First MBBS from Academic Year 2019-20 Onwards)

SVIMS UNIVERSITY
(A University established by an Act of A.P State Legislature)
TIRUPATI

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN

TIRUPATI

MBBS COURSE

2nd Board of Studies Meeting held on **21.04.2022**
for 3rd Part-I MBBS Students

INDEX

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES,
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN TIRUPATI
MBBS COURSE

Members for BOS

1. Dr.Alladi Mohan, - Chairman
   DEAN,
   SVIMS

2. Dr. K. V. Sreedhar Babu, - Member
   REGISTRAR,
   SVIMS

3. Dr.Sharan B Singh.M, - Member
   PRINCIPAL,
   SVIMS-SPMCW.

4. Dr. V. Vanajakshamma, - Member
   Controller of Examinations,
   SVIMS.

Department of Community Medicine:

5. Dr. K. Nagaraj - Member
   Professor & Head
   Department of Community Medicine.
   SVIMS-SPMCW.

6. Dr.Pankaj Shaw, - External Expert
   Professor & HoD, Community Medicine,
   Sree Ramachandra Institute of Medical Scheinces,
   Chennai.

7. Dr.G.Ravi Prabhu, - External Expert
   Professor & Head, Community Medicine,
   S.V.Medical College,
   Tirupati

Department of ENT:

8. Dr.Prerana Anthwal, - Member
   Assistant Professor & i/c, HoD,
   Dept. of ENT, SVIMS-SPMCW.

9. Dr.GSN MURTHY, MS, - External Expert
   Professor of ENT,
   Govt ENT Hospital, Visakhapatnam.

10. Dr. G. Srinivas, - External Expert
    Assistant Professor,

Dept. of ENT,
Govt.Medical College, Cuddapah.

Department of Forensic Medicine:

11. Dr.K.Bhaskar Reddy, - Member
    Professor & Head,
    Dept of Forensic Medicine,
    SVIMS-SPMCW.

12. Dr.Jagadeesh, - External Expert
    Professor of Forensic Medicine,
    Vydehi Medical College,
    Marthanahalli, Bangalore.

13. Dr.T.T.K. Reddy, - External Expert
    Professor of Forensic Medicine,
    Sri Venkateswara Medical College, Tirupati.

Department of Ophthalmology:

14. Dr.Prabhanjan, - Member
    Assistant Professor & HoD i/c,
    Dept. of Opthalmology,
    SVIMS-SPMCW.

15. Dr.B.S.Naik, MS, - External Expert
    Professor , Dept.of Opthalmology,
    Kurnool Medical College, Kurnool.

16. Dr.Suhas Prabhakar, - External Expert
    Professor & HoD,
    Dept. of Opthalmology,
    Sri Ramachandra Medical College,
    Porur, Chennai.

Department of General Medicine:

17. Dr.Alladi Mohan, - Member
    Professor & HoD,
    Department of Medicine
    SVIMS-SPMCW.

18. Dr K. Ravi, - External Expert
    Professor & Head,
    Bangalore Medical College and Research Institute,
    Bangalore.

19. Dr.V.A.Kothiwale, - External Expert
    Professor, Department of Medicine,
    Registrar, KLE Academy of Higher Eduation and Research
    Belgavi.

Department of General Surgery:

20. Dr.Y.Mutheeswaraiah, - Member
    MS., (General Surgery),
    Professor & HoD, Dept. of General Surgery,
    SVIMS-SPMCW, Tirupati.

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PREAMBLE

The undergraduate medical curriculum of the Medical Council of India/NMC is created to ensure that the medical doctor who emerges from the MBBS training program is capable of assisting the nation to achieve its goal of health for all. In addition, it aspires to ensure that the "graduate" meets or exceeds global bench-mark in knowledge, attitude, skills and communication. This intent is at the core of the Graduate Medical Regulations, 2019.

The Graduate Medical Regulations, 2019 represents the first major revision to the medical curriculum since 1997 and hence incorporates changes in science and thought over two decades. A significant advance is the development of global competencies and subject-wise outcomes that define the roles of the "Indian Medical Graduate". Learning and assessment strategies have been outlined that will allow the student to achieve these competencies/outcomes. Effective appropriate and empathetic communication, skill acquisition, student-doctor method of learning, aligned and integrated learning and assessment are features that have been given additional emphasis in the revised curriculum.

The revised curriculum is to be implemented by all medical colleges under the ambit of Medical Council of India/NMC from August 2019. The roll out will be progressive over the duration of the MBBS course.

This document represents a compilation of the resource material that was used in the Curricular Implementation Support Program (CISP) and has attempted to provide a stepwise and comprehensive approach to implement the curriculum. It details the philosophy and the steps required in a simple and richly illustrated manner. Teaching slide decks, faculty guides and online resource material supplement this document. The document is to be used in conjunction with the Competency document, AETCOM module and the GMR document.

This draft syllabus has been created from the list of competencies mentioned in the Competency Based Curriculum (CBC) developed by the Medical Council of India /NMC for the First MBBS Batch of 2019-20.

The content to be covered under each topic has been mentioned as bulleted points. For each topic, competency numbers have been mentioned as per the competency list mentioned above. The content that is related to non-core competencies (these competencies need not be assessed in the summative examination) have been marked by an asterisk (*).

Guidelines have been suggested for the various teaching and learning (TL) methods along with the time allotted for them in the curriculum. Relevant information has also been provided about the recent additions in the CBC, namely integration, early clinical exposure (ECE), self directed learning (SDL), the AETCOM (attitude ethics and communication skills) modules and electives. Regardless of the TL methods that are used, it is expected that they follow adult learning principles. The regulations related to the internal examination and university examination have been mentioned along with detailed suggestions for the conduct of the theory, practical and viva voce examinations. The document ends with a list of learning resources that both the students and teachers can utilize.

NEW REGULATIONS FOR MBBS DEGREE COURSE

SECTION I

Introduction to CBME based curriculum:

The Medical Council of India /NMC has revised the undergraduate medical education curriculum so that the Indian Medical Graduate is able to recognize ″health for all″ as a national goal and should be able to fulfil her societal obligations. The revised curriculum has attempted to enunciate the competencies the student must be imparted and should have learnt, with clearly defined teaching learning strategies and effective methods of assessment. Communicating effectively and sympathetically with patients and their relatives has been visualized as a core area of the revised curriculum. These and other goals identified in the curriculum are to be implemented in all medical colleges under the ambit of Medical Council of India/ NMC from August 2019 and to smoothen this process Guidelines have been prepared for its effective implementation. In response to the need for a seamless introduction of the curriculum into the Undergraduate system, all medical colleges need to upgrade the teaching-learning skills of their faculty. Earlier experience with implementation of curricular changes suggests that a carefully managed, sustainable approach is necessary to ensure that every college has access to the new skills and knowledge enunciated in the new curriculum. Faculty training and development thus assumes a key role in the effective implementation and sustenance of the envisaged curricular reforms.

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 student 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 her social obligations towards realization of this goal.

b. Learn every aspect of National policies on health and devote her 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 her position as a member of the health team at the primary, secondary or tertiary levels, using her clinical skills based on history, physical examination and relevant investigations.

B. Be competent to practice preventive, promotive, curative, palliative and rehabilitative medicine in respect to the commonly encountered health problems.

C. Appreciate rationale for different therapeutic modalities; be familiar with the administration of "essential medicines" and their common adverse effects.

D. Be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

E. Possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

F. Be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:

I. Family Welfare and Maternal and Child Health (MCH)
II. Sanitation and water supply
III. Prevention and control of communicable and non-communicable diseases
IV. Immunization
V. Health Education
VI. Indian Public Health Standards (IPHS), at various levels of service delivery
VII. Bio-medical waste disposal
VIII. Organizational and/or institutional arrangements.

G. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, hospital management, inventory skills and counseling.

H. Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.

I. Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

J. Be competent to work in a variety of health care settings. 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.

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

Goals and Roles for the Student:

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

- Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- Leader and member of the health care team and system with capabilities to collect analyze, synthesize and communicate health data appropriately.
- Communicator with patients, families, colleagues and community.
- Lifelong student committed to continuous improvement of skills and knowledge.
- 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 as listed in clause 2, 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, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral 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 frame works.
- 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:

    I. Disease prevention,
    II. Health promotion and cure,
    III. Pain and distress alleviation, and
    IV. 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 outcomes.
- Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- 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 student 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 listed in sub-clause 2 and 3 above:

- There shall be a "Foundation Course" to orient medical students to MBBS programme, and provide them with requisite knowledge, 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 student's interest and eliminate redundancy and overlap.
- Teaching-learning methods shall be student 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 student 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.

INTEGRATION

Integration is a learning experience that allows the student to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application. It is recommended that the principles of integration be applied to such an extent that the curriculum retains the strengths of subject based education and assessment, while also providing experiences that will allow students to integrate concepts. Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). As far as possible, it is desirable that teaching/ learning occurs in each phase through study of organ systems or disease blocks in order to align the learning process. Clinical cases must be used to integrate and link learning across disciplines.

Alignment implies the teaching of subject material that occurs under a particular organ system / disease concept from the same phase in the same time frame i.e., temporally. It is recommended that alignment be the major method to be followed, allowing similar topics in different subjects to be learnt separately but during the same time frame.

Integration implies that concepts in a topic / organ system that are similar, overlapping or redundant are merged into a single teaching session in which subject based demarcations are removed. For the purpose of this document, topics from other phases that are brought into a particular phase for the purpose of reinforcement or introduction will also be considered as integrated topics. A linker is a session that allows the student to link the concepts presented in an aligned topic. In a small proportion (not to exceed 20% of the total curriculum) an attempt can be made to share topics or correlate topics by using an integration or linker session. The integration session most preferred will be a case-based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed.

Care must be taken to ensure that achievement of phase-based objectives is given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary. As much as possible, the necessary correlates from other phases must also be introduced while discussing a topic in a given subject. Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year. Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the student has internalized and integrated the concept and its application.

In summary:

Horizontal integration can be facilitated by the following methods.

- Alignment of timetables of the three first year subjects wherever possible
- Consciously connecting what is learned in one subject with the other subjects during teaching and learning activities
- Joint sessions by all the three departments which may be in the form of lectures, case-based learning or seminars.

Vertical integration can be facilitated by the following methods.

- Discussing relevant clinical case scenarios during teaching and learning sessions
- Guest lectures by clinicians or para-clinical faculty
- Hospital visits to see relevant patient presentations, radiological imaging and operative procedures.

AETCOM MODULE:

The overall goal of undergraduate medical education program as envisaged in the revised Graduate Medical Education Regulations - 2019 is 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. In order to fulfil this goal, the IMG must be able to function appropriately, ethically and effectively in her roles as clinician, leader and member of the health care team and system, communicator, lifelong student and as a professional. In order to effectively fulfil the above-mentioned roles, the IMG must obtain a set of competencies at the time of graduation. In order to ensure that training is in alignment with the goals and competencies, Medical Council of India /NMC has proposed new teaching learning approaches including a structured longitudinal programme on attitude, ethics and communication

Five AETCOM modules will be taught in Third phase-I and the following departments will be responsible for implementation and assessment of these modules.

- **MODULE 3.1 - Community Medicine**
- **MODULE 3.2 - ENT**
- **MODULE 3.3 - Community Medicine**
- **MODULE 3.4 - Ophthalmology**
- **MODULE 3.5 - Forensic Medicine**

GUIDELINES: Reflection writing to be recorded in practical record/log book in each subject

ELECTIVES:

An elective can be defined as a brief course made available to the student during her undergraduate study period, where she can choose from the available options depending upon their interest and career preferences. Introduction of electives in undergraduate medical curriculum is an important step for providing flexible choices in student's areas of interest, direct individual experience and this will help in developing self- directed learning skills. The range of electives that can be offered to the students will depend upon the local logistics and resources available for the medical institutions (within or nearby). These can be in a wide range that can include electives from educational, community and research-project related, directly or indirectly with health care, super- specialty clinical electives and specific laboratory electives.

To ensure that there is an immersive learning experience and greater attention to the learner, each preceptor identified must be tagged with only a minimum number of students. Therefore, it is important to identify a sufficient number of preceptors, laboratory positions, and existing research projects (for block 1) and specialties and community clinics, for block 2. Input from both faculty and students can be sourced to identify electives that are feasible and desired.

If required and feasible, collaboration with external resources including central and private research institutes and laboratories, hospitals and clinics can be done ensuring that the quality and principles outlined in section 1 are maintained. Student-initiated external rotations may be permitted as long as they do not violate institutional rules and conform with the broad principles outlined. Rotations outside the city will require prior permission from the Medical Council of India. Examples (neither exhaustive nor comprehensive) of block 1 and block 2 electives are provided in the table.

Block 1	Block 2
Laboratory Experience:	**Clinical Specialty Experience:**
Pathology	Emergency room
Microbiology	CICU (Dept. of Cardiology)
Biochemistry	Psychiatry
Endocrinology lab	Dermatology
Pharmaco-vigilance and clinical pharmacology	Oncology
Rural Community Health center	Endocrinology and Diabetes
Research	Nephrology
Student initiated research	Neurosurgery
Participation in faculty research	Cardiology / Cardiac Surgery
Community and epidemiologic surveys	GI surgery
Virology	Neurology
Blood Bank	Primary Health Center

The list of available learning experiences for each block and the names of preceptors for each should be available to students on the institutional notice board at least three months before the commencement of the electives. A process for submitting applications for both blocks with choices should be made available to the students. Written information on each learning experience must be available for students to examine and make an informed choice.

Method:

- Two months are allotted for elective rotations after completion of the exam at end of the third MBBS Part I examination and before commencement of third MBBS Part II.
- It is compulsory for students to do an elective. The protected time for electives should not be used to make up for missed clinical postings, shortage of attendance or any other purpose.
- The student shall rotate through two elective blocks of 04 weeks each.
- Block 1 shall be done in a pre-selected preclinical or para-clinical or other basic sciences laboratory OR under a faculty researcher in an ongoing research project. During the electives regular clinical postings shall continue.
- Block 2 shall be done in a clinical department (including specialties, super-specialties, ICUs, blood bank and casualty) from a list of electives developed and available in the institution OR as a supervised learning experience at a rural or urban community clinic.
- Institutions will determine the number and nature of electives beforehand, names of the supervisors, and the number of students in each elective based on the local logistics, available resources and faculty.
- Each institution will develop its own mechanism for allocation of electives.
- It is preferable that electives are made available to the students in the beginning of the academic year.
- The student must submit a learning logbook based on both blocks of the elective.
- 75% attendance in the electives and submission of logbook maintained during elective is mandatory for eligibility to appear in the final MBBS examination.
- Students will be assessed in between and at the end of each elective posting.
- Feedback, comments and /or grades about the student's performance by the faculty mentor can be documented with the help of a checklist where both professional and academic attributes can be included.
- The performance of the students in the electives will also contribute towards internal marks.
- Student's feedback about the elective also needs to be documented in a structured format. This will help in gathering student's perceptions about various aspects of elective posting and help in program evaluation.
- Institutions may use part of this time for strengthening basic skill certification. The list of electives offered by the institution must be displayed for students.
- Each elective should have well defined objectives, expected outcomes, expectations from the students, their assessment mechanism and faculty guide or mentors.
- A faculty mentor should guide the student, monitor their learning activities and assess the students' performance with regular feedback.
- Examples of general electives include bioinformatics, tissue engineering / processing, computer and computer applications, genetics, human nutrition, laboratory sciences, research methodology, ethics and medical education.

SECTION II

REGULATIONS GOVERNING MBBS DEGREE COURSE
[Eligibility for Admission, Duration, Attendance and Scheme of Examination]

1. **ELIGIBILITY**
   As per guidelines of Medical Council of India / NMC.

2. **DURATION OF THE COURSE:**
   The duration of the MBBS course shall be 4 ½ academic years followed by one year compulsory rotating internship. Normally the MBBS course shall commence on the 1st Oct of an academic year.

<table>
<tr><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Foundation course</td><td colspan="4">I MBBS</td></tr>
<tr><td colspan="8">I MBBS</td><td>Phase I Exam</td><td colspan="3">II MBBS</td></tr>
<tr><td colspan="8">II MBBS</td><td>Phase II Exam</td><td colspan="3">III MBBS PART 1</td></tr>
<tr><td colspan="9">III MBBS PART 1</td><td>Phase III part 1 exam</td><td colspan="2">Electives and skills</td></tr>
<tr><td colspan="12">III MBBS PART 2</td></tr>
<tr><td>Phase III part 2 exam</td><td></td><td colspan="10">Internship</td></tr>
<tr><td colspan="2">Internship</td><td colspan="10"></td></tr>
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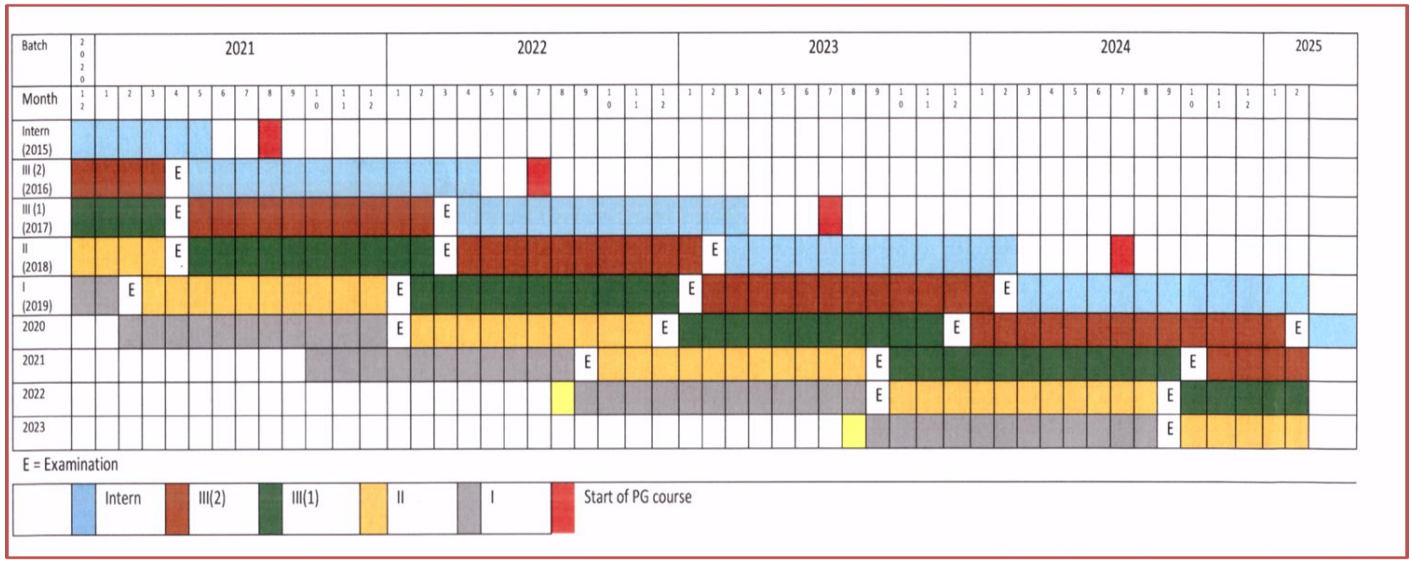
Revised Scheduling of MBBS curriculum from 2021-2024 due to COVID-19 Pandemic.



MONTH-WISE SCHEDULE FOR NEW CBME COURSE FOR MBBS BATCH 2021-22 JOINED IN FEB-MAR 2022

MBBS	1	2	3	4	5	6	7	8	9	10	11	12
2022	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	months	14TH-1	2	3	4	5	6	7	8	9	10	11
2023	12	Exam, Results	2ND PROF-1	2	3	4	5	6	7	8	9	10
2024	11	12	Exam, Results	3RD 1ST-1	2	3	4	5	6	7	8	9
2025	10-exam in 2nd half	11-Electives	12	13	14	15	16	17	18	19	20	21
2026	22	23	24	25- NEXT & Univ. final practical, Results	INTERNSHIP-1	2	3	4	5	6	7	8
2027	9	10	11	12	NEXT, counselling	counselling	PG					

ACADEMIC CALENDER FOR MBBS BATCH(2021-22) ADMITTED IN FEB-MAR 2022

Professional year	Time frame	Months available (Teaching + Exam)	Comparison with GMER 2019
1st	14th Feb '22 to 31st Jan '23, Exam - Feb.	11.5 months (incl. F.C.) Exam , Result = 1 month	14 months (incl. one month FC)
2nd	1st March,'23 to 29th Feb,'24 Exam- March, '24	12 months Exam , Result = 1 month	12 months
3rd(III-part-1)	1st April,'24 to 15th Jan,'25, Exam – till 31th Jan, '25	9.5 months Exam - 15 days (FMT, Community Med)	13 months
Electives + results	Block A–(first half) Feb, '25 Block B–(second half) Feb, '25	1 month	2 months
4th(III-part-2)	1st March,'25 to 31st March, '26	13 months NeXT (theory) – April, '26 Univ. (practical) – April, '26	13 months
Internship	1st May, '26 to 30th April '27,	12 months	12 months
NeXT & Counselling	May, June, '27	Counselling before 15th June	1 month
PG	July, '27		

DISTRIBUTION OF SUBJECTS BY PROFESSONAL PHASE

Phase and Year of MBBS Training	Subjects and new teaching elements	Duration	University examination
First professional MBBS	Foundation course (1month) Human Anatomy, Physiology& Biochemistry Introduction of Community Medicine, Humanities Early Clinical Exposure Attitude. Ethics and Communication Module (AETCOM)	1+13 months	**First professional MBBS**
Second professional MBBS	Pathology, Microbiology, Pharmacology, Forensic Medicine And Toxicology Introduction to clinical subjects including community Medicine Clinical postings AETCOM	12 months	**Second professional MBBS**
Third professional MBBS-part I	General Medicine ,General Surgery, OBG, Paediatrics, Orthopaedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory Medicine, Radiodiagnosis & Radiotherapy, Anaesthesiology Clinical Subjects /postings AETCOM	12 months	**Third professional MBBS-part I**
Electives	Electives ,skills and assessment	2 months	
Third professional MBBS-part II	General Medicine ,Paediatrics, General Surgery, Orthopaedics, Obstetrics and Gynaecology, including Family welfare and allied Specialties Clinical Postings /subjects AETCOM	13 months	**Third professional MBBS-part II**

3. ATTENDANCE:

Every candidate should have attendance not less than 75% of the total classes conducted in theory and not less than 80% of the classes conducted in practical in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examination. 75% attendance in Professional Development Programme (AETCOM Module) is required for eligibility to appear for final examination in each professional year (vide Medical Council of India/NMC Notification on Graduate Medical Education (Amendment) Regulations 2019, published in the Gazette of India Part III, Section 4, Extraordinary issued on 4th November 2019).

- In subjects that are taught in more than one phase – the student 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 e.g., General Surgery and allied branches), the candidate must have 75% attendance in each subject and 80% attendance in each clinical posting.
- Students who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination.

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

2. TEACHING HOURS:

3rd Professional Part-I teaching hours:

Subjects	Teaching Hours	Tutorials/ Seminars/ Integrated Teaching (Hours)	Self-Directed learning (Hours)	Total (hours)
General Medicine	25	35	5	65
General Surgery	25	35	5	65
Obstetrics and Gynecology	25	35	5	65
Pediatrics	20	30	5	55
Orthopedics	15	20	5	40
Forensic Medicine and Toxicology	25	45	5	75
Community Medicine	40	60	5	105
Dermatology	20	5	5	30
Psychiatry	25	10	5	40
Respiratory Medicine	10	8	5	20
Otorhinolaryngology (ENT)	25	40	5	70
Ophthalmology	30	80	10	100
Radiodiagnosis and Radiotherapy	10	8	2	20
Anesthesiology	8	10	2	20
Clinical Postings	-	-	-	756
Attitude, Ethics & Communication Module (AETCOM)		19	06	25
Total	303	401	66	1551

* The Clinical postings in the third professional part-I shall be 18 hours per week (3 hrs per day from Monday to Saturday).

Clinical Postings Hours:

3rd Professional MBBS Part-I Clinical postings:

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

*In four of the eight weeks of electives, regular clinical postings shall be accommodated.

Clinical postings may be adjusted within the time framework.

1 This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I).

2 This includes maternity training and family welfare (including Family Planning).

3This posting includes Physical Medicine and Rehabilitation.

4 This posting includes Radiotherapy, wherever available.

5. RE-ADMISSION AFTER DISCONTINUATION OF STUDY:

Every student shall attend her classes (theory, practical and clinical) on all working days unless the leave of absence is sanctioned by the principal/dean. If a student absents continuously for a period of 91 days or more, before one year after discontinuation and seeks permission to attend the course, her application shall be addressed to the dean of the college and shall be forwarded to the registrar while permitting the student to rejoin. The vice-chancellor may grant leave of absence applying such conditions as deemed necessary. Candidates who are absent for continuous period of one year or more without permission shall be deemed to have forfeited the admission and her studentship shall stand cancelled without any further notice.

6. MIGRATION / TRANSFER OF CANDIDATES:

As per MCI / NMC Guidelines

7. VACATION:

The vacation for the students shall be 30 days in each academic year which includes 15 days during summer, one week during Sankranthi and one week during Dussehra, subject to update from NMC.

SCHEME OF EXAMINATION

8. INTERNAL ASSESSMENT:

General guidelines:

- Regular periodic examinations shall be conducted throughout the course. There shall be minimum three internal assessment examinations in each Para-clinical subject and no less than two examinations in each clinical subject in a professional year.
- At end of posting, clinical assessment shall be conducted for each clinical posting, in each professional year
- The third internal examination should be conducted on the lines of the university examination.
- When subjects are taught in more than one phase, the internal assessment must be done in each phase and must contribute proportionately to final assessment. For example, General Medicine must be assessed in second Professional, third Professional Part I and third Professional Part II, independently.
- Out of three internal exams conducted, the marks secured in the Pre-final exams shall be taken into account along with the best among the other internal assessment. Average of these two marks should be calculated and submitted to the university.

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		Formative assessment	
(Part completion tests/	5	Record	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2; 75-79%-1;

Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Example for calculation of internal assessment marks:

Theory :

1st Internal (100)	2nd Internals (100)	Pre-final (100+100)
70	60	70+70
70/100 x 40 (to convert out of 40)=28/40		140/200 x 40(to convert out of 40)=28/40

Among the 1st and 2nd internal assessment marks, best of the two is taken and Pre-final marks is compulsorily taken into account.

28+28/2=28/40 (average of 1st internal assessment marks and pre-final marks)
28+8 (Part completion test + attendance) =36/50
36/ 50(72% - minimum 40% required for eligibility in theory)

Practicals: 22/ 30
Viva: 8/10
Practicals + viva: 22+8= 30/40

30+8 (logbook + Record) = 38/50 (76% - minimum 40% required for eligibility in practicals)
Theory + practical= 36+38 =74/100 (74% - minimum 50%, theory + practical, required for eligibility to appear in University exam)

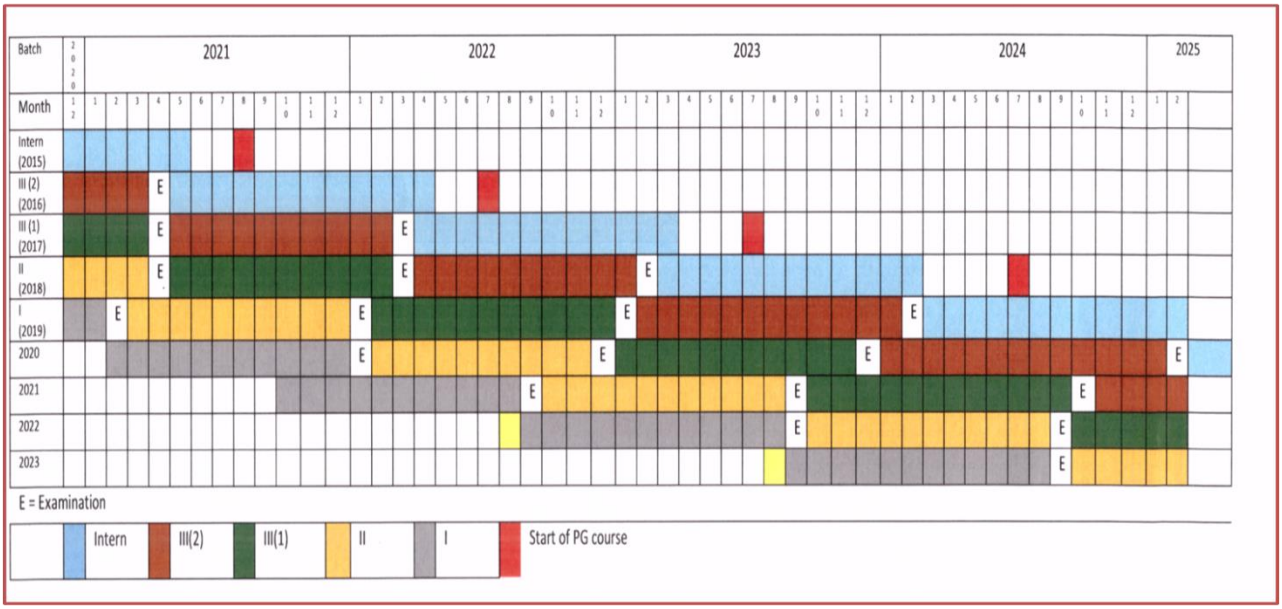
- Students must secure not less than 40 % marks in theory and practical separately and not less than 50% marks of the total marks (combined in theory and practical) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
- A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial measures by the institution. If she successfully completes the remediation measures, she is eligible to appear for University Examination. Remedial measures shall be completed before submitting the internal assessment marks online to the university.
- Internal assessment marks will reflect under separate head in the marks card of the university examination. The internal assessment marks (theory/practical) will not be added to the marks secured (theory/practical) in the university examination for consideration of pass criteria.
- The results of Internal Assessment should be displayed on the notice board within a 1-2 weeks of the test.
- Students must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

9. UNIVERSITY EXAMINATION

Examination schedule

<table>
<tr><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Foundation course</td><td colspan="4">I MBBS</td></tr>
<tr><td colspan="8">I MBBS</td><td>Phase I exam</td><td colspan="3">II MBBS</td></tr>
<tr><td colspan="8">II MBBS</td><td>Phase II exam</td><td colspan="3">III MBBS PART 1</td></tr>
<tr><td colspan="9">III MBBS PART 1</td><td>Phase III part 1 exam</td><td colspan="2">Electives and skills</td></tr>
<tr><td colspan="12">III MBBS PART 2</td></tr>
<tr><td colspan="2">Phase III part 2 exam</td><td></td><td colspan="9">Internship</td></tr>
<tr><td colspan="2">Internship</td><td colspan="10"></td></tr>
</table>

Revised Scheduling of MBBS curriculum from 2021-2024 due to COVID-19 Pandemic.



General guidelines:

- University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

- Nature of questions will include different types such as structured essays (Long Answer Questions - LAQ), Short Essays and Short Answers Questions (SAQ) and objective type questions (e.g. Multiple Choice Questions-MCQ). Marks for each part should be indicated separately. MCQs shall be accorded a weight age of not more than 20% of the total theory marks. In subjects that have two papers, the student must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass. There are no negative mark for wrong answer.

- Practical/clinical examinations will be conducted in the laboratories/ hospital wards. The objective will be to assess proficiency and skills to conduct experiments, clinical examination, interpret data and form logical conclusion, wherever applicable.

- There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.

- **A student shall not be entitled to graduate after *10 years of her joining of the first part of the MBBS course.**

- **A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial attendance at any University examination shall be counted as an availed attempt.**

- **3rd PROFESSIONAL MBBS Part-I EXAMINATION:**

  The 3rd professional MBBS Part-I Examination shall be held at the end of 3rd professional MBBS training (12 months), in the subjects of Community Medicine, ENT, Ophthalmology & Forensic Medicine.

Phase II

Table: Examination components, Subjects and Distribution of Marks

THEORY	Community Medicine	ENT	Ophthalmology	Forensic Medicine
Written Paper				
No. of Papers & Maximum Marks for each paper.	2×100=200	1x100=100	1x100=100	1x100=100
Total theory	200	100	100	100
PRACTICAL				
1. Practical exam	80	80	80	80
2. Viva-voce	20	20	20	20
Total practical	100	100	100	100

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		Formative assessment	
(Part completion tests/	5	Record	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2 83-75%-1

Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Type number of questions and distribution of marks for written paper

TYPES OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
Long essay	**2**	**15**
Short essay	**10**	**5**
MCQs	**20**	**1**

10. SUBMISSION OF LABORATORY/ CLINICAL RECORD.

At the time of Practical Examination each candidate shall submit to the Examiners her laboratory record duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

11. ELIGIBILITY TO APPEAR FOR PROFESSIONAL EXAMINATIONS.

The following criteria to be met by the students to be eligible for the university exams:

a. Shall have undergone satisfactorily the approved course of study in the subject/subjects for the prescribed duration.
b. Shall have attended not less than 75% of the total classes conducted in theory and not less than 80% of the total classes conducted in practical separately to become eligible to appear for examination in that subject/subjects.
c. Minimum of 40% marks to be obtained **separately** in theory and practical and atleast 50% marks of the total marks **combined** in theory and practical assigned for internal assessment is to be obtained in a particular subject to appear for university exam.
d. Students must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

12. Appointment of Examiners:

- Person appointed as an examiner in the particular subject must have at least five years of total teaching experience from the date of joining as assistant professor after obtaining postgraduate degree in the subject in a college affiliated to a recognized/approved/permitted medical college.
- For the Practical/ Clinical examinations, there shall be at least four examiners for 100 students, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner will act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained. Where candidates appearing are more than 100, two additional examiners (one external & one internal) for every additional 50 or part there of candidates appearing, be appointed.
- In case of non-availability of medical teachers, approved teachers without a medical degree (engaged in the teaching of MBBS students as whole-time teachers in a recognized medical college), may be appointed examiners in their concerned subjects provided they possess requisite doctorate qualifications and four years teaching experience (as assistant professors) of MBBS students. Provided further that the 50% of the examiners (Internal & External) are from the medical qualification stream.
- External examiners may not be from the same University.
- The internal examiner in a subject shall not accept external examinership for a college from which external examiner is appointed in her subject.
- A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college.
- External examiners shall rotate at an interval of 2 years.
- There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.
- All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.
- All theory paper assessment should be done as central assessment program (CAP) of concerned university.
- Internal examiners should be appointed from same institution for unitary examination in same institution.

For pooled examinations at one centre approved internal examiners from same university may be appointed.

- The grace marks up to a maximum of five marks may be awarded at the discretion of the University to a student for clearing the examination as a whole but not for clearing a subject resulting in exemption.

13. CRITERIA FOR PASS.

For declaration of pass in any subject in the University examination, a candidate shall pass both in Theory and Practical examination components separately as stipulated below:

- The Theory component consists of marks obtained in University Written papers only. For a pass in theory, a candidate must secure at least 40% marks in each of the two papers with minimum 50% of marks in aggregate (both papers together).
- For a pass in practical examination, a candidate shall secure not less than 50% marks in aggregate, i.e., marks obtained in university practical examination and viva voce added together.
- **Internal assessment marks will reflect as a separate head of passing at the university examination.**

A candidate not securing 50% marks in aggregate in Theory or Practical examination + viva in a subject shall be declared to have failed in that subject and is required to appear for both Theory and Practical again in the subsequent examination in that subject.

14. DECLARATION OF CLASS

a. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of **grand total marks (university examination)** prescribed will be declared to have passed the examination with distinction.

b. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in First Class.

c. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in Pass Class.

d. A candidate passing a university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by her in the examination.

Note: Please note fraction of marks will not be rounded off for clauses (a), (b) and (c)

15. AWARD OF DEGREE:

The university on satisfactory completion of the compulsory internship shall award the degree.

Department of
COMMUNITY MEDICINE

TABLE OF CONTENTS

GOALS AND OBJECTIVES

i) **GOAL:** The broad goal of the teaching of undergraduate students in Community Medicine is to prepare them to function as community and first level physicians in accordance with the institutional goals.

ii) **OBJECTIVES**

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

(1) Describe the health care delivery system including rehabilitation of the disabled in the country;
(2) Describe the National Health Programmes with particular emphasis on maternal and child health programmes, family welfare planning and population control.
(3) List epidemiological methods and describe their application to communicable and non-communicable diseases in the community or hospital situation.
(4) Apply biostatistical methods and techniques.

(5) Outline the demographic pattern of the country and appreciate the roles of the

individual, family, community and socio-cultural milieu in health and disease.
(6) Describe the health information systems.

(7) Enunciate the principles and components of primary health care and the national health policies to achieve the goal of 'Health for All'.
(8) Identify the environmental and occupational hazards and their control.

(9) Describe the importance of water and sanitation in human health.

(10) To understand the principles of health economics, health administration, health education in relation to community.

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

(1) Use epidemiology as a scientific tool to make rational decisions relevant to community and individual patient intervention.
(2) Collect, analyse, interpret, and present simple community and hospital-based data.
(3) Diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources and in the context of the prevailing socio-cultural beliefs.
(4). Diagnose and manage maternal and child health problems and advise a couple and the community on the family planning methods available in the context of the national priorities.
(5) Diagnose and manage common nutritional problems at the individual and community level.
(6) Plan, implement and evaluate a health education programme with the skill to use simple audio-visual aids.
(7) Interact with other members of the health care team and participate in the organisation of health care services and implementations of national health programmes.

c). INTEGRATION:

Develop capabilities of synthesis between cause of illness in the environment or community and individual health and respond with leadership qualities to institute remedial measures for this.

EXPLANATION OF TERMS USED IN THE MANUAL

1. LECTURE

Any instructional large group method including traditional lecture and interactive lecture.

2. SMALL GROUP DISCUSSION

Any instructional method involving small groups of students in an appropriate learning context.

3. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning, choosing, and implementing appropriate learning methods.

4. FIELD VISIST

Any visit to an organization of public health importance to observe its functioning. It may also include visits to community for family study / clinicosocial case discussion.

5.SKILL ASSESSMENT

A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients or **in the community/ field** as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know

SUGGESTED GUIDELINES FOR THE TEACHING AND LEARNING METHODS

LECTURE: Suggested topics for didactic and interactive lectures have been included along with specific learning objectives linked to each competency. Lectures should cover the core competencies with appropriate pictures, charts, or diagrams.

SMALL GROUP DISCUSSION: The topics for small group discussion that have been suggested, these topics included are those where more intensive and interactive learning sessions are required.

SELF DIRECTED LEARNING: Non-core competencies are suggested to be taken as topics for self-directed learning. At the end of the session, the teacher moderates the discussion and the learning is recorded in the logbook.

PRACTICAL DEMONSTRATION

Practical classes will include demonstration and discussion on topics of public health importance. All sessions will have specific learning objectives which are linked to the relevant competencies and are assessed as described in the assessment module.
All sessions will be done with the faculty as facilitator.

The students will be encouraged to observe the demonstrations and perform the requisite skills either independently or with assistance as required. Emphasis will be on acquiring relevant skills at the field level and clinically. Thus, case-based learning and discussions will be encouraged.

FIELD VISIT

Any visit to an organization of public health importance to observe its functioning. These may include visit to PHC, Anganwadi, DOTS Centre, Hospital Waste Management Facility, Water Treatment Plant, ART / ICTC Centre

It may also include visits to community for family study / clinic social case discussion.

Table: Examination components, Distribution of Marks

THEORY	COMMUNITY MEDICINE
Written Paper	

No. of Papers & Maximum Marks for each paper.	**2×100=200**
Total theory	**200**
PRACTICAL	
1. Practical exam	**80**
2. Viva-voce	**20**
Total practical	**100**

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		Formative assessment	
(Part completion tests/	5	Record	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2 83-75%-1

Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Type number of questions and distribution of marks for written paper

TYPES OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
Long essay	**2**	**15**
Short essay	**10**	**5**

MCQs	**20**	**1**

Distribution of Marks for Practical Examinations:

Practical examination will be conducted under heads of Practical examination and Viva Voce.

1.	Practical Examination (80 marks)	
	Case Presentation	25
	Exercise	30
	OSCE, OSPE, Spotters	25
2	Viva –Voce Examination	20
	TOTAL MARKS **100 MARKS**	

Community Medicine (1st year MBBS)

Topic: Concept of health and disease
Number of Competencies: 6

Number of procedures for certification:Total number of hours required: 17

Number	COMPETENCY	DOMAIN	LEVEL	CORE	Time required in hours

		K/S/A/C	K/KH/SH/P	Y/N	Theory	Practical
CM1.1	Define and describe the concept of Public Health	**K**	**KH**	**Y**	**2 hrs**	
CM 1.2	Define health; describe the concept of holistic health including concept of spiritual health and the relativeness & determinants of health	**K**	**KH**	**Y**	**3 hrs**	
CM 1.3	Describe the characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease	**K**	**KH**	**Y**	**3 hrs**	
CM 1.4	Describe and discuss the natural history of disease	**K**	**KH**	**Y**	**3 hrs**	
CM 1.5	Describe the application of interventions at various levels of prevention	**K**	**KH**	**Y**	**3 hrs**	
CM 1.8	Describe the Demographic profile of India and discuss its impact on health	**K**	**KH**	**y**	**3 hrs**	

SPECIFIC LEARNING OBJECTIVES (SLO's)			
TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, small group discussion		**Written, Viva voce**	

Topic: Relationship of social and behavioral sciences to health and disease
Number of Competencies: 2

Number of procedures for certification:Total number of hours required: 4

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 2.1	Describe the steps and perform clinico socio-cultural and demographic assessment of the individual, family and community	**S**	**SH**	**Y**	2 hrs	
CM 2.2	Describe the socio-cultural factors, family (types), its role in health and disease & demonstrate in a simulated environment the correct assessment of socio-economic status	**S**	**SH**	Y	2 hrs	

SPECIFIC LEARNING OBJECTIVES (SLO's)

TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion		Written / Viva voce	

Topic: Environmental Health Problems

Number of Competencies: 1

Number of procedures for certification:Total number of hours required: 4

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 3.1	Describe the health hazards of air, water, noise, radiation and pollution	**K**	**KH**	**Y**	**4 hours**	
SPECIFIC LEARNING OBJECTIVES (SLO's)						

TEACHING AND LEARNING		ASSESSMENT METHODS	
Teaching methods		Assessment method	
Theory	Practical	Theory	Practical
Lecture, Small Group Discussion		**Written examination, Viva voce**	

Topic: Nutrition

Number of Competencies: 2

Number of procedures for certification:Total number of hours required: 5

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 5.1	Describe the common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions	**K**	**KH**	**Y**	**3**	
CM 5.2	Describe and demonstrate the correct method of performing a nutritional assessment of individuals, families and the community by using the appropriate method	**S**	**SH**	**Y**	**2**	

SPECIFIC LEARNING OBJECTIVES (SLO's)			
TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion DOAP sessions		**Written, Viva voce**	**Skill assessment**

Topic: Health Education
Number of Competencies:2

Number of procedures for certification:Total number of hours required: 5

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 4.1	Describe various methods of health education with their advantages and limitations	**K**	**KH**	**Y**	**3**	
CM 4.2	Describe the methods of organizing health promotion and education and counselling activities at individual family and community settings	**K**	**KH**	**Y**	**2**	

SPECIFIC LEARNING OBJECTIVES (SLO's)

TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small Group Discussion		**Written, Viva voce**	

Topic: Hospital Waste Management
Number of Competencies: 3

Number of procedures for certification:Total number of hours required: 5

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 14.1	Define and classify hospital waste	**K**	**KH**	**Y**	**2**	
CM 14.2	Describe various methods of treatment of hospital waste	**K**	**KH**	**Y**	**2**	
		K	**KH**	**Y**		
CM 14.3	Describe laws related to hospital waste management				**1**	

SPECIFIC LEARNING OBJECTIVES (SLO's)			
TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion, visit to hospital		**Written, Viva voce**	

Topic: Health care of the Community
Number of Competencies: 4

Number of procedures for certification:

Total number of hours required: 12

Number	COMPETENCY	DOMAIN K/S/A/C	LEVEL K/KH/SH/P	CORE Y/N	Time required in hours	
					Theory	Practical
CM 17.1	Define and describe the concept of health care to community	**K**	**KH** **KH**	**Y**	**3**	
CM 17.2	Describe community diagnosis	**K**	**KH**	**Y**	**3**	
CM 17.4	Describe National policies related to health and health planning and millennium development goals	**K**	**KH**	**Y**	**3**	
CM 17.5	Describe Health Care Delivery in India	**K**		**Y**	**3**	

SPECIFIC LEARNING OBJECTIVES (SLO's)			
TEACHING AND LEARNING		**ASSESSMENT METHODS**	
Teaching methods		**Assessment method**	
Theory	**Practical**	**Theory**	**Practical**
Lecture, Small group discussion		**Written and viva voce**	

***** One internal assessment in 1st year MBBS, in formative assessment pattern, as per MCI guidelines.

Community Medicine (2nd year MBBS)

Topic: Epidemiology
Number of Competencies: 9
Number of procedures for certification:
Total number of hours required: 19

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
CM7.1	**Define Epidemiology and describe and enumerate the principles, concepts and uses**							
CM7.1.1	At the end of this session, students must be able to define Epidemiology and describe and the principles of Epidemiology	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.1.2	At the end of this session, students must be able to discuss Epidemiological approach	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.1.3	At the end of this session, students must be able to enlist and discuss uses of Epidemiology	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.2	**Enumerate, describe and discuss the modes of transmission and measures for prevention and control of communicable and non communicable diseases**							
CM7.2.1	At the end of this session, students must be able to enumerate, describe and discuss the modes of transmission of a disease	K	KH	Y	2	Small group discussion, Lecture	Small group	General Medicine

CM7.3	**Enumerate, describe and discuss the sources of epidemiological data**							
CM7.3.1	At the end of this session, students must be able to enumerate, describe and discuss the sources of epidemiological data	K	SH	Y	2	Small group discussion, Lecture	discussion, Lecture	
CM7.4	**Define, calculate and interpret morbidity and mortality indicators based on given set of data**							
CM7.4.1	At the end of this session, students must be able to enlist and define different mortality and morbidity indicators.	S	SH	Y	2	Small group, DOAP sessions	Small group, DOAP sessions	
CM7.4.2	At the end of this session, students must be able to calculate and interpret different mortality indicators based on given set of data	S	SH	Y	2	Small group, DOAP sessions	Small group, DOAP sessions	
CM7.5	**Enumerate, define, describe and discuss epidemiological study designs**							
CM7.5.1	At the end of this session, students must be able to classify various epidemiological study designs	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.5.2	At the end of this session, students must be able to describe Descriptive Epidemiology with suitable examples?	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.5.3	At the end of this session, students must be able to discuss the steps involved in conducting case control study and what are the advantages	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	

	and disadvantages of a case control study.							
CM7.5.4	At the end of this session, students must be able to discuss the steps involved in conducting Cohort study and what are the advantages and disadvantages of a Cohort study.	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.5.5	At the end of this session, students must be able to discuss the steps involved in conducting Randomized control trail and discuss non randomized trail	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.6	**Enumerate and evaluate the need of screening tests**							
CM7.6.1	At the end of this session, students must be able to enlist different types of screening and discuss the uses of screening tests	S	SH	Y	2	Small group discussion, DOAP sessions	Small group, DOAP	S
CM7.6.2	At the end of this session, students must be able to discuss the validity and reliability of a screening test.	S	SH	Y	2	Small group discussion, DOAP sessions	Small group, DOAP	S
CM7.7	**Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures**							
CM7.7.1	At the end of this session, students must be able to describe and demonstrate the steps in the Investigation of an	S	SH	Y	2	Small group discussion, DOAP sessions	sessions	Microbiology

	epidemic of communicable disease							
CM7.7.2	At the end of this session, students must be able to describe the principles of control measures	S	SH	Y	2	Small group discussion, DOAP sessions	sessions	Microbiology
CM7.8	**Describe the principles of association, causation and biases in epidemiological studies**							
CM7.8.1	At the end of this session, students must be able to describe the principles of association in epidemiological studies and discuss different criteria used to asses causation of a disease	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.8.2	At the end of this session, students must be able to define the term bias and discuss different types of bias with suitable examples.	K	KH	Y	2	Small group discussion, Lecture	Small group discussion, Lecture	
CM7.9	**Describe and demonstrate the application of computers in epidemiology**							
CM7.9.1	At the end of this session, students must be able to enlist different statistical software and demonstrate their use in analysis of data	S	KH	Y	2	Small group discussion, DOAP sessions	Small group, DOAP sessions	

Topic: Occupational health
Number of Competencies: 5
Number of procedures for certification:
Total number of hours required: 5

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
CM11.1	**Enumerate and describe the presenting features of patients with occupational illness including agriculture**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.1.1	At the end of the session, phase 2 students must be able to enumerate the various occupational illnesses.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.1.2	At the end of the session, phase 2 students must be able to describe the presenting clinical features of the patients.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.1.3	At the end of the session, phase 2 students must be able to explain the treatment modality of mentioned occupational illnesses.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.2	**Describe the role, benefits and functioning of the employees state insurance scheme**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.2.1	At the end of this session, the phase II students must be able to tell about the role of employee's state insurance scheme correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	

CM11.2.2	At the end of this session, the phase II students must be able to describe the benefits of employee's state insurance scheme correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.2.3	At the end of this session, the phase II students must be able to discuss the functioning of employee's state insurance scheme correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3	**Enumerate and describe specific occupational health hazards, their risk factors and preventive measures**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.1	At the end of this session the phase II students must be able to enumerate are the occupational hazards specifically.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.2	At the end of this session, the phase II students must be able to describe the occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.3	At the end of this session, the phase II students must be able to enumerate the risk factors of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.4	At the end of this session, the phase II students must be able to describe the risk factors of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM 11.3.4	At the end of this session, the phase II students must be able to enumerate the preventive measures of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	

CM11.3.5	At the end of this session, the phase II students must be able to describe the preventive measures of occupational hazards correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.4	**Describe the principles of ergonomics in health preservation**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.4.1	At the end of this session, the phase II students must be able to describe the principles of ergonomics used for health preservation correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.5	**Describe occupational disorders of health professionals and their prevention & management**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.5.1	At the end of this session, the phase II students must be able to describe the occupational disorders of health professionals correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	
CM11.5.2	At the end of this session, the phase II students must be able to discuss the prevention and management of occupational disorders of health professionals correctly.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	

Topic: Nutrition
Number of Competencies: 6
Number of procedures for certification:
Total number of hours required: 7

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
CM 5.3	**Define and describe common nutrition related health disorders (including macro-PEM, Micro-iron, Zn, iodine, Vit. A), their control and management**							
CM 5.3.1	At the end of this session, students must be able to list the common nutrition related health disorders	K	K	Y	2	Interactive lecture	Written exam/Viva	General Medicine /Paediatrics
CM 5.3.2	At the end of this session, students must be able to enumerate the different indicators used to classify PEM	K	KH	Y	2	Interactive lecture	Written exam/Viva	General Medicine /Paediatrics
CM 5.3.3	At the end of this session, students must be able to discuss the clinical features of PEM	K	KH	Y	2	Interactive lecture	Written exam/Viva	General Medicine /Paediatrics
CM 5.3.4	At the end of this session, students must be able to discuss the preventive measures and management of PEM	K	KH	Y	2	Interactive lecture	Written exam/Viva	
CM 5.3.5	At the end of this session, students must be able to discuss the signs and symptoms of anemia	K	KH	Y	2	Practical demo	Written exam/Viva	Paediatrics

CM 5.3.6	At the end of this session, students must be able to discuss the preventive measures of iron deficiency anaemia.	K	KH	Y	2	Interactive Lecture	Written exam/Viva	General Medicine
CM 5.3.7	At the end of this session, students must be able to describe the spectrum of iodine deficiency disorder	K	KH	Y	2	Interactive Lecture	Written exam/Viva	General Medicine
CM 5.3.7	At the end of this session, students must be able to describe the control measures for IDD in reference to NIDDCP	K	KH	Y	2	Interactive Lecture	Written exam/Viva	General Medicine
CM 5.3.8	At the end of this session, students must be able to describe clinical manifestations of Vitamin A deficiency	K	KH	Y	2	Interactive Lecture with video	Written exam/Viva	Paediatrics
CM 5.3.9	At the end of this session, students must be able to discuss the prevention of Vitamin A deficiency with reference to Vit A prophylaxisprogram	K	KH	Y	2	Interactive Lecture	Written exam/Viva	
CM 5.3.10	At the end of this session, students must be able to discuss briefly the prevention of Zinc deficiency	K	KH	Y	2	Interactive Lecture	Written exam/Viva	
CM 5.4	**Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment**							
CM 5.4.1	At the end of this session, students must be able to plan a balanced diet chart for a pregnant female belonging to low socio economic status with locally available foods.	S	SH	Y	2	SGD	OSCE	General Medicine /Paediatrics

CM 5.4.2	At the end of this session, students must be able to prepare a diet chart for a 4year old male child with PEM belonging to low socio economic status with locally available foods.	S	SH	Y	2	SGD	OSCE	
CM 5.4.3	At the end of this session, students must be able to prepare a diet chart for a lactating female of 30 years with locally available foods with locally available foods	S	SH	Y	2	SGD	OSCE	
CM 5.4.4	At the end of this session, students must be able to prepare a diet chart for an adolescent female who is anaemic with locally available foods.	S	SH	Y	2	SGD	OSCE	
CM 5.4.5	At the end of this session, students must be able to prepare a diet chart to an obese man belonging to higher socio economic status and with family history of hypertension	S	SH	Y	2	SGD	OSCE	
CM 5.4.6	At the end of this session, students must be able to prepare a diet chart for a family of 5 from lower socioeconomic status using the consumption units	S	SH	Y	2	SGD	OSCE	
CM 5.5	**Describe the methods of nutritional surveillance, principles of nutritional education and rehabilitation in the context of sociocultural factors**							
CM 5.5.1	At the end of this session, students must be able to describe briefly the important components of Nutritional Surveillance	K	KH	Y	2	Interactive lecture	Written exam/Viva	Paediatrics

CM 5.5.2	At the end of this session, students must be able to differentiate between nutritional monitoring and nutritional surveillance	K	KH	Y	2	Interactive lecture	Written exam/Viva	
CM 5.5.3	At the end of this session, students must be able to describe briefly the principles of Nutritional Education with special emphasis on locally available foods	K	KH	Y	2	Interactive lecture	Written exam/Viva	General Medicine
CM 5.5.4	At the end of this session, students must be able to describe briefly the principles of Nutritional Rehabilitation Keeping in mind the prevalent local socio cultural factors and according to the national program.	K	KH	Y	2	Interactive lecture	Written exam/Viva	
CM 5.6	**Enumerate and discuss the National Nutrition Policy, important national nutritional Programs including the Integrated Child Development Services Scheme (ICDS) etc**							
Cm 5.6.1	At the end of this session, students must be able to discuss briefly the objectives and intervention strategies of the National nutrition Policy, 1993.	K	KH	Y	2	Interactive Lecture	Written exam/Viva	
CM 5.6.2	At the end of this session, students must be able to discuss briefly the objectives and services provided by Integrated Child Development Services Scheme (ICDS) in the community.	K	KH	Y	2	SGT, Field visit	Written exam/Viva	Paediatrics
CM 5.6.3	At the end of this session, students must be able to discuss briefly the objectives and services provided under The National Nutrition Mission 2017	K	KH	Y	2	SGT, Seminar	Written exam/Viva	

CM 5.6.4	At the end of this session, students must be able to discuss briefly the objectives and services provided under Balawadi Nutritional program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.5	At the end of this session, students must be able to discuss briefly the Vit A Prophylaxis Program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.6	At the end of this session, students must be able to discuss briefly the National nutritional Anemia prophylaxis program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.7	At the end of this session, students must be able to discuss briefly the IDD control program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM 5.6.8	At the end of this session, students must be able to discuss briefly the Mid-day meal scheme and mid day meal program	K	KH	Y	2	SGT, Seminar	Written exam/Viva	Paediatrics
CM5.7	**Describe food hygiene**							
CM5.7.1	At the end of this session, students must be able to what is food hygiene and describe different components of food hygiene.	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	Microbiology
CM5.8	**Describe and discuss the importance and methods of food fortification and effects of additives and adulteration**							
CM5.8.1	At the end of this session, students must be able to define and enlist the methods of food fortification	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	

CM5.8.1.2	At the end of this session, students must be able to describe and discuss the importance of food fortification	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	
CM5.8.1.3	At the end of this session, students must be able to what are food additives and what are their effects on health.	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	
CM5.8.1.4	At the end of this session, students must be able to what are the effects of food adulteration?	K	KH	Y	2	Lecture, Small group discussion	Written / Viva voce	

Topic: Disaster management
Number of Competencies: 4
Number of procedures for certification:
Total number of hours required: 4

	Competency	**Domain K/S/ A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Phase 1/2/3**	**Teaching -Learning Method**	**Assessment Method**	**Integration**
C.M 13.1	**Define and Describe the concept of Disaster Management**							-
C.M 13.1.1	At the end of this session, students must be able to list the types of disaster	K	KH	Y	3	Lecture	Written / Viva Voice	-
C.M 13.1.2	At the end of this session, students must be able to describe the occurrence global and in India	K	KH	Y	3	Lecture	Written / Viva Voice	-

C.M 13.2	**Discuss the Disaster management with disaster cycle**							**-**
C.M 13.2.1	At the end of this session, students must be able to discuss how disaster is managed with the help of Disaster cycle	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	
C.M 13.3	At the end of this session, students must be able to describe manmade disaster in the world and in india							
C.M 13.3.1	At the end of this session, students must be able to explain manmade disaster	K	KH	Y	3	Lecture	Written / Viva Voice	**-**
CM 13.4	**Describe the details of the National Disaster Management Authority**							
C.M 13.4.1	At the end of this session, students must be able to describe the Natural disaster	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	**-**
C.M 13.4.2	At the end of this session, students must be able to list the objectives and strategies under National disaster management per.2016	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	**-**
C.M 13.4.3	At the end of this session, students must be able to describe the role of NDMA in disaster management.	K	KH	Y	3	Lecture	Written / Viva Voice	**-**

Topic: International Health
Number of Competencies: 2
Number of procedures for certification:
Total number of hours required: 2

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
18.1	**Define and describe the concept of International Health.**							
18.1.1	At the end of this session, students must be able to define the concept of International Health.	K	K	Y	3	Lecture	Theory & Viva voce	
18.1.2	At the end of this session, students must be able to describe history and concept of International Health.	K	K	Y	3	Lecture	Theory & Viva voce	
18.2	**Describe roles of various international health agencies.**							
18.2.1	At the end of this session, students must be able to describe the structure and work of World Health Organization.	K	K	Y	3	Lecture	Theory & Viva voce	
18.2.2	At the end of this session, students must be able to describe content of services given by UNICEF.	K	K	Y	3	Lecture	Theory & Viva voce	
18.2.3	At the end of this session, students must be able to describe work of other United Nations agencies such as UNDP, UN Fund for Population Activities, FAO, ILO and World Bank.	K	K	Y	3	Lecture	Theory & Viva voce	

18.2.4	At the end of this session, students must be able to describe work of Bilateral agencies and Non-governmental agencies.	K	K	Y	3	Lecture	Theory & Viva voce	

Topic: Environmental health problems
Number of Competencies: 8
Number of procedures for certification:
Total number of hours required: 18

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
CM3.1	**Describe the health hazards of air, water, noise, radiation and pollution**							
CM3.1.1	At the end of this session, the phase I students must be able to discuss the health hazards of air pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT
CM3.1.2	At the end of this session, the phase I students must be able to discuss the health hazards of water pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT
CM3.1.3	At the end of this session, the phase I students must be able to discuss the health hazards of noise pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT

CM3.1.4	At the end of this session, the phase I students must be able to discuss the health hazards of radiation pollution	K	K	Y	1	Lecture/small group discussion	Written/viva-voce	General Medicine, ENT
CM3.2	**Describe concept of safe & wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting**							
CM3.2.1	At the end of this session, students must be able to define safe & wholesome water	K	K	Y	1	LGD	Written exam/Viva	
CM3.2.2	At the end of this session, students must be able to Enumerate the various sources of water supply	K	K	Y	1	LGD	Written exam/Viva	
CM3.2.3	At the end of this session, students must be able to describe large scale water purification processes	K	KH	Y	1	SG Field visit	Written exam/Viva	
CM3.2.4	At the end of this session, students must be able to describe small scale water purification processes	K	KH	Y	1	LGD	Written exam/Viva	
CM3.2.5	At the end of this session, students must be able to Enumerate the criteria and standards for drinking water quality	K	K	Y	1	SGD, Seminar	Written exam/Viva	
CM3.2.6	At the end of this session, students must be able to describe the concept of water conservation and methods	K	KH	Y	1	SGD, Seminar	Written exam/Viva	

CM3.2.7	At the end of this session, students must be able to explain rain water harvesting	K	K	Y	1	SGD, Field visit	Written exam/Viva	
CM 3.3	**Describe the aetiology and basis of water borne diseases/jaundice, hepatitis/diarrheal diseases**							
CM 3.3.1	At the end of this session, students must be able to describe etiology of water borne diseases due to biological and chemical agents	K	KH	Y	1	Lecture	Written exam/Viva	Microbiology
CM 3.3.2	At the end of this session, students must be able to describe importance of “faeco-oral route “ of transmission.	K	KH	Y	1	Lecture	Written exam/Viva	Microbiology
CM 3.3.3	At the end of this session, students must be able to describe transmission of diseases such as jaundice/viral hepatitis/rota virus diarrhea and polio	K	KH	Y	1	Lecture	Written exam/Viva	Microbiology
CM 3.4	**Describe the concept of solid waste, human excreta and sewage disposal**							
CM 3.4.1	At the end of this session, students must be able to define solid wastes	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.2	At the end of this session, students must be able to enumerate sources of solid waste	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.3	At the end of this session, students must be able to differentiate between degradable and non-degradable and recyclable solid	K	KH	Y	1	Lecture	Written exam/Viva	

	waste							
CM 3.4.4	At the end of this session, students must be able to enumerate methods of storage/ collection/ transportation and final disposal of solid wastes	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.5	At the end of this session, students must be able to describe features of “sanitary latrine”, “septic tank” and “soakage pit”	K	KH	Y	1	SGD, Field visit	Written exam/Viva	
CM 3.4.6	At the end of this session, students must be able to enumerate type of latrines suitable for sewered and non-seweredareas.	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.7	At the end of this session, students must be able to enumerate “composting methods” & differentiate between Aerobic & non Aerobic	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.4.8	At the end of this session, students must be able to describe a “water carriage system”/ “sewerage system”	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.5	**Describe the standards of housing and the effect of housing on health**							
CM 3.5.1	At the end of this session, students must be able to describe standards of an “Ideal Housing”	K	KH	Y	1	Lecture	Written exam/Viva	

CM 3.5.2	At the end of this session, students must be able to enumerate diseases due to over-crowding & Indoor pollution	K	K	Y	1	Lecture	Written exam/Viva	
CM 3.5.3	At the end of this session, students must be able to describe hazards of poor housing	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.5.4	At the end of this session, students must be able to describe diseases associated with high rise buildings	K	KH	Y	1	Lecture	Written exam/Viva	
CM 3.6	**Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program**							
CM 3.6.1	At the end of this session, students must be able to enumerate "Vector borne diseases	K	K	Y	2	Lecture	Written exam/Viva	Microbiology
CM 3.6.2	At the end of this session, students must be able to describe different components vector borne disease control Programs	K	KH	Y	2	Lecture	Written exam/Viva	Microbiology
CM 3.7	**Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures**							
CM 3.7.1	At the end of this session, students must be able to identify common vectors of public health importance	K	K	Y	2	SGD	OSPE	

CM 3.7.2	At the end of this session, students must be able to describe the different stages of “Life Cycle” of common vector	K	KH	Y	2	SGD	Written exam/Viva	
CM 3.7.3	At the end of this session, students must be able to describe methods of control of vectors of public health importance	K	KH	Y	2	SGD, Seminar	Written exam/Viva	
CM 3.8	**Describe the mode of action, application cycle of commonly used insecticides and rodenticides.**							
CM 3.8.1	At the end of this session, students must be able to classify insecticides	K	K	Y	2	SGD	Written exam/Viva	Pathology
CM 3.8.2	At the end of this session, students must be able to enumerate the properties of an ideal insecticide	K	K	Y	2	SGD	Written exam/Viva	Pathology
CM 3.8.3	At the end of this session, students must be able to describe the mode of action and application of common insecticides.	K	KH	Y	2	SGD	Written exam/Viva	Pathology
CM 3.8.5	At the end of this session, students must be able to classify rodenticides	K	K	Y	2	SGD	Written exam/Viva	Pathology
CM 3.8.6	At the end of this session, students must be able to describe mode of action and application of common rodenticides	K	KH	Y	2	SGD	Written exam/Viva	Pathology

Topic: Mental health
Number of Competencies: 3
Number of procedures for certification:
Total number of hours required: 3

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
C.M 15.1	**Define and describe the concept of mental health**							
C.M 15.1.1	At the end of this session, students must be able to define mental health.	K	KH	Y	3	Lecture	Written / Viva Voice	Horizontal/ Vertical Psychiatry
C.M 15.1.2	At the end of this session, students must be able to enumerate and describe causes of mental health disorders.	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry
C.M 15.1.3	At the end of this session, students must be able to describe the types of mental illness/disorders	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry
C.M 15.2	**Describe warning signals of mental health disorder**							
C.M 15.2.1	At the end of this session, students must be able to enlist and describe warning signals of mental health disorders	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry

C.M 15.3	**Describe National Mental Health Program**							
C.M 15.3.1	At the end of this session, students must be able to describe objectives and strategies of National mental health programme.	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal/ Vertical Psychiatry

Topic: Essential medicines
Number of Competencies: 3
Number of procedures for certification:
Total number of hours required: 2

	Competency	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration
19.1	**Define and describe the concept of Essential Medicine List (EML).**							
19.1.1	At the end of this session, students must be able to define the concept of Essential medicines.	K	K	Y	3	Lecture	Theory & Viva voce	
19.1.2	At the end of this session, students must be able to describe the concept of essential medicines.	K	K	Y	3	Lecture	Theory & Viva voce	
19.2	**Describe roles of essential medicine in primary health care.**							
19.2.1	At the end of this session, students must be able to describe the role	K	K	Y	3	Lecture	Theory & Viva voce	

	of essential medicine in primary health care.							
19.3	**Describe counterfeit medicine and its prevention.**							
19.3.1	At the end of this session, students must be able to what is counterfeit medicine?	K	K	Y	3	Lecture	Theory & Viva voce	
19.3.2	At the end of this session, students must be able to describe prevention of counterfeit medication.	K	K	Y	3	Lecture	Theory & Viva voce	

S.No	Competency followed by SLO	Domain K/S/ A/C	Level K/KH/ SH/P	Core Y/N	Phase 1/2/3	Teaching -Learning Method	Assessment Method	Integration	Duration
CM6.1	**Formulate a research question for a study**								
CM6.1.1	At the end of this session, students must be able to what is research question and how do you approach to formulate a research question?	K	KH	Y	2	Small group discussion, Lecture, DOAP sessions	Written / Viva voce/ Skill assessment		
CM6.2	**Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data**								
CM6.2.1	At the end of this session, students must be able to what are the principles of statistical data	S	SH	Y	2	Small group, Lecture, DOAP sessions	Written / Viva voce/		
CM6.2.2	At the end of this session, students must be able to demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data	S	SH	Y	2	Small group, Lecture, DOAP sessions	Written / Viva voce/		

CM6.3	**Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs**								
CM6.3.1	At the end of this session, students must be able to describe, discuss and demonstrate the application of elementary statistical methods	S	SH	Y	2	Small group discussion, Lecture, DOAP sessions	Skill assessment		
CM6.3.2	At the end of this session, students must be able to enlist tests of significance and discuss how they are used in various study designs	S	SH	Y	2	Small group discussion, Lecture, DOAP sessions	Skill assessment		
CM6.4	**Enumerate, discuss and demonstrate Common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion**								
CM6.4.1	At the end of this session, students must be able to what is sampling and discuss different types of sampling technique?	S	SH	Y	2	Small group discussion, Lecture, DOAP sessions	Written / Viva voce/		
CM6.4.2	At the end of this session, students must be able to what is frequency distribution and discuss about it with the help of histogram?	S	SH	Y	2	Small group discussion, Lecture, DOAP sessions	Written / Viva voce/		

CM6.4.3	At the end of this session, students must be able to describe measures of central tendency and measures of dispersion?	S	SH	Y	2	Small group discussion, Lecture, DOAP sessions	Written / Viva voce/		
CM8.1	**Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases**								
CM8.1.1	At the end of this session, students must be able to describe the epidemiological and control measures at the primary care level for communicable diseases	K	KH	Y	3	Small group discussion, Lecture	Small group discussion, Lecture	Microbiology, Pathology, General Medicine	
CM8.1.2	At the end of this session, students must be able to discuss the epidemiological and control measures including the at the primary care level for communicable diseases with a suitable example.	K	KH	Y	3	Small group discussion, Lecture	Small group discussion, Lecture	Microbiology, Pathology General Medicine	
CM8.2	**Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for Non Communicable diseases (DM, HTN, Stroke, Obesity and Cancer etc.)**								

CM8.2.1	At the end of this session, students must be able to discuss the Risk factors and control measures of NCDs	K	KH	Y	1	Lecture	Written / Viva voce	General Medicine	
CM8.2.2	At the end of this session, students must be able to discuss the risk factors and prevention and control measures for Coronary Heart Disease	K	KH	Y	2	Lecture	Written / Viva voce	General Medicine / Cardiology	
CM8.2.3	At the end of this session, students must be able to epidemiology, Diagnosis preventive measures of Diabetes Mellitus	K	KH	Y	2	Lecture	Written / Viva voce	General Medicine /Endocrinology	
CM8.2.4	At the end of this session, students must be able to discuss the epidemiology, Clinical features, Diagnosis, prevention and control measures of Stroke	K	KH	Y	2	Lecture	Written / Viva voce	General Medicine /Neurology	
CM8.2.5	At the end of this session, students must be able to discuss the epidemiology, Clinical features, Diagnosis, prevention and control measures of Rheumatic Heart Disease	K	KH	Y	2	Lecture	Written / Viva voce	General Medicine / Rheumatology	
CM8.2.6	At the end of this session, students must be able to discuss the epidemiology, Clinical features, Diagnosis, prevention and control measures of Cancer (Oral/Cervix /Breast/Lung/Stomach)	K	KH	Y	3	Lecture	Written / Viva voce	General Medicine /Med Oncology	

CM8.2.7	At the end of this session, students must be able to describe the Screening methods for common Cancers.	K	KH	Y	2	Lecture	Short notes		
CM8.2.8	At the end of this session, students must be able to discuss the epidemiology, Assessment, hazards, Prevention and control measures of Obesity.	K	KH	Y	3	Lecture	Written / Viva voce	General Medicine /Endocrinology	
CM8.2.9	At the end of this session, students must be able to discuss the epidemiology, Prevention and control measures of Visual impairment &Blindness.	K	KH	Y	3	Lecture	Written / Viva voce	Ophthalmology	
CM8.2.10	At the end of this session, students must be able to discuss the oral diseases and their Prevention and control measures.	K	KH	Y	3	Lecture	Written / Viva voce	Dental Sciences	
CM8.2.11	At the end of this session, students must be able to discuss the epidemiology, Prevention and control measures of Road Traffic Accidents.	K	KH	Y	3	Lecture	Written / Viva voce		
CM8.2.12	At the end of this session, students must be able to discuss the epidemiology, Prevention and control measures of Domestic Accidents.	K	KH	Y	3	Lecture	Written / Viva voce		

CM8.3	**Enumerate and describe disease specific National Health Programs including their prevention and treatment of a case**								
CM8.3.1	At the end of this session, students must be able to describe in detail about salient features of National Vector borne disease control programme. Add a note on Integrated vector control measures.	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.2	At the end of this session, students must be able to describe in detail about salient features of National Leprosy Eradication Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.3	At the end of this session, students must be able to describe in detail about salient features of Revised National Tuberculosis Control Programme	K	KH	Y	2	Lecture/ Field Visit	Written / Viva voce		
CM8.3.4	At the end of this session, students must be able to describe in detail about salient features National Aids Control Programme	K	KH	Y	2	Lecture/ Field Visit	Written / Viva voce		

CM8.3.5	At the end of this session, students must be able to describe in detail about salient features National Programme For Control Of Blindness	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.6	At the end of this session, students must be able to describe in detail about salient features Universal Immunization Programme. Add a note on current COVID-19 Vaccination Schedule	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.7	At the end of this session, students must be able to describe in detail about salient features of National Urban Health Mission	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.8	At the end of this session, students must be able to describe in detail about salient features of Reproductive And Child Health Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.9	At the end of this session, students must be able to describe in detail about salient features of Integrated Management Of Neonatal And Childhood Illness (IMNCI) Programme.	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		

CM8.3.10	At the end of this session, students must be able to describe in detail about salient features of Reproductive, Maternal, Newborn, Child And Adolescent Health (RMNCH+A) Strategy.	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.11	At the end of this session, students must be able to describe in detail about salient features of National Programme For Healthcare Of The Elderly (NPHCE)	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.12	At the end of this session, students must be able to describe in detail about salient features of National Programme For Prevention And Control Of Cancer, Diabetes, Cardiovascular Diseases And Stroke (NPCDCS)	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.13	At the end of this session, students must be able to describe in detail about salient features of National Mental Health Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce	Psychiatry	
CM8.3.14	At the end of this session, students must be able to describe in detail about salient features of Integrated Disease Surveillance Project (IDSP)	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		

CM8.3.15	At the end of this session, students must be able to describe in detail about salient features of Ayushman Bharat Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.16	At the end of this session, students must be able to describe in detail about Community Nutrition Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.3.17	At the end of this session, students must be able to describe in detail about salient features of National Family Welfare Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM 8.3.18	At the end of this session, students must be able to describe in detail about National Water Supply And sanitation Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM 8.3.19	At the end of this session, students must be able to describe in detail about Minimum Needs Programme	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.4	**Describe the principles and enumerate the measures to control a disease epidemic**								
CM8.4.1	At the end of this session, students must be able to definition, Aims of epidemiology, basic	K	KH	Y	3	Lecture/SGD	Written / Viva voce		

	measurement tools in epidemiology								
CM8.4.2	At the end of this session, students must be able to measurement of mortality	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.3	At the end of this session, students must be able to measurement of morbidity- Incidence, Prevalence	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.4	At the end of this session, students must be able to Epidemiologic Methods-Classification, Descriptive studies	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.5	At the end of this session, students must be able to Analytical studies- Cross-sectional studies	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.6	At the end of this session, students must be able to Analytical studies- Case-control studies	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.7	At the end of this session, students must be able to Analytical studies- Cohort studies	K	KH	Y	3	Lecture/SGD	Written / Viva voce		

CM8.4.8	At the end of this session, students must be able to *Experimental studies* - Randomized Controlled Study or Clinical trials	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.9	At the end of this session, students must be able to *Experimental studies - Non* Randomized Controlled trials	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.10	At the end of this session, students must be able to Association And Causation	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.11	At the end of this session, students must be able to uses of Epidemiology	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.12	At the end of this session, students must be able to infectious disease Epidemiology-Definitions	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.13	At the end of this session, students must be able to dynamics of disease transmission	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.14	At the end of this session, students must be able to modes of transmission	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.15	At the end of this	K	KH	Y	3	Lecture/SGD	Written / Viva		

	session, students must be able to Susceptible Host-Host Defences- Active & Passive Immunity, herd immunity, Immunizing Agents- vaccines, immunoglobulins & Antisera or antitoxins						voce		
CM8.4.16	At the end of this session, students must be able to Cold chain system, open vial policy, VVM	K/Skill	KH/SH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.17	At the end of this session, students must be able to AEFI	K	KH	Y	3	Lecture	Written / Viva voce		
CM8.4.18	At the end of this session, students must be able to Disease Prevention And Control	K	KH	Y	3	Lecture	Written / Viva voce		
CM8.4.19	At the end of this session, students must be able to health advice to travellers	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM8.4.20	At the end of this session, students must be able to disinfection	K	KH	Y	1	SGD/Practicals	Written / Viva voce		
CM8.4.21	At the end of this session, students must be able to investigation of an epidemic	K	KH	Y	3	Lecture/SGD	Written / Viva voce		

CM8.5	**Describe and discuss the principles of planning, implementing and evaluating control measures for disease at community level bearing in mind the public health importance of the disease**								
CM8.5.1	At the end of this session, students must be able to Health Planning - Planning Cycle	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		
CM8.5.2	At the end of this session, students must be able to management methods and techniques- Methods based on behavioural sciences - Quantitative methods	K	KH	Y	3	Lecture/ SGD	Written / Viva voce		
CM8.5.3	At the end of this session, students must be able to National Health Policy-2017	K	KH	Y	3	Lecture	Written / Viva voce		
CM8.5.4	At the end of this session, students must be able to Health Planning in India- Various Committees	K	KH	Y	3	Lecture	Written / Viva voce		
CM8.5.5	At the end of this session, students must be able to Health System In India- Centre, State &	K	KH	Y	3	Lecture/ Field Visit	Written / Viva voce		

	District levels								
CM8.6	**Educate and train health workers in disease surveillance, control & treatment and health education**								
CM8.6.1	At the end of this session, students must be able to Health Communication- Process, Types, Barriers & Functions	S/C	S/SH	Y	3	DOAP /SGD/ Field Visit	Written / Viva voce / Practicals/ OSPE		
CM8.6.2	At the end of this session, students must be able to Health Education - Approaches, Models & Contents	K	KH	Y	3	Lecture	Written / Viva voce		
CM8.6.3	At the end of this session, students must be able to principles & Practices of Health Education	K	KH	Y	3	SGD	Written / Viva voce / Practicals/ OSPE		
CM8.6.4	At the end of this session, students must be able to functions & Responsibilities of Medical Officer PHC	K	KH	Y	1	Lecture/ Field Visit	Written / Viva voce		
CM8.6.5	At the end of this session, students must be able to ASHA functions	K	KH	Y	1	Lecture/ Field Visit	Written / Viva voce		

CM8.6.6	At the end of this session, students must be able to MPHW(M & F) functions	K	KH	Y	1	Lecture/ Field Visit	Written / Viva voce		
CM8.6.7	At the end of this session, students must be able to MPHA(M & F) functions	K	KH	Y	1	Lecture/ Field Visit	Written / Viva voce		
CM8.6.8	At the end of this session, students must be able to anganwadi worker functions	K	KH	Y	1	Lecture/ Field Visit	Written / Viva voce		
CM8.7	**Describe the principles of management of information systems**								
CM8.7.1	At the end of this session, students must be able to Management Methods And Techniques- Methods based on behavioural sciences	K	KH	Y	3	Lecture/SGD	Written / Viva voce/ Practicals		
CM8.7.2	At the end of this session, students must be able to Management Methods And Techniques- Quantitative methods	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM9	**Demography and vital statistics**								

CM9.1	At the end of this session, students must be able to define and describe the principles of Demography, Demographic cycle, Vital statistics.	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM9.1.1	At the end of this session, students must be able to demography- Definition & Demographic cycle	K	KH	Y	1	Lecture/ SGD	Written / Viva voce		
CM9.1.2	At the end of this session, students must be able to demography- Vital statistics: .World & India demographic trends	K	KH	Y	1	Lecture/ SGD	Written / Viva voce		
CM9.2	**Define, calculate and interpret demographic indices including birth rate, death rate, fertility rates**								
CM9.2.1	At the end of this session, students must be able to definition of demographic indices including birth rate, death rate, fertility rates	S	SH	Y	3	Lecture/ SGD	Written / Viva voce/ Practicals		
CM9.2.3	At the end of this session, students must be able to calculation and interpretation of demographic indices including birth rate, death rate, fertility rates	S	SH	Y	3	Lecture/ SGD	Written / Viva voce/ Practicals		
CM9.2.4	At the end of this session, students must be able to Fertility- Related Statistics	S	SH	Y	3	Lecture/ SGD	Written / Viva voce/ Practicals		

CM9.3	**Enumerate and describe the causes of declining sex ratio and its social and health implications**								
CM9.3.1	At the end of this session, students must be able to enumerate and describe the causes of declining sex ratio	K	KH	Y	1	Lecture/SGD	Written / Viva voce		
CM9.3.2	At the end of this session, students must be able to describe the declining sex ratio and its social and health implications	K/S	KH/SH	Y	1	SGD	Written / Viva voce/ Practicals/ OSPE		
CM9.4	**Enumerate and describe the causes and consequences of population explosion and population dynamics of India**								
CM9.4.1	At the end of this session, students must be able to enumerate and describe the causes of population explosion and population dynamics of India	K	KH	Y	1	Lecture/SGD	Written / Viva voce		
CM9.4.2	At the end of this session, students must be able to enumerate and describe the consequences of population explosion and population dynamics of India	K/S	KH/SH	Y	1	Lecture/SGD	Written / Viva voce/ Practicals/ OSPE		
CM9.5	**Describe the methods of population control**								

CM9.5.1	At the end of this session, students must be able to describe the Temporary/Spacing methods of population control	K	KH	Y	3	Lecture/SGD/Practicals	Written / Viva voce		
CM9.5.2	At the end of this session, students must be able to describe the Permanent/ terminal methods of population control	K	KH	Y	3	Lecture/SGD/Practicals	Written / Viva voce		
CM9.6	**Describe the National Population Policy**								
CM9.6.1	At the end of this session, students must be able to describe the National Population Policy	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM9.7	**Enumerate the sources of vital statistics including census, SRS, NFHS, NSSO etc..**								
CM9.7.1	At the end of this session, students must be able to census, Registration of vital events, SRS, Notification of Diseaase	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM9.7.2	At the end of this session, students must be able to hospital records, Disease registers, Record linkage	K	KH	Y	3	Lecture/SGD	Written / Viva voce		
CM9.7.3	At the end of this session, students must be able to epidemiological surveillance, Environmental health data, Health manpower	K	KH	Y	3	Lecture/SGD	Written / Viva voce		

	statistics, Population surveys								
CM10	**Reproductive Maternal and Child Health**								
CM10.1.1	At the end of this session, students must be able to describe the current status of Reproductive, maternal Health	K	KH	Y	3	Lecture/SGD	Written / Viva voce	OBG	
CM10.1.2	At the end of this session, students must be able to describe the current status of Newborn and Child Health	K	KH	Y	3	Lecture/SGD	Written / Viva voce	PEDIATRICS	
CM10.2	**Enumerate and describe the methods of screening high risk groups and common health problems**								
CM10.2.1	At the end of this session, students must be able to describe the methods of screening high risk Mothers & Infants	K	KH	Y	2	Lecture/SGD	Written / Viva voce		
CM10.2.2	At the end of this session, students must be able to methods of screening NCDs & Cancers	K	KH	Y	2	Lecture/SGD	Written / Viva voce		

CM10.2.3	At the end of this session, students must be able to methods of screening STDs	K	KH	Y	2	Lecture/SGD	Written / Viva voce		
CM 10.3	**Describe local customs and practices during pregnancy, childbirth, lactation and child feeding practices**	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Pediatrics, Obstetrics &Gynaecology	
CM 10.3.1	At the end of phase 3 students must be able to describe the beneficial and harmful local customs and practices during pregnancy, childbirth and lactation prevalent in the community.	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Pediatrics, Obstetrics &Gynaecology	
CM 10.3.2	At the end of phase 3 students must be able to enumerate beneficial and harmful feeding practices prevalent in the community.	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Pediatrics, Obstetrics &Gynaecology	
CM 10.3.3	At the end of phase 3 students must be able to explain the interventions for harmful practices during pregnancy, childbirth, lactation and child feeding.	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Pediatrics, Obstetrics &Gynaecology	

CM10.4	**Describe the reproductive, maternal, newborn & child health (RMCH); child survival and safe motherhood interventions**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Obstetrics & Gynaecology, Pediatrics**	
CM10.4.1	At the end of the session, phase 3 students must be able to describe the various components of programme.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Obstetrics & Gynaecology, Pediatrics**	
CM10.4.2	At the end of session, the phase 3 students must be able to define goals & objectives.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Obstetrics & Gynaecology, Pediatrics**	
CM10.4.3	At the end of the session, phase 3 students must be able to identify target groups.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Obstetrics & Gynaecology, Pediatrics**	
CM10.4.4	At the end of the session, phase 3 students must be able to enumerate new initiatives in the programme.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Obstetrics & Gynaecology, Pediatrics**	
CM10.5	**Describe Universal Immunization Program; Integrated Management of Neonatal and Childhood Illness (IMNCI) and other existing Programs.**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Pediatrics**	

CM10.5.1	At the end of the session, phase 3 students must be able to describe the various components of universal immunization programme, goals & objectives, target groups and recently introduced the vaccines in the programme.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Pediatrics**	
CM10.5.2	At the end of the session, phase 3 students must be able to describe the essential components of integrated management of neonatal and childhood illnesses (IMNCI), goals, training & innovations and color-coded treatment strategy.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Pediatrics**	
CM10.5.3	At the end of the session, phase 3 students must be able to enumerate and describe in brief other programmes. i.e. Janani-Shishu Suraksha Karyakram (JSSK), Janani Suraksha Yojana Navjat Shishu Suraksha Karyakram (NSSK) Rashtriya Bal Swasthya Karyakram (RBSK) Adolescent Health Programme India Newborn Action Plan (INAP).	K	KH	Y		Small group discussion, Lecture	Written / Viva voce	**Pediatrics**	

CM10.6	**Enumerate and describe various family planning methods, their advantages and shortcomings**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.6.1	At the end of the session, phase 3 students must be able to describe the various components of family planning.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.6.2	At the end of the session, phase 3 students must be able to enumerate different family planning/contraceptive methods	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.6.3	At the end of the session, phase 3 students must be able to enumerate the advantages, disadvantages and contraindications of different contraceptive methods.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.7	**Enumerate and describe the basis and principles of the Family Welfare Program including the organization, technical and operational aspects**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		

CM10.7.1	At the end of the session, phase 3 students must be able to describe the basis, principles anddifferent components of family welfareprogramme.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.7.2	At the end of the session, phase 3 students must be able to enumerate the technical and operational components of family welfare programme. (i.e. training, research, infrastructure development, transport etc)	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.8	**Describe the physiology, clinical management and principles of adolescent health including ARSH**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.8.1	At the end of the session, phase 3 students must be able to describe the physiology and problems of adolescent health.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.8.2	At the end of the session, phase 3 students must be able to explain the clinical management and principles of adolescent health.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.8.3	At the end of the session, phase 3 students must be able to explain the services, its delivery and standards in ARSH.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		

CM10.9	**Describe and discuss gender issues and women empowerment**	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.9.1	At the end of the session, phase 3 students must be able to enumerate the different gender issues and its proposed solutions.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM10.9.2	At the end of the session, phase 3 students must be able to describe the women empowerment and its challenges.	K	KH	Y		Small group discussion, Lecture	Written / Viva voce		
CM12.1	**Define and describe the concept of Geriatric services**	K	KH	Y		Lecture, Small group discussion	Written / Viva voce	**General Medicine**	
CM12.1.1	At the end of this session, the phase III students must be able to define geriatric age group correctly.	K	K	Y	3	Lecture	Written	General Medicine	
CM12.1.2	At the end of this session the phase III students must be able to describe the concept of geriatric services correctly	K	K	Y	3	Lecture	Written	General Medicine	
CM12.2	**Describe health problems of aged population**	K	KH	Y		Lecture, Small group discussion	Written / Viva voce	**General Medicine**	

CM12.2.1	At the end of this session, the phase III students must be able to enumerate the health problems of aged population precisely.	K	K	Y	3	Lecture	Written	General Medicine	
CM12.2.2	At the end of this session, the phase III students must be able to describe the health problems of aged population precisely.	K	K	Y	3	Lecture	Written	General Medicine	
CM12.3	**Describe the prevention of health problems of aged population**	K	KH	Y		Lecture, Small group discussion	Written / Viva voce	**General Medicine**	
CM12.3.1	At the end of this session, the phase III students must be able to describe the ways to prevent the health problems of aged population correctly.	K	K	Y	3	Lecture	Written	General Medicine	
CM12.4	**Describe National program for elderly**	K	KH	Y		Lecture, Small group discussion	Written / Viva voce	**General Medicine**	
CM12.4.1	At the end of this session, the phase III students must be able to describe the national program for elderly correctly.	K	K	Y	3	Lecture	Written	General Medicine	
C.M 16.1	**Define and describe the concept of Health Planning**								

C.M 16.1.1	At the end of this session, students must be able to define planning.	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-	
C.M 16.1.2	At the end of this session, students must be able to describe the concept of health planning	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-	
C.M 16.2	**Describe planning cycle**								
C.M 16.2.1	At the end of this session, students must be able to describe planning cycle	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-	
C.M 16.3	At the end of this session, students must be able to describe Health management techniques								
C.M 16.3.1	At the end of this session, students must be able to define Health management	K	KH	Y	3	Lecture	Written / Viva Voice		
C.M 16.3.2	At the end of this session, students must be able to describe the quantitative management methods	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice		
C.M 16.3.3	At the end of this session, students must be able to describe the management methods based on behavioural Sciences	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice		

C.M 16.4	**Describe Health planning in India and National policies related to health and health planning**								
C.M 16.4.1	At the end of this session, students must be able to describe the various committees of health planning in India.	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-	
C.M 16.4.2	At the end of this session, students must be able to describe National Health Policy	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-	
C.M 16.4.3	At the end of this session, students must be able to what is planning commission	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-	
C.M 16.4.4	At the end of this session, students must be able to explain the role planning commission in health	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	-	
C.M 16.4.5	At the end of this session, students must be able to what is NITTI Aayog and its role in planning.	K	KH	Y	3	Lecture/ Small Group Discussion	Written / Viva Voice	Horizontal Microbiology	
18.1	**Define and describe the concept of International Health.**								
18.1.1	At the end of this session, students must be able to define the concept of International Health.	K	K	Y	3	Lecture	Theory & Viva voce		

18.1.2	At the end of this session, students must be able to describe history and concept of International Health.	K	K	Y	3	Lecture	Theory & Viva voce		
18.2	**Describe roles of various international health agencies.**								
18.2.1	At the end of this session, students must be able to describe the structure and work of World Health Organization.	K	K	Y	3	Lecture	Theory & Viva voce		
18.2.2	At the end of this session, students must be able to describe content of services given by UNICEF.	K	K	Y	3	Lecture	Theory & Viva voce		
18.2.3	At the end of this session, students must be able to describe work of other United Nations agencies such as UNDP, UN Fund for Population Activities, FAO, ILO and World Bank.	K	K	Y	3	Lecture	Theory & Viva voce		
18.2.4	At the end of this session, students must be able to describe work of Bilateral agencies and Non-governmental agencies.	K	K	Y	3	Lecture	Theory & Viva voce		
20.1	**List important public health events of last five Years.**								
20.1.1	At the end of this session, students must be able to enlist and discuss the importance of public	K	K	Y	3	Lecture	Theory & Viva voce		

	health events in the last five years.								
20.2	**Describe various issues during outbreaks and their prevention.**								
20.2.1	At the end of this session, students must be able to describe the steps involved in investigation of an outbreak.	K	K	Y	3	Lecture	Theory & Viva voce		
20.3	**Describe any event important to Health of the community.**								
20.3.1	At the end of this session, students must be able to describe the epidemiology of covid 19 pandemic .	K	K	Y	3	Lecture	Theory & Viva voce		
20.3.2	At the end of this session, students must be able to outline the preventive and control measures to be undertaken against covid 19 pandemic.	K	K	Y	3	Lecture	Theory & Viva voce		
20.4	**Demonstrate awareness about laws pertaining to practice of medicine such as Clinical establishment Act and Human Organ Transplantation Act and its implications.**								

20.4.1	At the end of this session, students must be able to describe the Clinical Establishment Act and Human Organ Transplantation Act and its implications.	K	K	Y	3	Lecture	Theory & Viva voce		

I MBBS Schedule

Date	Time	Competencies	Teaching learning method	Students Group
09.04.2022	10.15 - 01.15	PHC	Visit	A
		CM1.1, CM1.2, CM 1.3	Lecture/SGD/SDL	B
16.04.2022	10.15 - 01.15	PHC	Visit	B
		CM1.1, CM1.2, CM 1.3	Lecture/SGD/SDL	A
23.04.2022	10.15 - 01.15	Sub Center	Visit	A
		CM1.4, CM1.5,CM1.6	Lecture/SGD/SDL	B
30.04.2022	10.15 - 01.15	Sub Center	Visit	B
		CM1.4, CM1.5,CM1.6	Lecture/SGD/SDL	A

SVIMS, SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN, Tirupati.

2nd MBBS Students Theory Timetable for 2020-21 batch. (21.02.2022)

<table>
<tr><th>Day
Time</th><th>8-9</th><th colspan="3">9:00a.m to 12:00 noon</th><th>12-1</th><th>1-2</th><th>2-3</th><th>3-4</th></tr>
<tr><td>Monday</td><td>Microbiology</td><td colspan="3" rowspan="5">CLINICAL POSTINGS</td><td rowspan="7">LUNCH</td><td>Pathology</td><td colspan="2">Pathology/ Microbiology</td></tr>
<tr><td>Tuesday</td><td>Medicine</td><td>Comm. Medicine</td><td colspan="2">Pathology/ Microbiology</td></tr>
<tr><td>Wednesday</td><td>Microbiology</td><td>Pathology</td><td colspan="2">Forensic Medicine</td></tr>
<tr><td>Thursday</td><td>Pharmacology</td><td>Comm. Medicine</td><td colspan="2">Pharmacology</td></tr>
<tr><td>Friday</td><td>OBG</td><td>Pathology</td><td>Pharmacology</td><td>Microbiology</td></tr>
<tr><td rowspan="2">Saturday</td><td rowspan="2">General Surgery</td><td>9-10</td><td>10-11</td><td>11-12</td><td rowspan="2">Pathology</td><td colspan="2" rowspan="2">AETCOM/ Integration</td></tr>
<tr><td colspan="2">Pharmacology</td><td>Microbiology</td></tr>
</table>

*1 On every Monday Roll nos. 2005001 to 2005091 to attend pathology practical classes between 2-4 pm and Roll nos. 2005092 to 2005177 & 2019-20 batch Students to attend microbiology practical classes between 2-4 pm.

*2 On every Tuesday Roll nos. 2005001 to 2005091 to attend microbiology practical classes between 2-4 pm and Roll nos. 2005092 to 2005177 & 2019-20 batch students to attend Pathology practical classes between 2-4 pm.

*3 AETCOM classes will be taken by Pathology, Pharmacology and Microbiology departments in coordination with other departments to teach topics/modules concern to the respective departments.

Note: On every Friday, PD class will be taken between 4-5 pm.

18-2-22

Professor& Head pathology

SVIMS, SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN, TIRUPATI

3rd MBBS Part-I Theory Time Table -2019-2020 Batch

w.e.f. 21.03.2022 to 21.08.2022.

Days time	8.00-9.00 am	9.00-12.00 pm	12.00-1.00 pm	1.00-2.00 pm	2.00-3.00 pm	3.00-4.00 pm
Mon	General Medicine	Clinical Postings	Lunch	Community Medicine	ENT	DVL
Tues	General Surgery			Ophthalmology	ENT	Forensic Medicine
Wed	OBG			TB &RD	Pediatrics	Psychiatry
Thurs	General Medicine			Community Medicine	Forensic Medicine	Forensic Medicine
Fri	General Surgery			Radiology	Ophthalmology	Orthopedics
Sat	OBG			Anesthesiology	AETCOM / Integration / Pandemic Module	

*Every Saturday - 4.00 pm to 5.00 pm - PD / Extra Curricular Activities.

SVIMS, SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN, TIRUPATI

3rd MBBS Part-I Theory Time Table -2019-2020 Batch

w.e.f. 22.08.2022 to 15.01.2023.

Days time	8.00-9.00 am	9.00-12.00 pm	12.00-1.00 pm	1.00-2.00 pm	2.00-3.00 pm	3.00-4.00 pm
Mon	General Medicine	Clinical Postings	Lunch	Community Medicine	Community Medicine	ENT
Tues	General Surgery			Ophthalmology	Psychiatry	Orthopedics
Wed	OBG			Community Medicine	ENT	Pediatrics
Thurs	General Medicine			Ophthalmology	Forensic Medicine	Forensic Medicine
Fri	General Surgery			Forensic Medicine	Ophthalmology	Orthopedics
Sat	OBG			DVL	AETCOM / Integration / Pandemic Module	

*Every Saturday - 4.00 pm to 5.00 pm - PD / Extra Curricular Activities.

1st Clinical Posting (Community Medicine)

S No.	Day	TIME	TOPIC
1	Monday	9AM-12PM	CM 2.1.1 to CM 2.1.4
2	Tuesday	9AM-12PM	CM 2.1.5, CM 2.1.6, CM 2.2.1 to CM 2.2.5
3	Wednesday	9AM-12PM	CM 2.3.1 to CM 2.3.3 & CM 3.5.1 to CM 3.5.3
4	Thursday	9AM-12PM	CM 5.2.1 to CM 5.2.14
5	Friday	9AM-12PM	CM 5.4.1 to CM 5.4.4
6	Monday	9AM-12PM	Data Collection CM 6.2.1
7	Tuesday	9AM-12PM	Data Collection CM 6.2.1
8	Wednesday	9AM-12PM	Data Collection CM 6.2.1
9	Thursday	9AM-12PM	Formative Assessment in Community
10	Friday	9AM-12PM	Formative Assessment
11	Monday	9AM-12PM	Feedback
12	Wednesday	9AM-12PM	CM 6.2.2 & CM 6.2.3
13	Thursday	9AM-12PM	CM 6.2.4/ Formative Assesment
14	Friday	9AM-12PM	CM 6.2.5 to CM 6.2.6, CM 9.2.1 to 9.2.3
15	Monday	9AM-12PM	CM 6.2.7
16	Tuesday	9AM-12PM	Formative Assesment & Feedback
17	Wednesday	9AM-12PM	End Posting Exam

2nd Clinical Posting – I (Community Medicine)
[2 weeks]

S No.	DAY	TIME	TOPIC
1.	Monday	9AM TO 12 NOON	CSC - TB
2.	Tuesday	9AM TO 12 NOON	TB - Formative Assessment & Feedback
3.	Wednesday	9AM TO 12 NOON	CSC - HTN
4.	Thursday	9AM TO 12 NOON	CSC - HTN
5.	Friday	9AM TO 12 NOON	Field Visit - PHC/RHTC/Wellness centre
6.	Saturday	9AM TO 12 NOON	CSC- Leprosy
7.	Monday	9AM TO 12 NOON	Leprosy - Formative Assessment & Feedback
8.	Tuesday	9AM TO 12 NOON	CSC - D.M.
9.	Wednesday	9AM TO 12 NOON	CSC - D.M.
10.	Thursday	9AM TO 12 NOON	Field Visit - Health Sub Centre
11.	Friday	9AM TO 12 NOON	Field Visit - Anganwadi Centre
12.	Saturday	9AM TO 12 NOON	End Posting Exam

3rd Clinical Posting – I (Community Medicine)
[4 weeks]

Week	S.No.	Topic
1st Week	1.	CSC - ANC
	2.	CSC – ANC
	3.	CSC - PNC
	4.	CSC - PNC
	5.	CSC - DM
	6.	CSC – DM
2nd Week	7.	CSC – HTN
	8.	CSC – HTN
	9.	CSC – Under Five (Diarrhoea)
	10.	CSC – Under Five (Diarrhoea)
	11.	CSC – Under Five (ARI)
	12.	CSC – Under Five (ARI)
3rd Week	13.	CSC – TB
	14.	CSC – TB
	15.	Epidemiological Exercises - 1
	16.	Statistical l Exercises – 1
	17.	Epidemiological Exercises – 2
	18.	Statistical l Exercises – 2
4th Week	19.	Epidemiological Exercises – 3
	20.	Statistical l Exercises – 3
	21.	Visit to water treatment plant
	22.	Visit to sewage treatment plant
	23.	Visit to old age home
	24.	End Posting Exam

DISTRIBUTON OF ATTITUDE ETHICS AND COMMUNICATION SKILLS (AETCOM) MODULE

SI NO	MODULE	TOPIC	DEPARTMENT					No. of hours	Formative assessment	Summative assessment
			PA	MI	PH	CM	FM			
1	2.1	Foundation of communication				✓		5	✓	-
2	2.2	Foundation of bioethics					✓	2	-	✓
3	2.3	Health care as a right				✓		2	-	✓
4	2.4	Working in a health care team	✓					6	✓	-
5	2.5	Bioethics- case studies on patient autonomy and decision making (patient rights and shared responsibility in health care)			✓			6	✓	✓
6	2.6	Bioethics-Case studies on patient autonomy and decision making (refusal of care including do not resuscitate and withdrawal of lifeSupport)			✓			5	✓	✓
7	2.7	Bioethics- Case studies on patient autonomy and decision making (consent for surgical procedures)		✓				5	✓	✓
8	2.8	What does it mean to be a family member of sick patient					✓	6	✓	✓

**PA-Pathology; MI- Microbiology; PH- Pharmacology; CM- Community medicine; FM- Forensic medicine.

Schedule of AETCOM classes for III MBBS (Part I) students

Sl. No	Module	Topic	Department
1.	3.1	The foundations of communication	Community Medicine
2.	3.1	The foundations of communication	Community Medicine
3.	3.2	Case studies in bioethics - Disclosure of medical errors	ENT
4.	3.2	Case studies in bioethics - Disclosure of medical errors	ENT
5.	3.3	The foundations of communication	Community Medicine
6.	3.3	The foundations of communication	Community Medicine
7.	3.4	Case studies in bioethics - Confidentiality	Ophthalmology
8.	3.4	Case studies in bioethics - Confidentiality	Ophthalmology
9.	3.5	Case studies in bioethics - Fiduciary duty	Forensic Medicine
10	3.5	Case studies in bioethics - Fiduciary duty	Forensic Medicine

COMMUNITY MEDICINE

PAPER – I

1**. History of Public Health in India**
2. **Concept of Health and disease**
3. **Demography and family planning**
4. **Biostatistics**
5. **Environment and Health**
6. **General Epidemiology**
7. **Screening for disease**
8. **Social sciences**
9. **Nutrition**
10. **Mental Health**
11. **Genetics and Health**
12. **Hospital acquired infections**
13. **Hospital waste management**

COMMUNITY MEDICINE

Paper – II

1. **Epidemiology of Communicable disease**
2. **Emerging and Re-emerging infectious diseases.**
3. **Epidemiology of Non-Communicable diseases and conditions.**
4. **Occupational diseases**
5. **Maternal and Child health & Family Welfare**
6. **Geriatric Health**
7. **National Health Programmes**
8. **Health care delivery System**
9. **Health education & Communication**
10. **Health Information system**
11. **Health Planning and management**
12. **International Health.**
13. **Disaster Management.**

EVALUATION METHODOLOGY

Summative Assessment - Assessment will be conducted at the end of instruction to check how much the student has learnt.

Formative Assessment - Assessment will be conducted during the instruction with primary purpose of providing feedback for improved learning.

Internal Assessment - Range of assessments conducted by the teachers teaching a particular subject with the purpose of knowing what is learnt. Internal assessment can have both formative and summative functions.

Theory IA includes: Written test includes essay questions, short notes and MCQs.

Practical IA includes: Practical tests, Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), records maintenance and attitudinal assessment.

Assessment of Log-book- Log book should record all activities like seminar, symposia, quizzes and other academic activities. It should be assessed regularly and submitted to the department. Up to ten (10) per cent IA Practical marks should be for Log book assessment.

Assessment of Practical Record book- Practical book should record all skills and other practical exercises done during the academic programme. It will be assessed regularly and submitted to the department.

Assessment for AETCOM will include: - Written tests comprising of short notes and creative writing experiences only in internal assessment.

MODEL QUESTION PAPER

COMMUNITY MEDICINE

PAPER I

Long Essay

1. Classify Epidemiological Studies? Outline the steps involved in conducting a case-control study? Enlist the advantages and disadvantages of a case-control study.
(4+6+5=15 Marks)

2. Discuss under nutrition among children under the following heads:
(4+5+6=15 Marks)
   a. Types of under nutrition
   b. Causes of under nutrition
   c. Preventive measures against Malnutrition

Short Answers

(10X5=50 Marks)

3. Ice-berg Phenomenon of the disease
4. Types of epidemic
5. Herd Immunity
6. Cold chain system in a PHC
7. Human Development Index
8. Sustainable development goals
9. Doctor Patient relationship
10. Demographic cycle
11. Hospital acquired infections
12. Warning signals of mental health problems

Multiple choice questions

(20X1=20 Marks)

MODEL QUESTION PAPER

COMMUNITY MEDICINE

PAPER II

Long Essay

13. Define Perinatal Mortality Rate. Discuss its causes and measures for prevention and control of Perinatal Mortality Rate. (4+6+5=15 Marks)

14. Define primary health care? Enlist elements of primary health care? Discuss the principles of primary health care? (4+5+6=15 Marks)

Short Answers

(10X5=50 Marks)

15. National Mental Health Programme
16. Census
17. Give a brief account of organization and functions of WHO
18. Bhore Committee
19. National Nutritional Anaemia Prophylaxis Programme
20. Functions of ASHA
21. PERT
22. Standard Normal Curve
23. Screening of Breast Cancer
24. Home Isolation measures for COVID-19

Multiple choice questions

(20X1=20 Marks)

Recommended Books:

1. Park's Textbook of Preventive and Social Medicine, by K.Park.
2. IAPSM's Textbook of Community Medicine, By AM Kadri
3. Epidemiology, by Leon Gordis.
4. Medical Statistics by Sundar Rao
5. Medical Statistics by Mahajan
6. National Health Programmes by Jugal Kishore

DEPARTMENT OF Otorhinolaryngology (ENT)

Goals and Objectives of the SVIMS- SPMCW OtorhinolaryngologyCurriculum

Goals

The Goal of training in this subject is to make the candidate familiar with common ENT problems. The IMG should be competent enough to diagnose and treat routine ENT diseases and should be able to identify the cases, which require specialist care and identify the deaf individuals at the earliest and refer them for properrehabilitation

Competencies

The Learner must demonstrate

1. Knowledge of the common Otorhinolaryngological(ENT) emergencies andproblems
2. Ability to recognize, diagnose and manage common ENT emergencies and problems in primary caresetting
3. Ability to perform simple ENT procedures as applicable in a primary caresetting
4. Ability to recognize hearing impairment and refer to the appropriate Hearing impairment rehabilitationprogramme.

Skills

1. Examine and diagnose common disorders of the Ear, Nose and Throat region and manage at first level ofcare.
2. Recognize premalignant and malignant cases of head and neck region at an earlystage.
3. Remove foreign bodies in the ear andnose.
4. Perform lifesaving surgical procedures in patients with airway emergencies.
5. Should be familiar with drainage of intra oral and neckabscesses.
6. Able to do anterior and posterior nasal packing to controlEpistaxis

Integration

The teaching should be aligned and integrated horizontally and vertically in order to allow the learner to understand the structural basis of ENT problems, their management and correlation with function, rehabilitation and quality oflife

Attitude and communication skills

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

a. Communicate effectively with patients, their families and the public at large.
b. Communicate effectively with peers and teachers; demonstrate the ability to work effectively with peers in ateam.
c. Demonstrate professional attributes of punctuality, accountability and respect for teachers andpeers.
d. Appreciate the issues of equity and social accountability while undergoing early clinicalexposure**.**

Interactive Lectures - 25 hours

Proposed topics

Sl No	Topics
1	**Anatomy & Physiology of Ear**
2	**Anatomy & Physiology of Nose**
3	**Anatomy & Physiology of Throat**
4	**Anatomy &Physiology of Head & Neck**
5	**Diseases of the External Ear**
6	**Non-infectious disordersof Middle Ear**
7	**Infections of Middle Ear**
8	**Diseases of Inner Ear**
9	**Hearing Loss & Tinnitus**
10	**Vertigo & Balance Disorders**
11	**Facial Nerve Paralysis**
12	**Diseases of Nasal Septum**
13	**Non-infectious Rhinitis**
14	**Acute & Chronic Rhinosinusitis**
15	**Epistaxis &Head & neck Trauma**
16	**Tumors of Nose & PNS**
17	**Tumors of Nasopharynx & JNA**
18	**Diseases of Salivary glands**
19	**Acute & chronic Pharyngitis & Tonsillitis**
20	**Head & Neck Space Infections**
21	**Laryngeal Infections &Benign disorders of Larynx**
22	**Malignancy of Larynx & Hypopharynx**
23	**Stridor & management of Airway Emergencies**
24	**Diseases of Oesophagus**
25	**HIVmanifestationsoftheENT**

Small Group Teaching- 40 hours

Proposed topics

SlNo	Topics	No of hours	SG TL methods
1	Anatomy &Physiology of ear	02	Seminars & Model/chart marking
3	Otoscopic examination of the Tympanic Membrane	02	Simulation (DOAP)
4.	Otomicroscopic examination in a simulated Environment	02	Simulation (DOAP)
5	Tuning fork test	02	DOAP
6	Foreign body removal from ear/ Syringing wax from ear	02	Simulation (DOAP)
7	Assessment & Rehabilitation of hearing Impaired NPPCD	02	Seminars & SGD (DOAP)
8	Interpretation of pure tone Audiograms &Impedance Audiogram	02	SGD (Discussion of patient reports)
9.	Surgical procedure of the ear	03	Seminars & Video demonstration
10.	Diagnostic nasal endoscopy & Anatomy of Nose	03	Seminars, Video Demonstaration&Simulation
11.	Smell and taste perception	02	Seminars, SGD – chart making
12.	Epistaxis & Anterior nasal packing	03	Seminars, Video Demonstaration&Simulation
13.	Foreign bodies in the nose & Upper Respiratory tract &their management	03	Video demonstration and simulation
14.	Surgical procedures of the Nose	02	Seminars & Video Demonstration
15.	Anatomy &Physiology of throat	02	Seminars & Model/Chart Making
16	Surgical procedures of the throat	02	Seminars, Video Demonstaration&Simulation
17	Airway emergency and management Of stridor (Including tracheostomy)	03	Seminars & Video Demonstration & simulation
18.	Counsel & Administer informed consent	01	Simulation-DOAP
19.	Malignant and pre malignant ENT Disease	01	Seminars, SGD
20.	The national programs for prevention of deafness cancer, noise and environment pollution	01	Seminars, Awareness activities (Poster making)

Topics for Integration with Otorhinolaryngology from other Departments

Sl. No	Integrated Teaching	Integrated with (Department)
1	Describe the (1) morphology, relations, blood supply and applied anatomy of palatine tonsil and (2) composition of soft palate	Human Anatomy
2	Describe the components and functions of waldeyer's lymphatic ring	Human Anatomy
3	Describe the boundaries and clinical significance of pyriform fossaHuma	Human Anatomy
4	Describe the anatomical basis of tonsilitis, tonsillectomy, adenoids and peri-tonsillar abscess	Human Anatomy
5	Describe the clinical significance of Killian'sdehiscence	Human Anatomy
6	Describe & demonstrate feature sofnasalseptum, lateralwall of nose, their blood supply and nerve supply	Human Anatomy
7	Describe location and functional anatomy of paranasalsinuses	Human Anatomy
8	Describe anatomical basis of sinusitis & maxillary sinus tumours	Human Anatomy
9	Describe the morphology, identify structure of the wall, nerve supply,bloodsupplyandactionsofintrinsicandextrinsicmusclesof the larynx	Human Anatomy
10	Describe the anatomical aspects of laryngitis	Human Anatomy
11	Describe anatomical basis of recurrent laryngeal nerveinjury	Human Anatomy
12	Explain the anatomical basis of hypoglossal nerve palsy	Human Anatomy
13	Describe & identify the parts, blood supply and nerve supply of external ear	Human Anatomy
14	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube	Human Anatomy
15	Describe the features of internal ear	Human Anatomy
16	Explain anatomical basis of otitis externa and otitis media Human Anatomy	Human Anatomy
17	Explain anatomical basis of myringotomy Human Anatomy	Human Anatomy
18	Describe and discuss perception of smell and taste sensation	Physiology
19	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing	Physiology
20	Describe and discuss pathophysiology of deafness. Describe hearing Tests	Physiology
21	Demonstrate (i) hearing (ii) testing for smell and (iii) taste sensation in volunteer/ simulated environment	Physiology
22	Describe the health hazards of air, water, noise, radiation and pollution.	Community Medici
23	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity	Dentistry
24	Discuss the role of etiological factors in the formation of precancerous /cancerous lesions	Dentistry

25	Identify potential pre-cancerous /cancerous lesions	Dentistry
26	Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors	Dentistry
27	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in theelderly	General Medicine
28	Discuss the risk factors, clinical features, Diagnosis and management of Kerosene ingestion	Paediatrics
29	Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis	Paediatrics
30	Discuss the etio-pathogenesis of PharyngoTonsillitis Paediatrics	
31	Discuss the clinical features and management of Pharyngo Tonsillitis	Paediatrics
32	Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM)	Paediatrics
33	Discuss the etio-pathogenesis, clinical features and management of Epiglottitis	Paediatrics
34	Discuss the etio-pathogenesis, clinical features and management of Acute laryngo-trachea-bronchitis	Paediatrics
35	Discuss the etiology, clinical features and management of Stridor in Children	Paediatrics
36	Discuss the types, clinical presentation, and management offoreign body aspiration in infants and children	Paediatrics
37	Elicit, document and present age appropriate history of a child with upper respiratory problem including Stridor	Paediatrics
38	Perform otoscopic examination of the ear Paediatrics	
39	Perform throat examination using tongue depressor Paediatrics	
40	Perform examination of the nose Paediatrics	
41	Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case of management. Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in pediatric chest X-rays	Paediatrics
42	Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children	Paediatrics
43	Describe the etio-pathogenesis, clinical features and management of Atopic dermatitis in children	Paediatrics
44	Describe etiopathogenesis of oral cancer, symptoms and signs of pharyngeal cancer. Enumerate the appropriate investigations and discuss the principles of treatment.	General Surgery

Self-Directed Learning

Proposed topics

Sl. No	Topics	SLOs
1	Hearing Loss	
2	Vertigo	
3	Allergy	
4	Rhinosinusitis	
5	Head & Neck Tumors	

OTORHINOLARYNGOLOGY

Core competencies –colorBlue **Non - Core competencies – colorGreen**

TOPIC: ANATOMY AND PHYSIOLOGY OF EAR, NOSE, THROAT, HEAD & NECK

Number of competencies:(02) Number of procedures that require certification:(NIL)

EN1.1Describe the Anatomy & physiology of ear, nose, throat, head & neck
Domain–K **Level -KH**
Vertical Integration – Human Anatomy

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN1.1.1	Describe the Anatomy of ear	Lecture, Demonstration	Written, viva-voce
EN1.1.2	Describe the Anatomy of nose	Lecture, Demonstration	Written, viva-voce
EN1.1.3	Describe the Anatomy of throat	Lecture, Demonstration	Written, viva-voce
EN1.1.4	Describe the Anatomy of head & neck	Lecture, Demonstration	Written, viva-voce
EN1.1.5	Describe the Physiology of ear	Lecture, Demonstration	Written, viva-voce
EN1.1.6	Describe the Physiology of nose	Lecture, Demonstration	Written, viva-voce
EN1.1.7	Describe the Physiology of throat	Lecture, Demonstration	Written, viva-voce
EN1.1.8	Describe the Physiology of head & neck	Lecture, Demonstration	Written, viva-voce

EN1.2 Describe the patho-physiology of common diseases in ENT
Domain–K **Level -KH**
Vertical Integration – Pathology

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN1.2.1	Describe the patho-physiology of common diseases of the ear	Lecture, Demonstration, Bedside clinics	Written, viva-voce
EN1.2.2	Describe the patho-physiology of common diseases of the nose	Lecture, Demonstration, Bedside clinics	Written, viva-voce
EN1.2.3	Describe the patho-physiology of common diseases of the throat	Lecture, Demonstration, Bedside clinics	Written, viva-voce
EN1.2.4	Describe the patho-physiology of common diseases of the head & neck	Lecture, Demonstration, Bedside clinics	Written, viva-voce

TOPIC: CLINICAL SKILLS

Number ofcompetencies:(15) Number of procedures that require certification: (NIL**)**

To be taught and assessed in bed-side clinics and / or simulated environment.

EN2.1 Elicit document and present an appropriate history in a patient presenting with an ENT complaint
Domain–K/S/A/C **Level – SH**

EN2.2 Demonstrate the correct use of a headlamp in the examination of the ear, nose and throat
Domain–S **Level –SH**

EN2.3 Demonstrate the correct technique of examination of the ear including Otoscopy
Domain–K/S/A **Level – SH**

EN2.4 Demonstrate the correct technique of performance and interpret tuning fork tests
Domain–K/S/A **Level – SH**

EN2.5 Demonstrate the correct technique of examination of the nose & paranasal sinuses including the use of nasal speculum
Domain–S **Level –SH**

EN2.6 Demonstrate the correct technique of examining the throat including the use of a tongue depressor
Domain–S **Level –SH**

EN2.7 Demonstrate the correct technique of examination of neck including elicitation of laryngeal crepitus
Domain–S **Level –SH**

EN2.8 Demonstrate the correct technique to perform and interpret pure tone audiogram & impedance audiogram
Domain–K/S **Level – SH**

EN2.9 Choose correctly and interpret radiological, microbiological &histological investigations relevant

to the ENT disorders
Domain–K/S **Level – SH**

EN2.10 Identify and describe the use of y common instruments used in ENT surgery
Domain–K **Level –SH**

EN2.11 Describe and identify by clinical examination malignant & pre- malignant ENT diseases
Domain–K/S **Level –SH**

EN2.12 Counsel and administer informed consent to patients and their families in a simulated environment
Domain–S/A/C **Level – SH**

EN2.13 Identify, resuscitate and manage ENT emergencies in a simulated environment (including tracheostomy, anterior nasal packing, removal of foreign bodies in ear, nose, throat and upper respiratory tract)
Domain–K/S/A **Level – SH**

EN2.14 Demonstrate the correct technique to instilling topical medications in to the ear, nose and throat in a simulated environment
Domain–K/S **Level – SH**

EN2.15 Describe the national programs for prevention of deafness, cancer, noise & environmental pollution
Domain–K **Level – KH**

TOPIC: DIAGNOSTIC AND THERAPEUTIC PROCEDURES IN ENT

Number of competencies:(06) Number of procedures that require certification:(NIL)

To be taught and assessed in bed-side clinics and / or simulated environment.

EN3.1 Observe and describe the indications for and steps involved in the performance of Oto-microscopic examination in a simulated environment
Domain–S **Level – KH**

EN3.2 Observe and describe the indications for and steps involved in the performance of diagnostic nasal Endoscopy
Domain–S **Level – KH**

EN3.3 Observe and describe the indications for and steps involved in the performance of Rigid/Flexible Laryngoscopy
Domain–K **Level – KH**

EN3.4 Observe and describe the indications for and steps involved in the removal of foreign bodies from ear, nose & throat
Domain–K **Level – KH**

EN3.5 Observe and describe the indications for and steps involved in the surgical procedures in ear, nose & throat

Domain–K **Level – KH**

EN3.6 Observe and describe the indications for and steps involved in the skills of emergency procedures in ear, nose & throat
Domain–K **Level – KH**

TOPIC: MANAGEMENT OF DISEASES OF EAR, NOSE & THROAT

Number of competencies:(53) Number of procedures that require certification:(NIL)

EN4.1 Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Otalgia
Domain–K/S **Level - SH**

EN4.2 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of diseases of the external Ear
Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.1.1	List the causes of Otalgia	Lecture	Written, viva-voce
EN4.1.2	Elicit correct history in patients with Otalgia	Bedside clinic	Skill assessment
EN4.1.3	Document and present correct history in patients with Otalgia	Bedside clinic Skill	Assessment
EN4.1.4	Describe the clinical features in a patient presenting with Otalgia	Bedside clinic Skill	Assessment
EN4.1.5	Choose the correct investigations in a patient presenting with Otalgia	Bedside clinic Viva voce	
EN4.1.6	Describe the principles of management of Otalgia	Lecture ,Bedside clinic	Viva voce

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.2.1	List the diseases of external ear	Lecture	Written, viva-voce
EN4.2.2	Elicit correct history in patients presenting with disease of the external Ear	Bedside clinic	Skill assessment
EN4.2.3	Document and present correct history in patients with diseases of the external Ear	Bedside clinic	Skill assessment
EN4.2.4	Describe the clinical features in a patient presenting with diseases of the external Ear	Bedside clinic	Skill assessment
EN4.2.5	Choose the correct investigations in a patient presenting with diseases of the external Ear	Bedside clinic	Viva voce
EN4.2.6	Describe the principles of management of diseases of the external Ear	Lecture ,Bedside clinic	Viva voce

EN4.3Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of ASOM
Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.3.1	Elicit correct history in patients presenting with ASOM	Bedside clinic	Skill assessment

EN4.3.2	Document and present correct history in patients with ASOM	Bedside clinic	Skill assessment
EN4.3.3	Describe the clinical features in a patient presenting withASOM	Bedside	Skill

		clinic	Assessment
EN4.3.4	Choose the correct investigations in a patient presenting with ASOM	Bedside clinic	Viva voce
EN4.3.5	Describe the principles of management of ASOM	Lecture ,Bedside clinic	Viva voce

EN4.4Demonstrate the correct technique to hold visualize and assess the mobility of the tympanic membrane and its mobility and interpret and diagrammatically represent the findings
Domain–K/S/A **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.4.1	Describe the normal appearance of Tympanic membrane	Lecture	Viva voce
EN4.4.2	Demonstrate the correct technique to hold & visualize the tympanic membrane	DOAP session	Skill assessment
EN4.4.3	Demonstrate the correct technique to assess the mobility of the tympanicmembrane	DOAP session	Skill assessment
EN4.4.4	Interpret and diagrammatically represent the findings of the tympanic membrane assessment	Bedside clinics	Viva voce

EN4.5 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of OME
Domain–K/S **Level -SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.5.1	Elicit correct history in patients presenting with OME	Bedside clinics	Skill assessment
EN4.5.2	Document and present correct history in patients with OME	Bedside clinics	Skill assessment
EN4.5.3	Describe the clinical features in a patient presenting with OME	Lecture, Bedside clinics	Skill assessment
EN4.5.4	Choose the correct investigations in a patient presenting withO	Bedside clinics	Viva voce
EN4.5.5	Describe the principles of management of OME	Lecture	Written, viva voce

EN4.6 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Discharging ear
Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.6.1	List the causes of Discharging ear	Lecture	Written, viva-voce
EN4.6.2	Elicit correct history in patients presenting with Discharging ear	Bedside clinic	Skill assessment
EN4.6.3	Document and present correct history in patients with Discharging ear	Bedside clinic	Skill assessment
EN4.6.4	Describe the clinical features in a patient presenting with Discharging ear	Bedside clinic	Skill assessment

EN4.6.5	Choose the correct investigations in a patient presenting with Discharging ear	Bedside clinic	Viva voce
EN4.6.6	Describe the principles of management of Discharging ear	Lecture ,Bedside clinic	Written, Viva voce

EN4.7 Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management ofmucosal type of CSOM

Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.7.1	Elicit correct history in patients presenting with mucosal type of CSOM	Bedside clinic	Skill assessment
EN4.7.2	Document and present correct history in patients with mucosal type of CSOM	Bedside clinic	Skill assessment
EN4.7.3	Describe the clinical features in a patient presenting with mucosal type of CSOM	Bedside clinic	Skill assessment
EN4.7.4	Choose the correct investigations in a patient presenting with mucosal type of CSOM	Bedside clinic	Viva voce, written
EN4.7.5	Describe the principles of management of mucosal type of CSOM	Lecture ,Bedside Clinic	Written, Viva Voce

EN4.8 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of CSOM

Domain–K/S **Level -SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.8.1	Elicit correct history in patients presenting with squamosal type of CSOM	Bedside clinic	Skill assessment
EN4.8.2	Document and present correct history in patients with squamosal type of CSOM	Bedside clinic	Skill assessment
EN4.8.3	Describe the clinical features in a patient presenting with squamosal type of CSOM	Bedside clinic	Skill assessment
EN4.8.4	Choose the correct investigations in a patient presenting with squamosal type of CSOM	Bedside clinic	Viva voce, written
EN4.8.5	Describe the principles of management of squamosal type of CSOM	Lecture ,Bedside clinic	Written, Viva voce

EN4.9 Demonstrate the correct technique for syringing wax from the ear in a simulated environment

Domain–S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.9.1	Describe the correct technique for syringing wax from the ear	DOAP	Skill assessment
EN4.9.2	Demonstrate the correct technique for syringing wax from the ear in a simulated environment	DOAP	Skill assessment

EN4.10 Observe and describe the indications for and steps involved in myringotomy and myringoplasty

Domain–S **Level - KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.10.1	Enumerate the indications for myringotomy	Lecture	Written , viva voce
EN4.10.2	Describe the steps of myringotomy	Lecture, video	Written , viva

		demonstration	Voce
EN4.10.3	Observe steps involved in myringotomy	Clinical (OT)	Written , viva voce
EN4.10.4	Enumerate the indications for myringoplasty	Lecture	Written , viva voce
EN4.10.5	Describe the steps of myringoplasty	Lecture, video demonstration	Written , viva voce
EN4.10.6	Observe steps involved in myringoplasty	Clinical (OT)	Written , viva voce

EN4.11Enumerate the indications describe the steps and observe a Mastoidectomy
Domain–K/S **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.11.1	Enumerate the indications for Mastoidectomy	Lecture	Written , viva voce
EN4.11.2	Describe the steps of Mastoidectomy	Lecture	Written , viva Voce
EN4.11.3	Observe steps involved in Mastoidectomy	Clinical (OT)	Written , viva voce

EN4.12 Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Hearing loss
Domain–K/S **Level -SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.12.1	List the causes of Hearing loss	Lecture	Written, viva-voce
EN4.12.2	Elicit correct history in patients presenting with Hearing loss	Bedside clinic	Skill assessment
EN4.12.3	Document and present correct history in patients with Hearing loss	Bedside clinic	Skill assessment
EN4.12.4	Describe the clinical features in a patient presenting with Hearing loss	Bedside clinic	Skill assessment

features, investigations and principles of management of Otosclerosis Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.13.1	Describe the clinical features of Otosclerosis	Lecture	Written
EN4.13.2	Describe the investigations required for patient with Otosclerosis	Bedside clinic	Viva voce
EN4.13.3	Describe the principles of management of Otosclerosis	Lecture ,Bedside clinic	Written, Viva voce

EN4.14 Describe the clinical features, investigations and principles of management of Sudden Sensorineural Hearing Loss
Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods

EN4.14.1	Describe the clinical features of Sudden Sensorineural Hearing Loss	Lecture	Written
EN4.14.2	Describe the investigations required for patient presenting with Sudden Sensorineural Hearing Loss	Bedside clinic	Viva voce
EN4.14.3	Describe the principles of management of Sudden Sensorineural Hearing Loss	Lecture ,Bedside clinic	Written, Viva voce

EN4.15 Describe the clinical features, investigations and principles of management of Noise Induced HearingLoss
Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.15.1	Describe the clinical features of Noise Induced Hearing Loss	Lecture	Written
EN4.15.2	Describe the investigations required for patient presenting with Noise Induced Hearing Loss	Bedside clinic	Viva voce
EN4.15.3	Describe the principles of management of Noise Induced Hearing Loss	Lecture ,Bedside clinic	Written, Viva voce

EN4.16 Observe and describe the indications for and steps involved in the performance of pure toneaudiometry
Domain–S **Level - KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.16.1	Enumerate the indications for pure tone audiometry	Lecture	Written, viva voce
EN4.16.2	Describe the steps involved in the performance of pure tone audiometry	DOAP	viva voce
EN4.16.3	Observe the steps involved in the performance of pure tone audiometry	DOAP	viva voce

EN4.17 Enumerate the indications and interpret the results of an audiogram
Domain–S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.17.1	Enumerate the indications for an audiogram	Bedside clinics, DOAP	Viva voce
EN4.17.2	Interpret the results of an audiogram	DOAP	Skill assessment

EN4.18 Describe the clinical features, investigations and principles of management of Facial Nerve palsy
Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.18.1	Describe the clinical features of Facial Nerve palsy	Lecture	Written, viva voce
EN4.18.2	Describe the investigations required for patient presenting with Facial Nerve palsy	Bedside clinics	Written, viva voce

EN4.18.3	Describe the principles of management of Facial Nerve palsy	Lecture ,Bedside clinic	Written, Viva voce

EN4.19 Describe the clinical features, investigations and principles of management of Vertigo
Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.19.1	Describe the clinical features of patient presenting with Vertigo	Lecture	Written, viva voce
EN4.19.2	Describe the investigations required for patient presenting with Vertigo	Bedside clinics	Written, viva voce
EN4.19.3	Describe the principles of management of Vertigo	Lecture ,Bedside clinic	Written, Viva voce

EN4.20 Describe the clinical features, investigations and principles of management of Meniere's Disease
Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.20.1	Describe the clinical features of patient presenting with Meniere's Disease	Lecture	Written, viva voce
EN4.20.2	Describe the investigations required for patient presenting with Meniere's Disease	Bedside clinics	Written, viva voce
EN4.20.3	Describe the principles of management of Meniere's Disease	Lecture ,Bedside clinic	Written, Viva voce

EN4.21 Describe the clinical features, investigations and principles of management of Tinnitus
Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.21.1	Describe the clinical features of patient presenting with Tinnitus	Lecture	Written, viva voce
EN4.21.2	Describe the investigations required for patient presenting with Tinnitus	Bedside clinics	Written, viva voce
EN4.21.3	Describe the principles of management of Tinnitus	Lecture ,Bedside clinic	Written, Viva voce

EN4.22 Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Nasal Obstruction
Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.22.1	List the causes of Nasal obstruction	Lecture	Written, viva-voce
EN4.22.2	Elicit correct history in patients presenting with Nasal obstruction	Bedside clinic	Skill assessment
EN4.22.3	Document and present correct history in patients with Nasal obstruction	Bedside clinic	Skill assessment
EN4.22.4	Describe the clinical features in a patient presenting with Nasal obstruction	Bedside clinic	Skill assessment
EN4.22.5	Choose the correct investigations in a patient presenting with Nasal obstruction	Bedside clinic	Viva voce

EN4.22.6	Describe the principles of management of Nasal obstruction	Lecture ,Bedside clinic	Written, Viva voce

EN4.23 Describe the clinical features, investigations and principles of management of DNS
Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.23.1	Describe the clinical features of patient presenting with DNS	Lecture	Written, viva voce
EN4.23.2	Describe the investigations required for patient presenting with DNS	Bedside clinics	Written, viva voce
EN4.23.3	Describe the principles of management of DNS	Lecture ,Bedside clinic	Written, Viva voce

EN4.24 Enumerate the indications observe and describe the steps in a septoplasty
Domain–S **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.24.1	Enumerate the indications for septoplasty	Lecture	Written , viva voce
EN4.24.2	Describe the steps of septoplasty	DOAP - video demonstration	Written , viva voce
EN4.24.3	Observe steps involved in septoplasty	DOAP - Clinical (OT)	Written , viva voce

EN4.25 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Nasal Polyps
Domain–K/S **Level -SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.25.1	Elicit correct history in patients presenting with Nasal polyps	Bedside clinic	Skill Assessment
EN4.25.2	Document and present correct history in patients with Nasal polyps	Bedside clinic	Skill assessment
EN4.25.3	Describe the clinical features in a patient presenting with Nasal polyps	Bedside clinic	Skill assessment
EN4.25.4	Choose the correct investigations in a patient presenting with Nasal polyps	Bedside clinic	Viva voce
EN4.25.5	Describe the principles of management of Nasalpolyps	Lecture ,Bedside clinic	Written, Viva voce

EN4.26 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Adenoids
Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.26.1	Elicit correct history in patients presenting with Nasal polyps	Bedside clinic	Skill assessment
EN4.26.2	Document and present correct history in patients with Nasal polyps	Bedside clinic	Skill assessment
EN4.26.3	Describe the clinical features in a patient presenting with Nasal polyps	Bedside clinic	Skill assessment

EN4.26.4	Choose the correct investigations in a patient presenting with Nasal polyps	Lecture, DOAP	Viva voce
EN4.26.5	Describe the principles of management of	Lecture ,Bedside	Written, Viva

	Nasalpolyps	Clinic	Voce

EN4.27 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Allergic Rhinitis

Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.27.1	Elicit correct history in patients presenting with Allergic Rhinitis	Bedside clinic	Skill assessment
EN4.27.2	Document and present correct history in patients with Allergic Rhinitis	Bedside clinic	Skill assessment
EN4.27.3	Describe the clinical features in a patient presenting with Allergic Rhinitis	Bedside clinic	Skill assessment
EN4.27.4	Choose the correct investigations in a patient presenting with Allergic Rhinitis	Lecture, DOAP	Viva voce
EN4.27.5	Describe the principles of management of Allergic Rhinitis	Lecture ,Bedside clinic	Written, Viva voce

EN4.28 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Vasomotor Rhinitis

Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.28.1	Elicit correct history in patients presenting with Vasomotor Rhinitis	Bedside clinic	Skill assessment
EN4.28.2	Document and present correct history in patients with Vasomotor Rhinitis	Bedside clinic	Skill assessment
EN4.28.3	Describe the clinical features in a patient presenting with Vasomotor Rhinitis	Bedside clinic	Skill assessment
EN4.28.4	Choose the correct investigations in a patient presenting with Vasomotor Rhinitis	Lecture, DOAP	Viva voce

the correct investigations and describe the principles of management of Acute & Chronic Rhinitis

Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.29.1	Elicit correct history in patients presenting with Acute Rhinitis	Bedside clinic	Skill assessment
EN4.29.2	Document and present correct history in patients with Acute Rhinitis	Bedside clinic	Skill assessment
EN4.29.3	Describe the clinical features in a patient presenting with Acute Rhinitis	Bedside clinic	Skill Assessment
EN4.29.4	Choose the correct investigations in a patient presenting with Acute Rhinitis	Lecture, DOAP	Viva voce
EN4.29.5	Describe the principles of management of Acute Rhinitis	Lecture ,Bedside clinic	Written, Viva voce
EN4.29.6	Elicit correct history in patients presenting with Chronic Rhinitis	Bedside clinic	Skill assessment
EN4.29.7	Document and present correct history in patients with Chronic Rhinitis	Bedside clinic	Skill assessment
EN4.29.8	Describe the clinical features in a patient presenting with Chronic Rhinitis	Bedside clinic	Skill assessment
EN4.29.9	Choose the correct investigations in a patient presenting with Chronic Rhinitis	Lecture, DOAP	Viva voce
EN4.29.10	Describe the principles ofmanagement of Lec	ture	Written,Vi Va

		,Bedside	

	Chronic Rhinitis	Clinic	Voce

EN4.30 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Epistaxis

Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.30.1	Enumerate the causes of Epistaxis	Lecture	Written, Viva voce
EN4.30.2	Elicit correct history in patients presenting with Epistaxis	Bedside clinic	Skill assessment
EN4.30.3	Document and present correct history in patients with Epistaxis	Bedside clinic	Skill assessment
EN4.30.4	Describe the clinical features in a patient presenting with Epistaxis	Bedside clinic	Skill assessment
EN4.30.5	Choose the correct investigations in a patient presenting with Epistaxis	Lecture, DOAP	Viva voce
EN4.30.6	Describe the principles of management of Epistaxis	Lecture ,Bedside Clinic	Written, Viva Voce

EN4.31Describe the clinical features, investigations and principles of management of trauma to the face & neck

Domain–K/S **Level - KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.31.1	Describe the clinical features in a patient presenting with trauma to face	Lecture	Written, Viva voce
EN4.31.2	Choose the correct investigations in a patient presenting with trauma to face	Lecture, DOAP	Viva voce
EN4.31.3	Describe the principles of management of trauma to face	Lecture ,Bedside clinic	Written, Viva voce
EN4.31.4	Describe the clinical features in a patient presenting with trauma to neck	Lecture	Written, Viva voce
EN4.31.5	Choose the correct investigations in a patient presenting with trauma to neck	Lecture, DOAP	Viva voce
EN4.31.6	Describe the principles of management of trauma to neck	Lecture ,Bedside clinic	Written, Viva voce

EN4.32 Describe the clinical features, investigations and principles of management of nasopharyngeal Angiofibroma

Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.32.1	Describe the clinical features in a patient presenting with nasopharyngeal Angiofibroma	Lecture	Written, Viva voce
EN4.32.2	Choose the correct investigations in a patient presenting with nasopharyngeal Angiofibroma	Lecture, DOAP	Viva voce
EN4.32.3	Describe the principles of management of nasopharyngeal Angiofibroma	Lecture ,Bedside clinic	Written, Viva voce

EN4.33 Elicit document and present a correct history demonstrate and describe the clinical

features, choose the correct investigations and describe the principles of management of Acute & ChronicSinusitis

Domain–K/S **Level - SH**

EN4.34 Describe the clinical features, investigations and principles of management of Tumors of

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.35.1	Describe the clinical features in a patient presenting with Tumors of Nasopharynx	Lecture	Written, Viva voce
EN4.35.2	Choose the correct investigations in a patient presenting with Tumors of Nasopharynx	Lecture, DOAP	Viva voce
EN4.35.3	Describe the principles of management of TumorsofNasopharynx	Lecture ,Bedside clinic	Written, Viva voce

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Domain–K **Level -KH**

EN4.35 Describe the clinical features, investigations and principles of management of Tumors of Nasopharynx

Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.33.1	Elicit correct history in patients presenting with Acute Sinusitis	Bedside clinic	Skill assessment
EN4.33.2	Document and present correct history in patients with Acute Sinusitis	Bedside clinic	Skill Assessment
EN4.33.3	Describe the clinical features in a patient presenting with Acute Sinusitis	Bedside clinic	Skill assessment
EN4.33.4	Choose the correct investigations in a patient presenting with Acute Sinusitis	Lecture, DOAP	Viva voce
EN4.33.5	Describe the principles of management of Acute Sinusitis	Lecture ,Bedside clinic	Written, Viva voce
EN4.33.6	Elicit correct history in patients presenting with Chronic Sinusitis	Bedside clinic	Skill assessment
EN4.33.7	Document and present correct history in patients with Chronic Sinusitis	Bedside clinic	Skill assessment
EN4.33.8	Describe the clinical features in a patient presenting with Chronic Sinusitis	Bedside clinic	Skill assessment
EN4.33.9	Choose the correct investigations in a patient presenting with Chronic Sinusitis	Lecture, DOAP	Viva voce
EN4.33.10	Describe the principles of management of Chronic Sinusitis	Lecture ,Bedside clinic	Written, Viva voce

4.36 Describe the clinical features, investigations and principles of management of diseases of the Salivary glands

Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.36.1	Describe the clinical features in a patient presenting with Diseases of salivary glands	Lecture	Written, Viva voce
EN4.36.2	Choose the correct investigations in a patient presenting with Diseases of salivary glands	Lecture, DOAP	Viva voce
EN4.36.3	Describe the principles of management of Diseases of salivary glands	Lecture ,Bedside clinic	Written, Viva voce

EN4.37 Describe the clinical features, investigations and principles of management of Ludwig's angina

Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.37.1	Describe the clinical features in a patient presenting with Ludwig's angina	Lecture	Written, Viva voce
EN4.37.2	Choose the correct investigations for a patient presenting with Ludwig's angina	Lecture, DOAP	Viva voce
EN4.37.3	Describe the principles of management of Ludwig's angina	Lecture ,Bedside clinic	Written, Viva voce

EN4.38 Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of dysphagia

Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.38.1	Enumerate the causes of Dysphagia	Lecture	Written, Viva voce
EN4.38.2	Elicit correct history in patients presenting with Dysphagia	Bedside clinic	Skill Assessment
EN4.38.3	Document and present correct history in patients with Dysphagia	Bedside clinic	Skill assessment
EN4.38.4	Describe the clinical features in a patient presenting with Dysphagia	Bedside clinic	Skill assessment
EN4.38.5	Choose the correct investigations for a patient presenting with Dysphagia	Lecture, DOAP	Viva voce
EN4.38.6	Describe the principles of management of Dysphagia	Lecture ,Bedside clinic	Written, Viva voce

EN4.39 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Tonsillitis

Domain–K/S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.39.1	Elicit correct history in patients presenting with AcuteTonsillitis	Bedside clinic	Skill assessment
EN4.39.2	Document and present correct history in patients with Acute Tonsillitis	Bedside clinic	Skill assessment
EN4.39.3	Describe the clinical features in a patient	Bedside clinic	Skill

	presenting with Acute Tonsillitis		Assessment
EN4.39.4	Choose the correct investigations in a patient presenting with Acute Tonsillitis	Lecture, DOAP	Viva voce
EN4.39.5	Describe the principles of management of Acute Tonsillitis	Lecture ,Bedside clinic	Written, Viva voce
EN4.39.6	Elicit correct history in patients presenting with Chronic Tonsillitis	Bedside clinic	Skill assessment
EN4.39.7	Document and present correct history in patients with Chronic Tonsillitis	Bedside clinic	Skill assessment
EN4.39.8	Describe the clinical features in a patient presenting with Chronic Tonsillitis	Bedside clinic	Skill assessment
EN4.39.9	Choose the correct investigations in a patient presenting with Chronic Tonsillitis	Lecture, DOAP	Viva voce
EN4.39.10	Describe the principles of management of Chronic Tonsillitis	Lecture ,Bedside clinic	Written, Viva voce

EN4.40 Observe and describe the indications for and steps involved in a tonsillectomy / adenoidectomy

Domain–S **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.40.1	Enumerate the indications for tonsillectomy	Lecture, Bedside clinic	Written, Viva voce
EN4.40.2	Observe the steps involved in a tonsillectomy	Video demonstration, DOAP (OT)	Viva voce
EN4.40.3	Describe the steps involved in a tonsillectomy	DOAP (OT), Bedside clinic	Viva voce
EN4.40.4	Enumerate the indications for adenoidectomy	Lecture, Bedside clinic	Written, Viva voce
EN4.40.5	Observe the steps involved in an adenoidectomy	Video demonstration, DOAP (OT)	Viva voce
EN4.40.6	Describe the steps involved in an adenoidectomy	DOAP (OT), Bedside clinic	Viva voce

EN4.41 Describe the clinical features, investigations and principles of management of Acute & chronic abscesses in relation to Pharynx

Domain–K/S **Level - KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.41.1	List the abscesses in relation to pharynx	Lecture, Bedside clinic	Written, Viva voce
EN4.41.2	Describe the clinical features of acute abscesses in relation to pharynx	Bedside clinic	Viva voce
EN4.41.3	Choose the correct investigations in a patient presenting with an acute abscess related to the pharynx	DOAP, Bedside clinic	Viva voce
EN4.41.4	Describe the principles of management of a patient presenting with an acute abscess related to the pharynx	Lecture, DOAP	Viva voce
EN4.41.5	Describe the clinical features of chronic abscesses in relation to pharynx	Bedside clinic	Viva voce
EN4.41.6	Choose the correct investigations in a patient presenting with chronic abscess related to the pharynx	DOAP, Bedside clinic	Viva voce
EN4.41.7	Describe the principles of management of a patient presenting with chronic abscess related to the pharynx	Lecture, DOAP	Viva voce

EN4.42 Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of hoarseness of voice

Domain–K/S **Level – SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.42.1	Enumerate the causes of hoarseness of voice	Lecture	Written, Viva voce
EN4.42.2	Elicit correct history in patients presenting with hoarseness of voice	Bedside clinic	Skill Assessment
EN4.42.3	Document and present correct history in patients with hoarseness of voice	Bedside clinic	Skill assessment
EN4.42.4	Describe the clinical features in a patient presenting with hoarseness of voice	Bedside clinic	Skill assessment
EN4.42.5	Choose the correct investigations for a patient presenting with hoarseness of voice	Lecture, DOAP	Viva voce
EN4.42.6	Describe the principles of management of a patient with hoarseness of voice	Lecture ,Bedside clinic	Written, Viva voce

EN4.43 Describe the clinical features, investigations and principles of management of Acute & Chronic Laryngitis

Domain–K **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.43.1	Describe the clinical features in a patient presenting with Acute Laryngitis	Lecture ,Bedside clinic	Written, Viva voce
EN4.43.2	Choose the correct investigations in a patient presenting with Acute Laryngitis	Lecture, DOAP	Viva voce
EN4.43.3	Describe the principles of management of Acute Laryngitis	Lecture ,Bedside clinic	Written, Viva voce
EN4.43.4	Describe the clinical features in a patient presenting with Chronic Laryngitis	Lecture ,Bedside clinic	Written, Viva voce
EN4.43.5	Choose the correct investigations in a patient presenting with Chronic Laryngitis	Lecture, DOAP	Viva voce
EN4.43.6	Describe the principles of management of Chronic Laryngitis	Lecture ,Bedside clinic	Written, Viva voce

EN4.44 Describe the clinical features, investigations and principles of management of benign lesions of the vocal cord

Domain–K **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.44.1	Enumerate the benign lesions of the vocal cord	Lecture ,Bedside Clinic	Written, Viva Voce
EN4.44.2	Describe the clinical features in a patient presenting with benign lesions of the vocal cord	Lecture ,Bedside clinic	Written, Viva voce
EN4.44.3	Choose the correct investigations for a patient presenting with benign lesions of the vocal cord	Lecture, DOAP	Viva voce
EN4.44.4	Describe the principles of management of benign lesions of the vocal cord	Lecture ,Bedside clinic	Written, Viva voce

EN4.45 Describe the clinical features, investigations and principles of management of Vocal cord palsy
Domain–K **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.45.1	Enumerate the causes of Vocal cord palsy	Lecture ,Bedside clinic	Written, Viva voce
EN4.45.2	Describe the clinical features in a patient presenting with Vocal cord palsy	Lecture ,Bedside clinic	Written, Viva voce
EN4.45.3	Choose the correct investigations for a patient presenting with Vocal cord palsy	Lecture, DOAP	Viva voce
EN4.45.4	Describe the principles of management of Vocal cord palsy	Lecture ,Bedside clinic	Written, Viva voce

EN4.46 Describe the clinical features, investigations and principles of management of Malignancy of the Larynx &Hypopharynx
Domain–K **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.46.1	Describe the clinical features in a patient presenting with Malignancy of the Larynx	Lecture ,Bedside clinic	Written, Viva voce
EN4.46.2	Choose the correct investigations for a patient presenting with Malignancy of the Larynx	Lecture, DOAP	Viva voce
EN4.46.3	Describe the principles of management of Malignancy of the Larynx	Lecture ,Bedside clinic	Written, Viva voce
EN4.46.4	Describe the clinical features in a patient presenting with Malignancy of the Hypopharynx	Lecture ,Bedside clinic	Written, Viva voce
EN4.46.4	Choose the correct investigations for a patient presenting with Malignancy of the Hypopharynx	Lecture, DOAP	Viva voce
EN4.46.4	Describe the principles of management of Malignancy of the Hypopharynx	Lecture ,Bedside clinic	Written, Viva voce

EN4.47 Describe the clinical features, investigations and principles of management of Stridor
Domain–K **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.47.1	Enumerate the causes of Stridor	Lecture ,Bedside Clinic	Written, Viva Voce
EN4.47.2	Describe the clinical features in a patient presenting with Stridor	Lecture ,Bedside clinic	Written, Viva voce
EN4.47.3	Choose the correct investigations for a patient presenting with Stridor	Lecture, DOAP	Viva voce
EN4.47.4	Describe the principles of management of Stridor	Lecture ,Bedside clinic	Written, Viva voce

EN4.48 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Airway Emergencies

Domain–S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.48.1	Enumerate the causes of Airway emergencies	Bedside clinic, DOAP	Viva voce
EN4.48.2	Elicit correct history in patients presenting with Airway emergencies	Bedside clinic	Skill Assessment
EN4.48.3	Document and present correct history in patients with Airway emergencies	Bedside clinic	Skill assessment
EN4.48.4	Describe the clinical features in a patient presenting with Airway emergencies	Bedside clinic	Skill assessment
EN4.48.5	Choose the correct investigations for a patient presenting with Airway emergencies	DOAP	Viva voce
EN4.48.6	Describe the principles of management of Airway emergencies	Bedside clinic	Viva voce

EN4.49 Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of foreign bodies in the air & food passages

Domain–S **Level - SH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.49.1	Elicit correct history in patients presenting with foreign bodies in the air passages	Bedside clinic	Skill assessment
EN4.49.2	Document and present correct history in patients presenting with foreign bodies in the air passages	Bedside clinic	Skill assessment
EN4.49.3	Describe the clinical features in a patient presenting with foreign bodies in the air passages	Bedside clinic	Skill assessment
EN4.49.4	Choose the correct investigations in a patient presenting with foreign bodies in the air passages	DOAP	Viva voce
EN4.49.5	Describe the principles of management of foreign bodies in the air passages	Bedside clinic	Viva voce
EN4.49.6	Elicit correct history in patients presenting with foreign bodies in the food passages	Bedside clinic	Skill assessment
EN4.49.7	Document and present correct history in patients presenting with foreign bodies in the food passages	Bedside clinic	Skill assessment
EN4.49.8	Describe the clinical features in a patient presenting with foreign bodies in the food passages	Bedside clinic	Skill assessment
EN4.49.9	Choose the correct investigations in a patient presenting with foreign bodies in the food passages	DOAP	Viva voce
EN4.49.10	Describe the principles of management of foreign bodies in the food passages	Bedside clinic	Viva voce

EN4.50 Observe and describe the indications for and steps involved in tracheostomy
Domain–S **Level -KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.50.1	Enumerate the indications for Tracheostomy	Bedside clinics	Viva voce
EN4.50.3	Observe steps involved in Tracheostomy	DOAP - Clinical (OT), video demonstration	Viva voce
EN4.50.3	Describe the steps of Tracheostomy	DOAP - video demonstration	Viva voce

EN4.51 Observe and describe the care of the patient with a tracheostomy
Domain–S **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.51.1	Observe steps involved in care of the patient with a tracheostomy	DOAP - Clinical (OT), video demonstration	Viva voce
EN4.51.2	Describe the steps involved in care of the patient with a tracheostomy	DOAP - video demonstration	Viva voce

EN4.52 Describe the Clinical features, Investigations and principles of management of diseases of Oesophagus
Domain–K **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.52.1	Enumerate the Diseases of Oesophagus	Lecture ,Bedside clinic	Written, Viva voce
EN4.52.2	Describe the clinical features in a patient presenting with Disease of Oesophagus	Lecture ,Bedside clinic	Written, Viva voce
EN4.52.3	Choose the correct investigations for a patient presenting with Disease of Oesophagus	Lecture, DOAP	Viva voce
EN4.52.4	Describe the principles of management of Diseases of Oesophagus	Lecture ,Bedside clinic	Written, Viva voce

EN4.53 Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT (vertical integration- General Medicine)
Domain–K **Level –KH**

Number	Specific Learning objective	Teaching-Learning methods	Assessment methods
EN4.53.1	Enumerate the HIV manifestations of the ENTL	cture ,Bedside clinic	Written, Viva voce
EN4.53.2	Describe the clinical features in a patient presenting with HIV manifestations of the ENT	Lecture ,Bedside clinic	Written, Viva voce
EN4.53.3	Choose the correct investigations for a patient presenting with HIV manifestations of the ENT	Lecture, DOAP	Viva voce
EN4.53.4	Describe the principles of management of HIV manifestations of the ENT	Lecture ,Bedside clinic	Written, Viva voce

Summary of course content, teaching and learning methods and student assessment for the undergraduate (MBBS) Curriculum in Otorhinolaryngology

Teaching-Learning methods and Time allotted -Otorhinolaryngology

Lectures	Small group discussion	Self-directelearning	Total hours	Clinical postings
25 hours	40 hours	5 hours	70 hours	Two postings of 4 weeks each. First posting in II MBBS(15hours /week) and Second posting II MBBS Part I(18hours/week)

Teaching-learning methods shall be learner-centric and shall predominantly include small group learning, interactive teaching methods, and case-based learning. Didactic lectures are not to exceed one-third of the total teaching time. The teaching-learning activity focus should be on the application of knowledge rather than the acquisition of knowledge.

The curricular contents shall be vertically and horizontally **aligned and integrated** to the maximum extent possible to enhance learners' interest and eliminate redundancy and overlap. Acquisition and certification of skills shall be through experiences inpatient care, diagnostic and skill laboratories.

The **clinical postings** in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday)

The clinical postings in the third professional part II shall be 18 hours per week (3 hrs per day from Monday to Saturday)

Newer T-L methods like the Learner-doctor method (Clinical clerkship) should be mandatorily implemented, from 1st clinical postings in Otorhinolaryngology 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 participating in hands-on care of patients in outpatient and inpatient settings. During the 1st clinical postings, the students are oriented to the working of the department. During the second clinical posting, 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, and observing surgeries if any till the patient isdischarged.

AETCOM module. The purpose is to help the students apply principles of bioethics, systems-based care, apply empathy and other human values in patient care, communicate effectively with patients and relatives and become a professional who exhibits all these values.

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 Otorhinolaryngology.

75% attendance in AETCOM Module is required for eligibility to appear for the final examination in the 3rdprofessional year 3 part 1.

Internal Assessment

Formative and summative assessments should be carried out periodically. Logbook of skill-based training shall be also maintained.

There shall be no less than three internal assessment examinations (Theory and Clinical) in Otorhinolaryngology. Learners must secure at least 50% marks of the total marks (combined in theory and clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in Otorhinolaryngology in order to be eligible for appearing at the final Universityexamination.

Learners must have completed the required certifiable competencies for that phase of training and the Otorhinolaryngology logbook entry completed being eligible for appearing at the final university examination.

University examinations

Third Professional Part I shall be held at end of third Professional part 1 of training (12 months) in the subjects of Ophthalmology, Otorhinolaryngology, Community Medicine and Forensic Medicine, andToxicology

Marks allotted

Otorhinolaryngology	Theory	Clinical examination
Total marks	100	100
	Long essay 2X10= 20	Two cases x40marks=80mar
	Short essay 8x5=40 marks	Viva-voce 2x10=20marks
	Short answer question 10x3=30marks	
	MCQs 10x1=10marks	

The theory paper should include different types such as structured essays, short essays, Short Answers Questions (SAQ) and MCQs (Multiple Choice Questions). Marks for each part should be indicated separately.

A minimum of **80%** of the marks should be from the **must know** 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.
One main essay question to be of the **modified variety** containing a clinical case scenario. At least 30% of questions should be clinical case scenario based. Questions to be constructed to test higher cognitive levels.
Clinical examinations will be conducted in the hospital wards. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Emphasis should be on the candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case, and develop a management plan.

Viva/oral examination should assess the approach to patient management, emergencies, and attitudinal, ethical, and professional values. The candidate's skill in the interpretation of common investigative data, X-rays, identification of specimens, etc. is to be also assessed.

Pass criteria

Internal Assessment: 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations

University Examination: Mandatory 50% marks separately in theory and clinical (clinical = clinical +viva)

Sample Otorhinolaryngology Question Paper

Otorhinolaryngology Paper

Time: 3 hours
Marks: 100

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Long essays (2 X 10 = 20 marks)

1. A 14-year-old adolescent boy presents with left nasal obstructions and recurrent episodes of spontaneous, profuse, and self-limiting epistaxis. On examination, pinkish mass was found in the left nasal cavity along with the fullness of the leftcheek
    a) What is the most likelydiagnosis?
    b) Describe the etiopathogenesis of thiscondition?
    c) Discuss the laboratory investigations for diagnosing the above condition.
    d) Write a note on various modalities oftreatment.

    (1+3+2+4)
2. A 35-year-old woman complained of bilateral hearing loss for 5 years, which had worsened during her pregnancy 1 year back. She does not give any past history of ear discharge.
    a) What is the most likely disease she is sufferingfrom?
    b) Discuss the etiopathogenesis & types of thisdisease?
    c) Describe the investigations for confirming thediagnosis?
    d) Discuss the treatment modalities along with their contraindications?

    (1+3+3+3)

Short essays (8x5=40marks)

3. A 38-year-old female complains of fever, sore throat, and pain during swallowing Since3 days. On examination, the left tonsil is congested and enlarged, and bulge in the soft palate on the left side, and the uvula is pushed to theright.
    a) What is the diagnosis of thiscondition?
    b) What are the symptoms and signs of thiscondition?
    c) How do you managethispatient? (1+2+2)
4. Write a note on Graft materials fortympanoplasty.
5. Discuss Vocal rehabilitation following totallaryngectomy.
6. Describe the Clinical features & management of acuteEpiglottitis.
7. Discuss the Causes & management of nasal septalperforation.
8. Write a note on Corticosteroids inENT.
9. Discuss the Clinical features & management of Post Covid-19 mucormycosis-.

10. A 27 year old male patient who met with a road traffic accident was seen in the emergency room with complaint of clear watery nasaldischarge.

a) What are the bed side clinical tests to diagnose thiscondition?

b) What are the investigations that need to be done for thispatient?

c) What is the treatment for thiscondition?

(1+2+2)

Short answer questions (10x3=30)

11. Write a note on Sieglesspeculum.

12. Enumerate three causes for Bell'spalsy.

13. Write three Topodiagnostic tests for facial nervepalsy.

14. Constrictions ofOesophagus.

15. Write a note on Objective tests ofhearing.

16. Blood supply ofAdenoids.

17. Three causes for ReferredOtalgia

18. Removal of Ear foreignbody.

19. Stylalgia.

20. Informed consent for tracheostomy.

MCQ's (10 x 1=10)

21.(i) Cart wheel appearance of tympanic membrane is seenin

a) ASOM

b) Glomus tumor

c) OME

d) CSOM

(ii) Cricothyroid muscle is supplied by:

a) External laryngealnerve

b) Recurrent laryngealnerve

c) Internal laryngealnerve

d) Glossopharyngealnerve

(iii) Which of the following is known as gateway oftears

a) Killian'sdehiscence

b) Rathke'spouch

c) Waldeyerring

d) Sinus ofMorgagni

(iv) Bony septal perforation is seen in:

a) TB

b) Syphilis

c) Leprosy

d) None of theabove

(viii) Steeple sign is seen in:

a) Quinsy

b) Larngomalacia

c) Acute epiglottitis

d) Croup

(ix) Grommet insertion with myringotomy is doneat

a) Antero-inferiorquadrant

b) Postero- inferior quadrant

c) Antero superiorquadrant

d) Postero superiorquadrant

(x) Caldwell view is done for:

a) Sphenoidsinus

b) Ethmoidsinus

c) Maxillary sinus

d) Frontal sinus

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of ear- external ear

GENERAL OBJECTIVE – understand the anatomy of external ear

SLO: To describe the anatomy of pinna, External auditory canal and TM

Set induction: development of ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of pinna and EAC	Lecture	PPT	written test/VIVA	10
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	20
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of ear- middle ear

GENERAL OBJECTIVE – understand the anatomy of middle ear

SLO: To describe the anatomy of middle ear, Eustachian tube, structures in middle ear and boundaries of middle ear

Set induction: development of middle ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of middle ear	Lecture	PPT	written test/VIVA	10
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	20
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of ear- Inner ear

GENERAL OBJECTIVE – understand the anatomy of - Inner ear

SLO: To describe the anatomy of vestibule and cochlea.

Set induction: development of inner ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of vestibule and cochlea	Lecture	PPT	written test/VIVA	10
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	20
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Physiology of hearing

GENERAL OBJECTIVE – understand the physiology of hearing

SLO: To describe the physiology of hearing and auditory pathway.

Set induction: outline the anatomy of inner ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Physiology of hearing	Lecture	PPT	written test/VIVA	20
Auditory pathway	Lecture	PPT	written test/VIVA	10
Applied physiology	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Physiology of balance

GENERAL OBJECTIVE – understand the physiology of balance

SLO: To describe the physiology of vestibular system and its central connections.

Set induction: outline the anatomy of inner ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Physiology of balance	Lecture	PPT	written test/VIVA	20
Functions of vestibular system	Lecture	PPT	written test/VIVA	10
Applied physiology	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of Nose and PNS

GENERAL OBJECTIVE – understand the anatomy of Nose

SLO: To describe the anatomy of Nose and PNS and its applied aspects.

Set induction: development of nose Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of Nose and PNS	Lecture	PPT	written test/VIVA	10
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	20
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Physiology of Nose

GENERAL OBJECTIVE – understand the physiology ofNose

SLO: To describe the physiology of Nose and olfaction.

Set induction: outline the anatomy of nose Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Physiology of Nose	Lecture	PPT	written test/VIVA	20
Functions of Nose	Demonstration	Bed side clinics	Skill assessment	10
Olfactory pathway	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of oral cavity

GENERAL OBJECTIVE – understand the anatomy of oral cavity

SLO: To describe the anatomy of oral cavity and its applied aspects.

Set induction: development of pharyngeal arches Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of oral cavity	Lecture	PPT	written test/VIVA	20
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	10
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of pharynx

GENERAL OBJECTIVE – understand the anatomy of pharynx

SLO: To describe the anatomy of pharynx and its applied aspects.

Set induction: development of pharyngeal arches Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of oral cavity	Lecture	PPT	written test/VIVA	20
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	10
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of waldeyer's ring and tonsil

GENERAL OBJECTIVE – understand the anatomy of waldeyer's ring and tonsil

SLO: To describe the anatomy and components of waldeyer's lymphatic ring.

Set induction: anatomy of pharynx Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Components of waldeyers ring	Lecture	PPT	written test/VIVA	10
Anatomy of tonsil	Lecture	PPT	written test/VIVA	20
functions	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of larynx

GENERAL OBJECTIVE – understand the anatomy of larynx

SLO: To describe the anatomy of larynx and applied aspects.

Set induction: development of pharyngeal arches Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of larynx	Lecture	PPT	written test/VIVA	20
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	10
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Physiology of phonation

GENERAL OBJECTIVE – understand the physiology of phonation

SLO: To describe the physiology of phonation.

Set induction: outline the anatomy of larynx Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Physiology of phonation	Lecture	PPT	written test/VIVA	30
Functions of larynx	Demonstration	Bed side clinics	Skill assessment	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Anatomy of Neck

GENERAL OBJECTIVE – understand the anatomy of Neck

SLO: To describe the anatomy of Neck and its applied aspects.

Set induction: ask a question on triangles of neck Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Anatomy of Neck	Lecture	PPT	written test/VIVA	25
Blood supply and nerve supply	Lecture	PPT	written test/VIVA	5
Applied anatomy	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Physiology of deglutition

GENERAL OBJECTIVE – understand the physiology ofdeglutition

SLO: To describe the physiology of deglutition

Set induction: outline the anatomy of pharynx Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Physiology of deglution	Lecture	PPT	written test/VIVA	30
Swallowing reflex	Demonstration	Bed side clinics	Skill assessment	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Evaluation of hearing

GENERAL OBJECTIVE – understand the methods of hearing evaluation.

SLO: To demonstrate the correct technique to perform and interpret pure tone audiogram & impedance audiogram.

Set induction: ask a question on auditory pathway Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Methods of hearing evaluation	Lecture	PPT	written test/VIVA	10
Pure tone and impedance Audiometry	DOAP session	Bedside clinic	Skill assessment/VIVA	20
Interpretation	DOAP session	Bedside clinic	VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Diseases of External ear

GENERAL OBJECTIVE – describe theclinicalfeatures &management of diseases of the external Ear.

SLO: Elicit documentandpresentacorrecthistory,

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations.

Describethe principles of management of diseases of the external Ear.

Set induction: anatomy of external ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Aetiopathogenesis	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations and treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: ASOM

GENERAL OBJECTIVE – describe theclinicalfeatures &management of ASOM.

SLO: Elicitdocumentandpresentacorrecthistory,

Demonstrateand describe the clinicalfeatures,choosethecorrectinvestigations.

Describethe principles of management of ASOM.

Set induction: anatomy of middle ear. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Aetiopathogenesis	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations and treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: CSOM- mucosal

GENERAL OBJECTIVE – describe theclinicalfeatures &management of mucosal type of CSOM

SLO: Elicitdocumentandpresentacorrecthistory,

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations

Describethe principles of management of CSOM

Set induction: anatomy of middle ear. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Aetiopathogenesis	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations and treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: CSOM - squamosal

GENERAL OBJECTIVE – describe theclinicalfeatures &management of squamosal type of CSOM

SLO: Elicitdocumentandpresentacorrecthistory,

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations

Describethe principles of management ofsquamosal type of CSOM

Set induction: anatomy of middle ear. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Aetiopathogenesis	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations and treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: CSOM - Complications

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Complications of CSOM.

SLO: Elicitdocumentandpresentacorrecthistory

Demonstrateanddescribe theclinical features,choosethecorrectinvestigations

Describethe principles of management of Complications of CSOM.

Set induction: ask a question on CSOM Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Aetiopathogenesis	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations and treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Hearing loss.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Hearing loss.

SLO: Elicitdocumentandpresentacorrecthistory

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations

Describethe principles of management of Hearing loss.

Set induction: anatomy of inner ear. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology and clinical features	Lecture	PPT	written test/VIVA	15
Investigations	Lecture	PPT	written test/VIVA	15
Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Otosclerosis

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Otosclerosis

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Otosclerosis.

Set induction: anatomy of middle ear. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Aetiopathogenesis	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations& Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Facial Nerve disorders

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Facial Nerve disorders

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Facial Nerve disorders.

Set induction: Anatomy of facial nerve. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Demonstration	bedside clinics	VIVA	15
Investigations& Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Vertigo

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Vertigo

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Vertigo

Set induction: anatomy of vestibule and semicircular canals.

Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology & clinical features	Lecture	PPT	written test/VIVA	15
Diagnosis	Demonstration	bedside clinics	VIVA	15
Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Meniere's disease

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Meniere's disease

SLO:Describetheclinicalfeatures,investigationsandprinciples of management of Meniere's disease

Set induction: anatomy of vestibule. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations& Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Glomus tumor

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Glomus tumor

SLO:Describetheclinicalfeatures,investigationsandprinciples of management of Glomus tumor

Set induction: anatomy of middle ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations& Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, Bhargava

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Acoustic neuroma

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Acoustic neuroma.

SLO:Describetheclinicalfeatures,investigationsandprinciples of management of Acoustic neuroma.

Set induction: anatomy of Inner ear Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations& Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Tinnitus

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Tinnitus

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Tinnitus

Set induction: anatomy of inner ear. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations& Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: otalgia.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of otalgia.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of otalgia.

Set induction: anatomy of nerve supply of ear. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
Investigations& Treatment.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN –skill

TOPIC: Myringotomy

GENERAL OBJECTIVE – describe the indications and procedure of Myringotomy

SLO:Observe and describe the indications for and steps involved in Myringotomy

Set induction: ask a question on OME. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN –skill

TOPIC: Myringoplasty

GENERAL OBJECTIVE – describe the indications and procedure of Myringoplasty

SLO:Observe and describe the indications for and steps involved in Myringoplasty

Set induction: ask a question on CSOM Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN –skill

TOPIC: Mastoidectomy

GENERAL OBJECTIVE – describe the indications and procedure of Mastoidectomy

SLO:Observe and describe the indications for and steps involved in Mastoidectomy

Set induction: ask a question on CSOM Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Congenital disorders of nose

GENERAL OBJECTIVE – describe theclinicalfeatures &management of congenital disorders of nose

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Congenital disorders of nose.

Set induction: development of nose. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Diseases of external nose and vestibule.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Diseases of external nose and vestibule.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Diseases of external nose and vestibule.

Set induction: Anatomy of nose. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	10
clinical features	Lecture	PPT	VIVA	15
management	Lecture	PPT	written test/VIVA	15

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Diseases of tumors of nose and PNS.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Diseases of tumors of nose and PNS.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Diseases of tumors of nose and PNS.

Set induction: Anatomy of nose and PNS. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	10
clinical features	Lecture	PPT	VIVA	15
management	Lecture	PPT	written test/VIVA	15

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Epistaxis

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Epistaxis

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Epistaxis.

Set induction: Blood supply of nose. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Diseases of nasal septum

GENERAL OBJECTIVE – describe theclinicalfeatures &management of diseases of nasal septum

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of diseases of nasal septum

Set induction: Anatomy of nasal septum. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

LESSON PLAN

DOMAIN –skill

TOPIC: Septoplasty

GENERAL OBJECTIVE – describe the indications and procedure of Septoplasty

SLO:Observe and describe the indications for and steps involved in Septoplasty

Set induction: ask a question on DNS Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

TEXT BOOK OF ENT, MOHAN BANSAL

TEXT BOOK OF ENT, BHARGAVA

LESSON PLAN

DOMAIN –skill

TOPIC: SMR

GENERAL OBJECTIVE – describe the indications and procedure of SMR

SLO:Observe and describe the indications for and steps involved in SMR

Set induction: ask a question on DNS Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: ACUTE AND CHRONIC RHINITIS

GENERAL OBJECTIVE – describe theclinicalfeatures &management of ACUTE AND CHRONIC RHINITIS

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of ACUTE AND CHRONIC RHINITIS

Set induction: Anatomy and physiology of nasal cavity. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Allergic Rhinitis

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Allergic Rhinitis

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Allergic Rhinitis.

Set induction: Anatomy and physiology of nasal cavity. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Granulomatous diseases of nose.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Granulomatous diseases of nose

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Granulomatous diseases of nose.

Set induction: Anatomy of nose and PNS. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Atrophic Rhinitis.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Atrophic Rhinitis

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Atrophic Rhinitis.

Set induction: Anatomy of nose and PNS. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Sinonasal polyposis.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Sinonasal polyposis

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Sinonasal polyposis

Set induction: Anatomy of nose and PNS. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: ACUTE AND CHRONIC SINUSITIS

GENERAL OBJECTIVE – describe theclinicalfeatures &management of ACUTE AND CHRONIC SINUSITIS

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of ACUTE AND CHRONIC SINUSITIS

Set induction: Anatomy and physiology of PNS. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: COMPLICATIONS OF SINUSITIS

GENERAL OBJECTIVE – describe theclinicalfeatures &management of complications of sinusitis

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of complications of sinusitis

Set induction: Ask a question on acute sinusitis. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Nasopharyngeal Angiofibroma

GENERAL OBJECTIVE – describe theclinicalfeatures &management of nasopharyngeal Angiofibroma

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of nasopharyngeal Angiofibroma

Set induction: Ask a question on anatomy of nasopharynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Tumors of Maxilla

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Tumors of Maxilla

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Tumors of Maxilla

Set induction: Anatomy of maxillary sinus. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Tumors of Nasopharynx

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Tumors of Nasopharynx

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Tumors of Nasopharynx

Set induction: Anatomy of Nasopharynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Trauma to the face & neck

GENERAL OBJECTIVE – describe theclinicalfeatures &management of trauma to the face & neck

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of trauma to the face & neck

Set induction: anatomy of neck. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
clinical features	Lecture	PPT	written test/VIVA	15
Investigations	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: diseases of the Salivary glands

GENERAL OBJECTIVE – describe theclinicalfeatures &management of diseases of the Salivary glands

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of diseases of the Salivary glands

Set induction: Anatomy of Salivary glands. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Ludwig's angina

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Ludwig's angina

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Ludwig's angina

Set induction: Anatomy of submandibular space. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Acute&Chronic Tonsillitis

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Acute&Chronic Tonsillitis

SLO:Elicitdocumentandpresentacorrect history

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations.

Describethe principlesofmanagementofAcute&Chronic Tonsillitis

Set induction: Anatomy of tonsil and waldeyer ring. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture/DOAP session	PPT/bedside clinics	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Deep neck space abscesses.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Deep neck space abscesses

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Deep neck space abscesses

Set induction: Anatomy of neck. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN –skill

TOPIC: Adenoidectomy

GENERAL OBJECTIVE – describe the indications and procedure of Adenoidectomy

SLO:Observe and describe the indications for and steps involved in Adenoidectomy

Set induction: ask a question on adenotonsillitis Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN –skill

TOPIC: Tonsillectomy

GENERAL OBJECTIVE – describe the indications and procedure of Tonsillectomy

SLO:Observe and describe the indications for and steps involved in tonsillectomy

Set induction: ask a question on adenotonsillitis Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Acute & Chronic Laryngitis

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Acute & Chronic Laryngitis

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Acute & Chronic Laryngitis

Set induction: Anatomy of larynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Benign lesions of the vocal cord

GENERAL OBJECTIVE – describe theclinicalfeatures &management of benign lesions of the vocal cord.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of benign lesions of the vocal cord.

Set induction: Anatomy of larynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Malignancy of the Oropharynx.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Malignancy of Oropharynx.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Malignancy of the Oropharynx.

Set induction: Anatomy of oropharynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Malignancy of the Larynx.

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Malignancy of the Larynx.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Malignancy of the Larynx

Set induction: Anatomy of larynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Malignancy of the Hypopharynx

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Malignancy of the Hypopharynx

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Malignancy of the Hypopharynx.

Set induction: Anatomy of laryngopharynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Vocal cord palsy

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Vocal cord palsy.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Vocal cord palsy.

Set induction: Anatomy of nerve supply of larynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Stridor

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Stridor.

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of Stridor.

Set induction: Anatomy of larynx. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Airway Emergencies

GENERAL OBJECTIVE – describe theclinicalfeatures &management of Airway Emergencies.

SLO:Elicitdocumentandpresentacorrect history

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations.

Describethe principles of management of Airway Emergencies.

Set induction: Ask a question on stridor. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Foreign bodies in the air & food passages

GENERAL OBJECTIVE – describe theclinicalfeatures &management of foreign bodies in the air & food passages

SLO:Elicitdocumentandpresentacorrect history

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations.

Describethe principles of management of Foreign bodies in the air & food passages.

Set induction: Ask a question on stridor. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN –skill

TOPIC: Tracheostomy

GENERAL OBJECTIVE – describe the indications and procedure of Tracheostomy

SLO:Observe and describe the indications for and steps involved in Tracheostomy

Set induction: ask a question on stridor. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Diseases of Oesophagus

GENERAL OBJECTIVE – describe theclinicalfeatures &management of diseases of Oesophagus

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of diseases of Oesophagus.

Set induction: Anatomy of Oesophagus. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: Dysphagia

GENERAL OBJECTIVE – describe theclinicalfeatures &management of dysphagia

SLO:Elicitdocumentandpresentacorrect history

Demonstrateanddescribe theclinicalfeatures,choosethecorrectinvestigations.

Describethe principles of management of dysphagia

Set induction: Ask a question on diseases of Oesophagus Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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DEPARTMENT OF ENT

LESSON PLAN

DOMAIN – KNOWLEDGE

TOPIC: HIV manifestations of the ENT

GENERAL OBJECTIVE – describe theclinicalfeatures &management of HIV manifestations of the ENT

SLO:Describetheclinicalfeatures,investigationsandprinciplesof management of HIV manifestations of the ENT.

Set induction: ask a question on HIV. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Etiology	Lecture	PPT	written test/VIVA	15
clinical features	Lecture	PPT	written test/VIVA	15
management	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN –skill

TOPIC: Oesophagoscopy

GENERAL OBJECTIVE – describe the indications and procedure of Oesophagoscopy

SLO:Observe and describe the indications for and steps involved in Oesophagoscopy

Set induction: ask a question on dysphagia Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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LESSON PLAN

DOMAIN –skill

TOPIC: Bronchoscopy

GENERAL OBJECTIVE – describe the indications and procedure of Bronchoscopy

SLO:Observe and describe the indications for and steps involved in Bronchoscopy

Set induction: anatomy of tracheobronchial tree. Time: 5mins

CONTENT	T/L METHOD	T/L MEDIA	EVALUATION	TIME
Indications	Lecture	PPT	written test/VIVA	15
Procedure and steps	DOAPsession	demonstration	written test/VIVA	15
Complications.	Lecture	PPT	written test/VIVA	10

SUMMARY: REVISING THE OBJECTIVES

REFERENCES: TEXT BOOK OF ENT, PL DHINGRA

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Department of Forensic Medicine

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Goals and Departmental objectives for the undergraduate MBBS curriculum in Forensic Medicine & Toxicology

GOAL:

- The aim of teaching the under graduate student in Forensic Medicine is to impart such knowledge and skills that may enable him to manage common medico-legal problems in day to day practice. He/ she shall acquire competence for post mortem diagnosis based on history, physical examination and relevant observations during autopsy
- Understanding of medico-legal responsibilities of physicians in primary and secondary care settings,
- Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
- Ability to manage medical and legal issues in cases of poisoning / over dose,
- Understanding the medico-legal frame work of medical practice and medical negligence,
- Understanding of codes of conduct and medical ethics.

COMPETENCIES:

Period of Training – Phase II MBBS & Phase III part 1 MBBS

The learner must demonstrate:

- Understanding of medico-legal responsibilities of physicians in primary and secondary care settings,
- Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
- Ability to manage medical and legal issues in cases of poisoning / over dose,
- Understanding the medico-legal frame work of medical practice and medical negligence,
- Understanding of codes of conduct and medical ethics.

Period of Training – Internship

A. An intern must perform or assist in:

- Identifying and documenting medico-legal problems in a hospital and general practice,
- Identifying the medico-legal responsibilities of a medical man in various hospital situations,
- Diagnosing and managing with competence basic poisoning conditions in the community,
- Diagnosing and managing with competence and documentation in cases of Rape /Sexual assault,
- Preparing medico-legal reports in various medico legal situations.

B. An intern must have observed or preferably assisted at the following operations/ procedures:

- Various medico legal / post-mortem procedures and formalities during their performance by police.

Certifiable Procedural skills desirable of Indian Medical Graduate in Forensic Medicine & Toxicology

A. An Intern must have observed or preferably assisted in:

- Documentation and certification of trauma (I)
- Diagnosis and certification of death (D)
- Legal documentation related to emergency cases (D)
- Certification of medico-legal cases e.g. Age estimation, Sexual Violence etc. (D)

- Establishing communication in medico-legal cases with police, public health authorities, other concerned departments, etc (D)

I- Independently performed on patients,
O- Observed in patients or on simulations,
D- Demonstration on patients or simulations and performance under supervision in patients.

B. An Intern must have observed a medicolegal autopsy / postmortem

Competencies in Internship			
Sl no	**Topic**	**Competencies**	**Procedures requiring certification**
1	Documentation and certification of trauma (I)	**1**	**1**
2	Diagnosis and certification of death (D)	**1**	**1**
3	Legal documentation related to emergency cases (D)	**1**	**1**
4	Certification of medico-legal cases e.g. Age estimation, Sexual Violence etc. (D)	**3**	**3**
5	Establishing communication in medico-legal cases with police, public health authorities, other concerned departments, etc (D)	**3**	**3**
6	Observing a Medicolegal autopsy / Postmortem	**1**	**1**
	Total	**10**	**10**

Minimum Teaching Hours in MBBS Phase II & Phase III part 1

Forensic Medicine & Toxicology	**Lectures (hours)**	**Small group learning (Tutorials / Seminars) /Integrated learning (hours)**	**Self - Directed Learning (hours)**	**Total (hours)**
Phase II	15	30	05	50
Phase III part 1	25	45	05	75
Total	**40**	**75**	**10**	**125**
AETCOM	**Lectures (hours)**	**Small group learning (Tutorials / Seminars) /Integrated learning (hours)**	**Self - Directed Learning (hours)**	**Total (hours)**
Phase II	00	29	08	37

Phase III part 1	00	19	06	25
Total	**00**	**48**	**14**	**62**

Minimum Teaching Hours in Internship

Subject	**Period of posting**
Forensic Medicine & Toxicology	**7 days**

Competencies in Internship

Certifiable Procedural skills desirable of Indian Medical Graduate in Forensic Medicine & Toxicology

A. An Intern must have observed or preferably assisted in:

- Documentation and certification of trauma (I)
- Diagnosis and certification of death (D)
- Legal documentation related to emergency cases (D)
- Certification of medico-legal cases e.g. Age estimation, Sexual Violence etc. (D)
- Establishing communication in medico-legal cases with police, public health authorities, other concerned departments, etc (D)

I- Independently performed on patients,
O- Observed in patients or on simulations,
D- Demonstration on patients or simulations and performance under supervision in patients

B. An Intern must have observed a medicolegal autopsy / postmortem Compulsory rotating Internship posting of 7 days in Forensic Medicine and Toxicology Log book to be maintained. The internship posting has to be extended (repeated) till all the certifiable skills are achieved. Use of skill lab is desirable wherever available

Sl no	Competency	Number of times to be done	Assessment	Setting
1	IMG should independently examine a trauma patient / simulated patient and document and certify trauma	02	Skill assessment	Casualty / EMD
2	IMG should demonstrate on patients or simulations and performance under supervision in patients the diagnosis and certification of death	02	Skill assessment / DOAP Session	Casualty / EMD / Ward / ICU
3	IMG should demonstrate the legal documentation related to emergency care in a medicolegal register / accident register maintained at casualty / EMD	02	Skill assessment / DOAP Session	Casualty / EMD

4	IMG should examine, document and certify in a medicolegal case of age estimation	01	Skill assessment / DOAP Session	Forensic Medicine /Casualty / EMD
5	IMG should examine, document and certify in a medicolegal case of victim of Sexual violence	01	Skill assessment / DOAP Session	OBG /Forensic Medicine /Casualty / EMD
6	IMG should examine, document and certify in a medicolegal case of accused of Sexual violence	01	Skill assessment / DOAP Session	Forensic Medicine /Casualty / EMD
7	IMG should demonstrate communication in medicolegal cases with police	01	Skill assessment / DOAP Session	Forensic Medicine /Casualty / EMD
8	IMG should demonstrate communication in medicolegal cases with public health authorities	01	Skill assessment / DOAP Session	Forensic Medicine /Casualty / EMD
9	IMG should demonstrate communication in medicolegal cases with Radiology / Pathology / Microbiology / FSL departments	01	Skill assessment / DOAP Session	Forensic Medicine /Casualty / EMD
10	IMG should observe and document a medicolegal autopsy / postmortem examination	01	Skill assessment / DOAP Session	Forensic Medicine

Assessment in Forensic Medicine & Toxicology

Summative Assessment - An assessment conducted at the end of instruction to check how much the student has learnt.

Formative Assessment - An assessment conducted during the instruction with primary purpose of providing feedback for improving learning.

Internal Assessment - Range of assessments conducted by the teachers teaching a particular subject with the purpose of knowing what is learnt and how it is learnt. Internal assessment can have both formative and summative functions.

Note - Assessment requires specification of measurable and observable entities. This could be in the form of whole tasks that contribute to one or more competencies or assessment of a competency per se. Another approach is to break down the individual competency into learning objectives related to the domains of knowledge, skills, attitudes, communication etc. and then assess them individually.

Scheduling of Internal Assessment - In Phase II MBBS there will be two Internal assessments in theory and practicals - In Phase III part 1 MBBS there will be two Internal assessments in theory and practicals. One of the tests, preferably the last test, should be prelim or pre-university examination.

Theory IA can include: Theory tests, seminars, quizzes, interest in subject, scientific attitude etc. Written tests should have essay questions, short notes and creative writing experiences.

Practical IA can include: practical tests, Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), records maintenance and attitudinal assessment.

Assessment of Log-book- Log book should record all activities like seminar, symposia, quizzes and other academic activities. It should be assessed regularly and submitted to the department. Up to twenty per cent IA Theory marks should be for Log book assessment.

Assessment of Practical Record book- Practical book should record all skills and other practical exercises done during the academic programme. It should be assessed regularly and submitted to the department. Up to twenty per cent IA Practical marks should be for Log book assessment

Internal Assessment for AETCOM will include: - Written tests comprising of short notes and creative writing experiences.

- OSCE based clinical scenarios and/ or viva voce. Skill competencies acquired during the Professional Development Programme (AETCOM) must be tested during the practical and viva voce.

Feedback in Internal Assessment - Feedback should be provided to students through out the course so that they are aware of their performance and remedial action can be initiated well in time. The feedbacks need to be structured and the faculty and students must be sensitized to giving and receiving feedback.
The results of IA should be displayed on notice board within two weeks of the test and an opportunity provided to the students to discuss the results and get feedback on making their performance better.
It is also recommended that students should sign with date whenever they are shown IA records in token of having seen and discussed the marks.

Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.

Internal assessment should be based on competencies and skills.

Criteria for appearing in University examination: Learners must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination

Annexure
Teaching Learning Methods

- Didactic lectures should be made more interactive by encouraging the more involvement of the students. In the present digital era, student's involvement is more with usage of technology. For examples, many polling sessions, quizzesetc can be done using google slides and other apps like Kahoot, Socrative, menti.com etc.
- Small group discussion (SGD) should be planned properly and discussed among the faculty members before taking the class. As for as possible, uniformity should be maintained in the SGD by various facilitators. Case based learning (CBL) and problem based learning (PBL) may be used to make the learner understand and learn about the various aspects in order to achieve the particular competency.
- Encourage the students learn them selves through self-directed learning (SDL). SDL sessions may be planned with objectives in order to cover the particular competency. These sessions may be conducted by providing learning material (research articles, public news, videos, etc) by a teacher and ask the students to search on a particular topic. Students should learn them selves by going through available resources and come back to classes allotted for SDL sessions where teacher able to connect the learning of students in order to achieve the competency.
- Integrated classes should be planned in order to cover the competency involving the topics from different subjects. These classes can be taken using Nesting, Temporal Coordination or Sharing. Case linkers may be used to link the topic/ subject area among different subjects/ departments.
- Skills should be taught using the clinical cases at hospital wards/ casualty/ EMD, simulation in skills labs and/ or departmental demonstration rooms. Case scenarios may be developed while teaching at skills lab and/ or demonstration rooms.

Example for teaching the clinical examination in poisoning:

- **Case scenario:** A farmer working in a field was brought with history of breathlessness, vomiting, excessive sweating and muscle twitching. On examination, the pupils were constricted and heart rate was decreased. He had defecated in his cloths. Smell of kerosene was present in his breath. Even the cloths were soiled smelling kerosene.
- **Demonstration of clinical examination:** Mannequins or standardised patients in the skills lab may be used for examination and recording of vital parameters like pulse, BP, RR, SPO2 and state of pupils. Also, response to treatment can be.
- **Diagnosis and management:** Discuss the differential diagnosis, investigations and definitive diagnosis. Discuss the various treatment modalities. The response to drugs used for treatment can be demonstrated using high fidelity mannequins.
- **Medicolegal responsibilities:** The medicolegal responsibilities such as preservation of gastric lavage material, medicolegal documentation, and police intimation should be demonstrated in a simulated environment and using standard formats.

Example for teaching the topic Injuries/ Trauma with integration:

Linker Case: A 30-year-old male while travelling in a motor bike met with an accident with a car coming from opposite side. As a result of this, he sustained multiple injuries (can be displayed in the form of photographs). He was brought by his friend to the hospital. On reaching the hospital, patient was in semiconscious state with difficulty in breathing.

b

Subjects for integration: Forensic Medicine, General Surgery.

- Forensic Medicine: Topics covered in this subject include different types of mechanical injuries possible in such accidents and other relevant topics related to mechanical injuries. [Competencies to be covered: FM 3.3, 3.4, 3.8]
- General Surgery: First aid treatment, Basic life support, Transportation of patient, Basic management of injuries at hospital. [Competencies to be covered: SU 17.1, 17.2, 17.3]

Type of Integration:

- Horizontal: Temporal coordination can be done if it is done in the same phase.
- Vertical: Nesting can be used if it is done in two different phases.

Additional details to case scenario:

- In addition to linker case, case details need to be added by respective departments depending on the progression of the class (such as clinical features, internal injuries, postmortem findings etc).
- Case details may be introduced step by step in order to involve students in discussion.

List of Competencies and SLOs to be covered in Phase III MBBS

General Information

- **SDL –1hr** **Assessment:** Written, Viva voce

FM1.3- Describe legal procedures including Criminal Procedure Code, Indian Penal Code, Indian Evidence Act, Civil and Criminal Cases, Inquest (Police Inquest and Magistrate's Inquest), Cognizable and Non-cognizable offences.

1.3.1: Describe the meaning of Criminal Procedure Code, Indian Penal Code, and Indian Evidence Act.
1.3.2: Differentiate between civil and criminal cases and their proceedings in the court of law.
1.3.3: Define inquest, describe its various types along with procedure followed in India
1.3.4: Differentiate between police and magistrate inquest
1.3.4: Discuss the meaning of cognizable and non-cognizable offence with examples

FM1.4- Describe Courts in India and their powers: Supreme Court. High Court, Sessions court, Magistrate's Court. Labour Court. Family Court, Executive Magistrate Court and Juvenile Justice Board.

1.4.1: Enumerate various types of courts available in India.
1.4.2: Describe the location, presiding officer and powers of various courts in India.

FM 1.5- Describe Court procedures including issue of summons, conduct money, types witnesses, recording of evidence: oath, affirmation, examination in chief, cross examination, re- examination & court questions, recording of evidence & conduct of doctor in witness box.

1.5.1: Define 'Summons'.
1.5.2: Describe the procedure to be followed by a doctor while receiving summons.
1.5.3: Define conduct money and discuss the procedure of receiving it
1.5.4: Define'Witness', Describe the types of witness.
1.5.5: Define'Evidence', Describe the types ofevidence.
1.5.6: Describe the steps of recording evidence in the court of law.
1.5.7: Describe the conduct of a doctor in the witnessbox.

FM 1.6 - Describe the offences in Court including Perjury; Court strictures vis-a-vis medical officer.

1.6.1: Explain the meaning of perjury and what is the punishment given for it.
1.6.2: Mention the various offences that could be charged upon medical officer by the court of law and its punishment.

- **SGD –1hr (ROLE PLAY)** **Assessment:** Written, Viva voce

FM1.7 - Describe Dying Declaration and Dying Deposition.

1.7.1: Define and discuss dying declaration & dying deposition.
1.7.2: Describe the procedure of recording of dying declaration along with any recent amendments
1.7.3: Differentiate between dying declaration and dying deposition.

- **Lecture –1hr** **Assessment:** Written, Viva voce

FM1.8 - Describe the latest decisions/ notifications/ resolutions/ circulars/ standing orders related to medico-legal practice issued by Courts/ Government authorities etc.

1.8.1: Describe the latest decisions/ notifications/ resolutions/ circulars/ standing orders related to medico-legal practice issued by Courts.

1.8.2: Describe the latest decisions/ notifications/ resolutions/ circulars/ standing orders related to medico-legal practice issued by Central Government authorities.

1.8.3: Describe the latest decisions/ notifications/ resolutions/ circulars/ standing orders related to medico-legal practice issued by State Government authorities.

1.8.4: Describe the latest decisions/ notifications/ resolutions/ circulars/ standing orders related to medico-legal practice issued by NMC/ SMC.

- **Lecture –1hr** **Assessment:** Written, Vivavoce

FM1.9 - Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical certificates & medicolegal reports especially.

- **Maintenance of patient case records, discharge summary, prescribedregistersto be maintained in HealthCentres.**
- **Maintenance ofmedico-legal register like accidentregister**
- **Documents of issuance of woundcertificate**
- **Documents of issuance of drunkennesscertificate**
- **Documents of issuance of sickness &fitnesscertificate**
- **Documents of issuance of deathcertificate**
- **Documents of issuance of medical certification of causeof death-form no.4, 4A**
- **Documents of estimationof age by physical, dental & radiological**
- **examination&issuance of certificate.**

1.9.1: Enumerate various medical / medicolegal records to be maintainedby hospital/ Medical practitioner.

1.9.2: Describe the importance of documentation and maintenance of medical records (out-patient slips, in-patient case details, consent forms, operative & anesthetic notes, discharge/ death summary, sickness & fitness certificates, MCCD certificate, etc).

1.9.3: Describe the importance of documentation and maintenance of medicolegal records (MLC register, MTP register, age certificate, wound certificate, drunkenness certificate, sexual violence report, postmortem report,etc).

- **Lecture –1hr** **Assessment:** Written, Viva voce

FM 1.10 - Select appropriate cause of death in a particular scenario by referring ICD 10 code.

1.10.1: Explain the importance of ICD-10 code in certifying the cause of death.

1.10.2: Chose the appropriate cause of death in a particular scenario.

FM 1.11 - Write a correct cause of death certificate as per ICD 10 document.

1.11.1: Describe the objectives of MCCD certification.
1.11.2: Draft the MCCD certificate in a particular scenario as per ICD-10.
1.11.3: Explain the procedure of dispatching MCCD certificate to the concerned authorities.

FORENSIC PATHOLOGY

- **SGD –5hrs** **Assessment:** Written, Viva voce

FM 2.20 - Mechanical asphyxia: Define, classify and describe asphyxia and medico-legal inter pretation of post-mortem findings in asphyxial deaths.

2.20.1: Define asphyxia.
2.20.2: Mention the various types of asyphyxial deaths (mechanical, pathological, toxic, environmental, traumatic, postural, iatrogenic).
2.20.3: Describe the pathophysiology (vicious cycle) of asphyxia.
2.20.4: Explain the types of anoxia/ hypoxia (Gordon's classification).
2.20.5: Discuss the classical postmortem findings in asphyxia deaths.

FM 2.21 - Mechanical asphyxia: Describe and discuss different types of hanging and strangulation including clinical findings, causes of death, post-mortem findings and medico-legal aspects of deathd ue to hanging and strangulation including examination, preservation and dispatch of ligature material.

2.21.1: Define mechanical asphyxia death.
2.21.2: Classify mechanical asphyxial deaths.
2.21.3: Define hanging.
2.21.4: Enumerate the types of hanging.
2.21.5: Describe the causes of death, postmortem findings and medicolegal aspects of death due to hanging.
2.21.5: Discuss on judicial hanging.
2.21.8: Define strangulation
2.21.6: Enumerate the types of strangulation.
2.21.7: Describe the causes of death, postmortem findings and medicolegal aspects of death due to Ligature strangulation.

FM 2.22 - Mechanical asphyxia: Describe and discuss patho-physiology, clinical features, post-mortem findings and medico-legal aspects of traumatic asphyxia, obstruction of nose & mouth, suffocation and sexual asphyxia.

2.22.1: Define traumatic asphyxia.
2.22.2: Describe the pathophysiology, postmortem findings and medicolegal aspects of traumatic asphyxia.
2.22.3: Discuss on postural/ positional asphyxia.
2.22.4: Discuss on Overlying.
2.22.5: Define suffocation.
2.22.6: Enumerate the typesofsuffocation.
2.22.7: Define and Describe the postmortem findings and medicolegal aspects of Environmental asphyxia, Smothering, Gagging and Choking.
2.22.8: Discuss on Cafe- coronary.
2.22.9: Discuss on Burking.
2.22.10: Describe methods used, postmortem findings and medicolegal.

FM 2.23 - Mechanical asphyxia: Describe and discuss types, patho- physiology, clinical features, post- mortem findings and medico- legal aspects of drowning, diatom test and gettler test.

2.23.1: Define drowning.
2.23.2: Explain the mechanism of drowning.
2.23.3: Enumerate the types of drowning and Describe the pathophysiology, causes of death, postmortem findings and medicolegal aspects of drowning.
2.23.4: Describe the clinical features and treatment of Post-immersion syndrome (Near drowning).
2.23.5: Discuss on Diatom test and its medicolegalimportance.
2.23.6: Discuss on Gettler test and its medicolegalimportance.

- **SGD –1hr** **Assessment:** Written, Viva voce

FM 2.24- Thermal Deaths:- Describe the clinical features, post-mortem finding and medicolegal aspects of injuries due to physical agents like heat (heat-hyper-pyrexia heat stroke, sun stroke, heat exhaustion/ prostration, heat cramps [miner's cramp] or cold (systemic and localized hypothermia, frostbite, trench foot, immersion foot).

2.24.1: Classify thermalinjuries.
2.24.2: Describe the local (frostbite, trench foot, immersion foot) and general effects (hypothermia) due to Cold.
2.24.3: Describe the postmortem findings and medicolegal aspects of deaths due to Hypothermia.
2.24.4: Describe the general effects, postmortem findings and medicolegal heat cramps, heat exhaustion/ prostration, heat hyper pyrexia.

- **SGD –1hr** **Assessment:**Written, Viva voce

FM 2.25- Describe types of injuries, clinical features, patho-physiology, post-mortem findings and medico- legal aspects in cases of burns, scalds, lightening, electrocution and radiations

2.25.1: Define Burn injury.
2.25.2: Describe the degree of burns (Dupuytren's, Wilson's and Clinical classification).
2.25.3: Explain the method of calculation of percentage of burns (Rule of Nine/ Wallace, Lund and Brow derchart).
2.25.4: Describe the clinical features, management, causes of death, postmortem findings and medicolegal aspects of burns and Scalds.
2.25.5: Differentiate between antemortem and postmortem burns.
2.25.6: Describe the factors affecting the electrical injuries.
2.25.7: Describe the postmortem findings, causes of death and medicolegal aspects in deaths due to electrocution.
2.25.8: Describe the factors affecting the lightening injuries.
2.25.9: Describe the postmortem findings, causes of death and medicolegal aspects in deaths due to lightening.
2.25.10: Discuss on injuries caused by exposure toradiation.

- **LECTURE –1hr** **Assessment:** Written, Viva voce

FM 2.26- Describe and discuss clinical features, post-mortem findings and medico-legal aspects of death due to starvation and neglect

2.26.1: Define acute and chronic starvation.
2.26.2: Enumerate the types of starvation.
2.26.3: Enumerate the causes of starvation.
2.26.4: Describe the factors modifying the effects of starvation.
2.26.5: Describe the clinical features, management, causes of death, postmortem findings and medicolegal aspects of starvation.

- **SGD –3hrs:** **Assessment:**Written, Viva voce, OSPE

FM 2.27- Define and discuss infanticide, foeticide and stillbirth

2.27.1: Define Foeticide, Neonaticide and in fanticide.
2.27.2: Define dead birth, still birth and live birth.
2.27.3: Discuss on medicolegal aspects of in fanticide.

FM 2.28- Describe and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP session of ossification centres, Hydrostatic test, Sudden Infant Death syndrome. Munchausen's syndrome by proxy. ***[Munchausen's syndrome by proxy is covered in FM 3.29]***

2.28.1: Describe the causes of Intra Uterine Death (IUD).
2.28.2: Describe the features of 'Dead born foetus'.
2.28.3: Define 'Viability of foetus' and its medicolegal importance.
2.28.4: Describe the method of estimation of gestational age of foetus.
2.28.5: Describe the signs of 'Live birth'.
2.28.6: Describe the causes of infant death.
2.28.6: Define Sudden Infant Death Syndrome (SIDS).
2.28.7: Describe causes, postmortem findings & medicolegal aspects of SIDS

- **SGD –1hr** **Assessment:** OSPE

FM 2.29 - Demonstrate respect to the directions of courts, while appearing as witness for recording of evidence under oath or affirmation, examination in chief, cross examination, re- examination and court questions, recording of evidence

2.29.1: Demonstrate the procedure of receiving summons
2.29.2: Demonstrate the oath taking in the court of law.
2.29.3: Demonstrate the procedure of recording of evidence in court of law (examination in chief, cross examination, re-examination, question by Judge).
2.29.4: Demonstrate the doctor's professionalism (attitude and subject expertise) expected in the witness box.

FM 2.30 - Have knowledge/ awareness of latest decisions/ notifications/ resolutions/ circulars/ standing orders related to medico-legal practice issued by Courts/ Government authorities etc.

2.30.1: Debate on the latest decisions/ notifications/ circulars/ standing orders related to medico-legal practice issued by Courts, Central and State governments and NMC.

- **SGD –3 hrs** **Assessment:** Written, Viva voce

FM 3.3 - Mechanical injuries and wounds: Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/ fabricated wounds and their medico-legal aspects.

3.3.1: Define injury and discuss various types of injuries
3.3.2: Classify mechanical injuries.
3.3.3: Define abrasion.
3.3.4: Describe the characteristic features, types and medicolegal aspects of an abrasion
3.3.5: Define contusion.
3.3.6: Describe the characteristic features, types and medicolegal aspects of contusion.
3.3.7: Describe the factors influencing the formation of contusion.
3.3.8: Define laceration.
3.3.9: Describe the characteristic features, types and medicolegal aspects of alaceration.
3.3.10: Define an incised wound.
3.3.11: Describe the characteristic features, types and medicolegal aspects of an incised wound.
3.3.12: Define chop wound.
3.3.13: Describe the characteristic features and medicolegal aspects of chop wound.
3.3.14: Define stab wound.
3.3.15: Describe the characteristic features, types and medicolegal aspects of stabwound.
3.3.16: Define defense wound.
3.3.17: Describe the characteristic features and medicolegal importance of defense wound.
3.3.18: Define fabricated wound.
3.3.19: Describe the characteristic features and medicolegal importance of fabricated wound.

- **Lecture –2hrs** **Assessment:** Written, Viva voce

FM 3.4 - Mechanical injuries and wounds: Define Injury, assault, & hurt. Describe IPC pertaining to injuries

3.4.1 : Define injury
3.4.2 : Define hurt
3.4.3 : Define assault
3.4.4 : Describe various IPC sections related to injuries

FM 3.5 - Mechanical injuries and wounds: Describe accidental, suicidal and homicidal injuries. Describe simple Grievous and dangerous injuries. Describe ante-mortem and post-mortem injuries.

3.5.1 : Differentiate between accidental, suicidal, homicidal injuries.
3.5.2 : Define and describe simple, grievous and dangerous injuries with their IPCs.
3.5.3 : Differentiate between antemortem and postmortem injuries.

FM 3.6 - Mechanical injuries and wounds: Describe healing of injury and fracture of bones with its medicolegal importance.

3.6.1 : Describe the various stages of healing of injury and fracture of bone with their medicolegal importance.

FM 3.7 - Describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death; primary and secondary.

3.7.1: Describe the factors influencing infliction of injuries and healing.
3.7.2 : Describe primary and secondary injuries that can cause death.

FM 3.8 - Mechanical injuries and wounds: Describe and discuss different types of weapons including dangerous weapons and their examination.

3.8.1: Identify the weapons that cause blunt force and sharp force injuries.
3.8.2: Define dangerous weapon (S. 324 IPC and 326 IPC).
3.8.3: Discuss examination of weapons.

- **SGD –3hrs** **Assessment:** Written, Viva voce

FM 3.9 – Firearm injuries: Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking.

3.9.1: Define Forensic ballistics, Proximal ballistics, Inter mediate ballistics, and Terminal ballistics.
3.9.2: Define firearm.
3.9.3: Classify firearms.
3.9.4: Enumerate the parts of the basic firearms. 3.9.5: Explain 'rifling' and 'calibre' of a firearm.
3.9.6: Explain 'choking' in a firearm and its purpose.
3.9.7: Enumerate the components of rifled firearm and shotgun cartridge, and its function
3.9.8: Describe the types of gun powder.
3.9.9: Discuss on types of bullets and pellets.

FM 3.10 - Firearm injuries: Describe and discuss wound ballistics- different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms.

3.10.1: Define wound ballistics.
3.10.2: Enumerate the factors affecting gunshot wound production.
3.10.3: Explain the mechanism of firing and various components of discharge offiring.
3.10.4: Describe the entry and exit wounds from a rifled firearm at various ranges.
3.10.5: Describe the entry and exit wounds from a shotgun at various ranges.
3.10.6: Discuss on Ricocheting of a bullet and its effect.
3.10.6: Discuss on Tumbling bullet, Yawning bullet, Dumdum bullet, Tandem bullet, Souvenir bullet.
3.10.7: List the evidentiary materials to be collected in gunshot wounds.
3.10.8: Describe the method of collection and preservation of evidentiary materials in gun shot wounds.

3.10.9: Describe the significance of bullet markings and use ofcomparison microscope.
3.10.10: Enumerate the tests done for detection of gun shot residue.
3.10.11: Describe the injuries caused by bomb blast/ explosion.

- **SGD–4hrs** **Assessment:** Written, Viva voce

FM 3.11 - Regional injuries: Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton.

3.11.1: Define head injury.
3.11.2: Discuss the forensic anatomy of scalp and scalp injuries.
3.11.3: Enumerate the types, mechanism, causes and medicolegal importance of skull fractures.
3.11.4: Describe the intracranial hemorrhages and its medicolegal aspects.
3.11.5: Describe the cerebral injuries and its medicolegal aspects.
3.11.6: Explain 'concussion of brain' and 'diffuse axonal injury'.
3.11.7: Discuss on 'Punch drunk syndrome'.
3.11.8: Describe the mechanism, clinical features and medicolegal aspects of whiplash injury.
3.11.9: Discuss on 'railway spine'.
3.11.10: Discuss on injuries to chest, abdomen, limbs, skeleton and genitalorgans.

FM 3.12 -Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome.

3.12.1: Describe the injuries sustained to person in a fall from height.
3.12.2: Describe the injuries to a pedestrian in vehicular accident (primary impact, second impact and secondary injuries).
3.12.3: Describe the injuries to driver, front seat passenger and back seat passenger of a motor car.
3.12.4: Discuss on 'Crush syndrome'

- **Lecture –1hr** **Assessment:**Written, Viva voce

FM 3.13 -Describe different types of sexual offences. Describe various sections of IPC regarding rape including definition of rape (Section 375 IPC), Punishment for Rape (Section 376 IPC) and recent amendments notified till date.

3.13.1: Classify sexual offences.
3.13.2: Define 'rape' as per section 375 IPC.
3.13.3: Define 'statutory rape'.
3.13.4: Discuss on 'date rape'.
3.13.5: Describe the punishment for rape (Sec. 376 IPC).
3.13.6: Explain the meaning of 'custodial rape' and punishment for it.
3.13.7: Understand the salient features of section 354, 354-A, 354-B, 354-C and 354-DIPC.
3.13.8: Describe the salient features of Protection of Children from Sexual Offences Act (POCSO), 2012.

- **Lecture –1hr** **Assessment:** Written, Viva voce

FM 3.14 -Describe and discuss the examination of the victim of an alleged case of rape, and the preparation of report, framing the opinion and preservation and dispatch of trace evidences in such cases..

3.14.1: Describe the findings in a victim of sexual violence.
3.14.2: Describe the duties of doctor towards victim of sexual violence.
3.14.3: Understand the legal sections related to examination of a victim of sexual violence (164-A CrPC, 327 CrPC, 357-C CrPC, 228-A IPC, 114-A IEA, 146 IEA).
3.14.4: Describe the procedure of examination, contents of the format, guide lines for preliminary and final opinion in avictim of sexual violence (given by Ministry of Health and Family welfare, Government of India).
3.14.5: Describe the procedure of collecting, preservation and dispatch of evidentiary materials from a victim of sexualviolence.
3.14.6: Understand the significance of SAFE kit in collecting evidentiary material from a victim of sexual assault.

- **SGD- 3hrs** **Assessment:** Written, Viva voce

FM 3.15 -Describe and discuss examination of accused and victim of sodomy, preparation of report, framing of opinion, preservation and despatch of trace evidences in such cases.

3.15.1: Define sodomy.
3.15.2: Describe the findings in a victim of sodomy.
3.15.3: Describe the procedure of examination, contents of the format, and guidelines for opinion in a victim ofsodomy.
3.15.4: Describe the procedure of collecting, preservation and dispatch of evidentiary materials from a victim of sodomy.
3.15.5: Describe the findings in an accused of sexual assault.
3.15.6: Describe the procedure of examination, contents of the format, and guidelines for opinion in an accused of sexual assault.
3.15.7: Understand the recent amendments in section 377IPC.

FM 3.16 -Describe and discuss adultery and unnatural sexual offences, sodomy, incest, lesbianism, buccal coitus, bestiality, indecent assault and preparation of report, framing the opinion and preservation and dispatch of trace evidences in such cases

3.16.1: Explain the meaning of ‘adultery’ and its medicolegal importance.
3.16.2: Explain the meaning of ‘incest’ and its medicolegal importance.
3.16.3: Define unnatural sexual offence (Sec. 377IPC).
3.16.4: Discuss on ‘lesbianism’ and its medicolegal importance.
3.16.5: Discuss on ‘buccal coitus’ and its medicolegal importance.
3.16.6: Discuss on ‘bestiality’ and its medicolegal importance.
3.16.7: Describe the procedure of examination, collection, preservation and dispatch of evidentiary materials in a victim and accused of lesbianism, buccal coitus and bestiality.
3.16.8 Discuss indecent assault.

FM 3.17 -Describe and discuss the sexual perversions fetishism, transvestism, voyeurism, sadism, necrophagia, masochism, exhibitionism, frotteurism, Necrophilia.

3.17.1: Define sexual paraphilia.
3.17.2: Explain the sexual perversions requiring partner for sexual gratification (sadism, masochism, frotteurism, pedophilia, necrophilia, necrophagia).
3.17.3: Explain the sexual perversions not requiring partner for sexual gratification (voyeurism, exhibitionism).
3.17.4: Explain the sexual perversions requiring object/ article as astimulus for sexual gratification (fetishism, transvestism).

- **Lecture –2hrs** **Assessment:** Written, Viva voce

FM 3.18 -Describe anatomy of male and female genitalia, hymen and its types. Discuss the medico-legal importance of hymen. Define virginity, defloration, legitimacy and its medicolegal importance.

3.18.1: Describe anatomy of male and female genitalia.
3.18.2: Describe the anatomical appearance and types of hymen.
3.18.3: Define virginity and defloration.
3.18.4: Describe the signs of virginity and its medicolegal importance.
3.18.5: Define legitimacy.
3.18.6: Discuss the medicolegal importance of legitimacy.

FM 3.19 -Discuss the medicolegal aspects of pregnancy and delivery, signs of pregnancy, precipitate labour, superfoetation, superfecundation and signs of recent and remote delivery in living and dead.

3.19.1: Describe the presumptive, probable and positive signs of pregnancy.
3.19.2: Describe pseudocyesis.
3.19.3: Define superfoetation and superfecundation.
3.19.4: Describe the medicolegal aspecs of pregnancy
3.19.5: Define delivery.
3.19.6: Describe the signs of recent and remote delivery in a living individual.
3.19.7: Enumerate the signs of recent & remote delivery in a dead individual
3.19.8. Mention the medicolegal aspects of delivery.
3.19.9: Define precipitate labour.
3.19.10: Describe the signs and medicolegal aspects of precipitate labour.

FM 3.20 -Discuss disputed paternity and maternity
3.20.1: Discuss the medicolegal issues related to disputed paternity and maternity.
3.20.2: Describe the method of identifying paternalism and maternalism

- **SDL –0.5hrs** **Assessment:** Written, Viva voce

FM 3.21 -Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC & PNDT)- Prohibition of Sex Selection Act 2003 and Domestic Violence Act 2005.
3.21.1: Describe the objectives of PCPNDT Act, 1994.
3.21.2: Enumerate the indications for prenatal diagnostic procedures.

3.21.3: List the various prenatal diagnostic techniques.
3.21.4: Describe the guidelines for establishing and maintaining the centres to practice prenatal diagnostic procedures.
3.21.5: Describe the punishment for offences under PCPNDT Act.
3.21.6: Discuss on amendments to the PCPNDT Act tilldate.
3.21.7: Define domestic violence.
3.21.8: Describe the salient features of The Protection of Women from Domestic Violence Act, 2005.
3.21.9: Explain the medicolegal responsibilities of a medical practitioner in a domestic violence case.

- **Lecture –2hrs** **Assessment:** Written, Viva voce

FM 3.22 -Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female.

3.22.1: Define impotence, sterility, frigidity, sexual/ erectile dysfunctionand prematureejaculation.
3.22.2: List the causes of impotence in male andfemale.
3.22.3: Describe the medicolegal issues related to impotence, sexual/ erectiledys function and prematureejaculation.
3.22.4: List the causes of sterility in male and female.
3.22.5: Describe the medicolegal issues related to sterility.
33.22.6: Describe procedure of examination in alleged case of impotency.

FM 3.23 - Discuss sterilization of male and female, artificial insemination, Test tube baby, surrogate mother, hormonal replacement therapy with respect to appropriate national and state laws.

3.23.1: Describe the methods of sterilization in male and female.
3.23.2: Discuss the medicolegal issues related to sterilization procedure.
3.23.3: Define artificial in semination.
3.23.4: Mention the types of artificialin semination.
3.23.5: Enumerate the indications for artificialin semination.
3.23.6: Discuss ethical issues and precautions to be taken during the artificial in semination.
3.23.7: Describe medicolegal issues related to artificial in semination.
3.23.8: Discuss on invitro fertilization/ test tube baby and surrogate mother hood.

- **SDL –0.5hrs** **Assessment:** Written, Viva voce

FM 3.24-Discuss the relative importance of surgical methods of contraception (vasectomy and tubectomy) as methods of contraception in the National Family Planning Programme.
3.24.1: Describe the salient features of the National Family Planning Programme related to vasectomy and tubectomy.

FM 3.25-Discuss the major results of National Family Health Survey.

3.25.1: Discuss the major results of National Family Health Survey (NFHS).

- **Lecture –2hrs** **Assessment:** Written, Viva voce

FM 3.26-Discuss the National Guidelines for accreditation, supervision & regulation of ART Clinics in India.

3.26.1: Discuss the National Guidelines for accreditation, supervision & regulation of ART Clinicsin India.
3.26.2: Explain the recent updates on laws related to ART and Surrogacy

FM 3.27-Define, classify and discuss abortion, methods of procuring MTP and criminal abortion, MTP Act 1971.

3.27.1: Define abortion.
3.27.2: Classifyabortion.
3.27.3: Describe the methods used for the rapeutic abortion.
3.27.4: Describe the methods used for criminal abortion & its complications.
3.27.5: Discuss the Medical termination of Pregnancy Act, 1971 and its amendments.

FM 3.28-Describe evidence of abortion – living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion.

3.28.1: Describe evidences of abortion in living and dead individual.
3.28.2: Explain the circumstances under which a case of abortion is brought to the notice of medical officer.
3.28.3: Describe the medical and legal duties of doctor in a case of criminal abortion.
3.28.4: Describe the examination, method of collection, preservation and dispatch of evidentiary materials during investigation of death of woman in criminal abortion.

- **SGD –1hr** **Assessment:** Written, Viva voce

FM 3.29-Describe and discuss child abuse and battered baby syndrome.

3.29.1: Define child abuse or child maltreatment (as per WHO).
3.29.2: Enumerate different forms of child abuse.
3.29.3: Define battered baby syndrome.
3.29.4: Describe the clinical findings and medicolegal aspects of battered baby syndrome.
3.29.5: Discuss on Shaken baby syndrome
3.29.6: Discuss on Munchausen's Syndrome by proxy.
3.29.7: Describe the medicolegal responsibilities of a doctor in child abuse cases.

- **SDL–1hr** **Assessment:** Written, Viva voce

FM 3.30-Describe and discuss issues relating to torture, identification of injuries caused by torture and its sequalae, management of torture survivors

3.30.1: Define Torture (as per UN Convention of Torture, World Medical Association).
3.30.2: Enumerate the types/ methods/ techniques used for torture.
3.30.3: Explain the medical findings in a case of torture.
3.30.4: Outline the management of torture survivors.
3.30.5: Discuss the ethical and legal issues related to torture.

FM 3.31-Torture and Human Rights:- Describe and discuss guidelines & protocols of National human rights commission regarding torture.

3.31.1: Describe the guidelines and protocols of National human rights commission in cases of torture.

- **SGD –1hr** **Assessment:** Written, Vivavoce

FM 3.32-Demonstrate the Professionalism while preparing reports in medicolegal situations, inter pretation of findings and making inference/ opinion, collection, preservation and dispatch of biological or trace evidences.

3.32.1: Demonstrate the professionalism to be shown by a doctor while preparing reports in medicolegal cases, inter pretation of findings and making inference/ opinion.
3.32.2: Demonstrate the professionalism to be shown by a doctor during the collection, preservation and dispatch of biological or trace evidences.

FM 3.33-Should be able to demonstrate the professionalism while dealing with victims of torture and human right violations, sexual assaults- psychological consultation, rehabilitation.

3.33.1: Demonstrate the professionalism to be shown by a doctor while dealing with victims of torture and human right violations.
3.33.2: Demonstrate the professionalism to be shown by a doctor during the examination, psychological consultation and rehabilitation of sexual victims.

(MEDICAL JURISPRUDENCE (MEDICAL LAW AND ETHICS)

- **Lecture –3hrs** **Assessment:** Written, Viva voce

FM 4.1 - Describe Medical Ethics and explain its historical emergence.

4.1.1: Define Ethics and Medical ethics.
4.1.2: Describe the historical emergence of Medical ethics.

FM 4.2 - Describe the Code of Medical Ethics 2002 conduct, Etiquette and Ethics in medical practice and unethical practices & the dichotomy.

4.2.1: Describe the 'Code of medical ethics' as per Indian Medical Council (Professional conduct, Etiquette and Ethics) Regulations, 2002.
4.2.2: Enumerate the various practices of a medical practitioner whichare considered as unethical.

4.2.3: Explain the meaning of Dichotomy withexamples.
4.2.4: Mention guidelines laid down by MCI with respect to remuneration.

FM 4.3 - Describe the functions and role of Medical Council of India and State MedicalCouncils.
4.3.1 : Describe the constitution and functions of Medical Council of India/ National Medical Council.

FM 4.4 - Describe the Indian Medical Register.

4.4.1: List the various particulars to be entered in Indian Medical Register (IMR).
4.4.2: Mention under which schedules, the degrees obtained by institutions in and outside India are recognized by NMC.
4.4.3: Describe the procedure for a foreign medical practitioner toget enrolled inIMR.
4.4.4: Mention the advantages to a Doctor after enrolling in IMR.

FM 4.5 - Rights/ privileges of a medical practitioner, in famous conduct, disciplinary Committee, disciplinary procedures, warning notice and penal erasure.

4.5.1: Enumerate the Rights/ privileges of a medical practitioner
4.5.2: Define Infamous conduct/ Professional misconduct with suitable examples (as per IMC regulations, 2002).
4.5.3: Describe the composition of disciplinary committee and its procedure in dealing with cases of infamousconduct.
4.5.4: Discuss the various punishments awarded by disciplinarycommittee for infamous conduct (warning notice, temporary erasure, penal erasure).

FM 4.6 - Describe the Laws in Relation to medical practice and the duties of a medical practitioner towards patients and society

4.6.1: Enumerate the laws related to medical practice inIndia.
4.6.2: Describe the 'Duties of a medical practitioner' in general towards his patient, society and research.

- **Lecture –1hr** **Assessment:** Written, Viva voce

FM 4.7 - Describe and discuss the ethics related to HIV patients.

4.7.1: Describe legal and ethical issues in HIV testing.

4.7.2: Mention the rights of HIV positivepatients.
4.7.3: Discuss the duties of a Doctor while treating HIV patients with respect to confidentiality & disclosure.
4.7.4: Discuss the current policies related to the research and health care of HIV positive patients.

- **Lecture –1hr** **Assessment:**Written, Viva voce

FM 4.8 - Describe the Consumer Protection Act-1986 (Medical Indemnity Insurance, Civil Litigations and Compensations), Workman's Compensation Act & ESI Act.

4.8.1: Discuss on Consumer Protection Act-1986 in view of medical services with latest amendments.
4.8.2: Describe the purpose of Medical Indemnity Insurance in civil litigations and compensations.
4.8.3: Discuss the role of a doctor in awarding compensation to workersor their dependents as per Workman's Compensation Act and ESI Act.

- **SGD –1hr** **Assessment:** Written, Viva voce

FM 4.9 - Describe the medico - legal issues in relation to family violence, violation of human rights, NHRC and doctors.

4.9.1: Define DomesticViolence.
4.9.2: Discuss the salient features of "Protection of women fromdomestic violence Act, 2005' in relation to medical legal responsibilities of a medical practitioner.
4.9.3: Enumerate the cases related to violation of humanrights.
4.9.4: Discuss the responsibilities of a doctor in cases of violation of human rights.

FM 4.10 - Describe communication between doctors, public and media.

4.10.1: Describe the communication skills by a doctor with the public and its importance.
4.10.2: Describe the communication skills and precautions to be taken by a doctor while interacting with the media.
4.10.3: Describe communication skills by a doctor with his/ her colleagues.

FM 4.11 - Describe and discuss euthanasia.

4.11.1: Defineeuthanasia.
4.11.2: Describe various types of euthanasia.
4.11.3: Debate around euthanasia- the arguments against and in favour.
4.11.4: Mention the legal status of euthanasia in India and in other countries.
4.11.5: Discuss the landmark case of Aruna Shanbaug and its impact on the status of euthanasia in India.

FM 4.12 - Discuss legal and ethical issues in relation to stem cell research.

4.12.1: Enumerate the application of stem cells in research and therapy.
4.12.2: Discuss the ethical issues arising from stem cell research and therapy.
4.12.3: Discuss the legal status of stem cell therapy and research in India.
4.12.4: Describe the guidelines for stem cell research in India.

FM 4.13 - Describe social aspects of Medico-legal cases with respect to victims of assault, rape, attempted suicide, homicide, domestic violence, dowry-related cases.

4.13.1: Describe the social aspects and role of medical professionals with respect to victim of sexual violence.
4.13.2: Describe the social aspects and role of medical professionals with respect to victim of attempted suicide.
4.13.3: Describe the social aspects and role of medical professionals with respect to victim of attempted homicide.
4.13.4: Describe the social aspects and role of medical professionals with respect to victim of domestic violence.

FM 4.14 - Describe & discuss the challenges in managing medico-legal cases including development of skills in relationship management – Human behaviour, communication skills, conflict resolution techniques.

4.14.1: Discuss the challenges in managing the medico legalcases.
4.14.2: Describe the principles of doctor-patient relationship management.
4.14.3: Describe the development of human behavior and communication skills required for managing doctor-patient relationship.
4.14.4: Discuss the conflict resolution techniques in managing medico-legal cases.

FM 4.15 - Describe the principles of handling pressure – definition, types, causes, sources and skills for managing the pressure while dealing with medico-legal cases by the doctor.

4.15.1: Define stress.
4.15.2: Mention the types of pressure while dealing with medico-legal cases by a doctor.
4.15.3: List the causes/ sources of pressure in handling medico-legal cases.
4.15.4: Discuss the skills needed for managing the pressure situationsin handling a medico-legal case.

- **Lecture –1hr** **Assessment:** Written, Viva voce

FM 4.16 - Describe and discuss Bioethics.

4.16.1: Define bioethics.
4.16.2: Enumerate the issues in medical practice where in bioethics is applied.
4.16.3: Mention the four main principles of bioethics.
4.16.4: Discuss the medico-legal issues related to bioethics in patient care.

FM 4.17 - Describe and discuss ethical Principles: Respect fo autonomy, non-malfeasance, beneficence & justice.

4.17.1: Describe respect for patient'sautonomy.
4.17.2: Describe the role of beneficence as a guiding principle in patient care.
4.17.3: Describe the role of non-maleficence as a guiding principle in patient care.
4.17.4: Discuss the application of justice in distributing resources and benefits in medical practice and research.

- **SGD –3hrs** **Assessment:** Written, Viva voce

FM 4.18 - Describe and discuss medical negligence including civil and criminal negligence, contributory negligence, corporate negligence, vicarious liability, Res Ipsa Loquitor, prevention of medical negligence and defenses in medical negligence litigations.

4.18.1: Define medical negligence.
4.18.2: Describe the elements of medical negligence.
4.18.3: Describe civil and criminal negligence with examples.
4.18.4: Describe contributory negligence with examples.
4.18.5: Describe the importance of Vicarious liability in medical practice.
4.18.6: Describe Corporate Negligence with examples.
4.18.7: Describe Res Ipsa Loquitur with examples.
4.18.8: Mention the precautionary measures to be taken to avoid medical negligence.
4.18.9: Describe the various defenses for a doctor in medical negligence (including Contributary negligence, the rapeutic misadventure, Medical maloccurrence, Calculated risk doctrine, Novus actusinterveniens, Resjudicata etc).

FM 4.19 - Define Consent. Describe different types of consent and ingredients of informed consent. Describe the rules of consent and importance of consent in relation to age, emergency situation, mental illness and alcohol intoxication.

4.19.1: Define consent.
4.19.2: Describe the different types of consent with suitable examples.
4.19.3: Describe the components of an informed consent.
4.19.4: Describe the rules and regulations associated with consent.
4.19.5: Explain the importance of consent in relation to age, emergency situation, mental illness and alcohol in toxication (with relevant sections of IPC).

FM 4.20 - Describe Therapeutic privilege, Malingering, Therapeutic Misadventure, Professional Secrecy, Human Experimentation.

4.20.1: Explain the concept of 'the rapeutic privilege' in medical practice.
4.20.2: Discuss the legal aspects of Malingering during medical practice.

- **LECTURE –1hr** **Assessment:** Written, Viva voce

FM 4.21 - Describe Products liability and Medical Indemnity Insurance.

4.21.1: Discuss about 'product liability' in medical negligence with examples.
4.21.2: Describe medical indemnity insurance and its purpose.

- **LECTURE –1hr** **Assessment:** Written, Viva voce

FM 4.22 - Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath.

4.22.1: Explain oath as described by Hippocrates, Charaka and Sushruta.
4.22.3: Describe the procedure for administration of oath for a medical practitioner.

FM 4.23 - Describe the modified Declaration of Geneva and its relevance.

4.23.1: Describe the components of declaration of Geneva.
4.23.2: Describe the components of modified declaration of Geneva.
4.23.3: Explain the relevance of Declaration of Geneva in the medical profession.

FM 4.24 - Enumerate rights, privileges and duties of a Registered Medical Practitioner. Discuss doctor-patient relationship: professional secrecy and privileged communication.

4.24.1: Enumerate the rights and privileges of Registered Medical Practitioner.
4.24.2: Describe the duties of a Registered Medical Practitioner.
4.24.3: Discuss on doctor-patient relationship in clinical practice.
4.24.4: Explain professional secrecy with examples.
4.24.5: Describe Privileged communication with examples.

FM 4.25 - Clinical research & Ethics Discuss human experimentation including clinical trials.

4.25.1: Enumerate the need and drawbacks of different types of clinical research on humans.
4.25.2: Describe the phases of clinical trials and it simplications.
4.25.3: Describe the ethical regulations and guidelines for clinical research.
4.25.4: Discuss the principles pertaining to human experimentation in Nuremberg code and Belmont report.
4.25.5: Discuss the steps to be taken for protection of vulnerable populationin clinical trials/ research.

FM 4.26 - Discuss the constitution and functions of ethics committee.

4.26.1: List the composition of Institutional Ethics Committee (IEC).
4.26.2: Mention the responsibilities and duties of IEC.
4.26.3: Describe the proposals that are required to be presented before IEC.
4.26.4: Discuss limitations of IEC.

FM 4.27 - Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals.

4.27.1: Describe the international and national ethics guidelines for human and animal research.
4.27.2: Discuss the principles of ICMR guidelines for research involving human participants.
4.27.3: Discuss the rights of human research participants.
4.27.4: Discuss the 5 R's of animal research ethics.

- **SGD –1hr** **Assessment:** OSPE

FM 4.28 - Demonstrate respect to laws relating to medical practice and Ethical code of conduct prescribed by MedicalCouncil of India and rules and regulations prescribed by it from time to time.

4.28.1: Demonstrate the conduct of doctor with patients as per the Code of Medical Ethics prescribed by NMC.

FM 4.29 - Demonstrate ability to communicate appropriately with media, public and doctors.

4.29.1: Demonstrate the skills of communication by a doctor with the public.
4.29.2: Demonstrate the skills of communication by a doctor with the media.
4.29.3: Demonstrate the skills of communication by a doctor with his/ her colleagues.

FM 4.30 - Demonstrate ability to conduct research in pursuance to guidelines or research ethics.

4.30.1: Prepare a research protocol for a study as per the ICMR guidelines.
4.30.2: Demonstrate the procedure of taking informed consent for conducting a research.

FORENSIC PSYCHIATRY

- **Lecture –1hr** **Assessment:** Written, Viva voce

FM 5.1 - Classify common mental illnesses including post-traumatic stress disorder (PTSD).

5.1.1: Define Forensic Psychiatry.
5.1.2: Define mentalillness.
5.1.3: Classify common mental illnesses.
5.1.4: Explain PTSD with examples.

FM 5.2 - Define, classify and describe delusions, hallucinations, illusion, lucid interval and obsessions with exemplification.

5.2.2: Describe types of delusions with examples for each and their medicolegal importance.
5.2.3: Define hallucination.
5.2.4: Describe types of hallucinations with examples and their medicolegal importance.
5.2.5: Define illusion with examples.
5.2.6: Define lucidinterval.
5.2.7: Describe the medicolegal importance of lucid interval.

5.2.8: Define Impulse.
5.2.9: Describe impulsive disorders with examples.
5.2.10: Describe the obsessive- compulsive disorders with examples.

- **Lecture –1hr** **Assessment:** Written, Viva voce

FM 5.3 - Describe Civil and Criminal responsibilities of a mentally ill person.

5.3.1: Describe Civil responsibility of a mentally illperson.
5.3.2: Describe Criminal responsibility of a mentally ill person.
5.3.3: Describe the Mc Naughten Rule, Durhams rule, Currens rule and critics about them.
5.3.4: Discuss the alternate hypotheses/ tests in relation to criminal responsibility.
5.3.5: Describe the criminal responsibility in Automatism, Somnam bulism, Somnolentia, Hypnotism and in toxication.

FM 5.4 - Differentiate between true insanity from feigned insanity.

5.4.1: Differentiate between true and feigned insanity.

FM 5.5 - Describe & discuss Delirium tremens.

5.5.1: Define deliriumtremens.
5.5.2: Describe the criminal responsibility in deliriumtremens.

- **LECTURE –1hr** **Assessment:** Written, Viva voce

FM 5.6 - Describe the Indian Mental Health Care Act, 2017 with special reference to admission, care and discharge of a mentally ill person.

5.6.1: Describe the important definitions mentioned in Mental Health Care Act, 2017 (MHCA).
5.6.2: Describe the Rights of mentally ill person including 'Advance directive' as per the MHCA.
5.6.3: Describe the guidelines to start and run a 'Mental health establishment'.
5.6.4: Discuss on 'Admission, Treatment and Discharge of mentally ill person' as described in the MHCA.
5.6.5: Discuss on punishment for violation of provisions of MHCA.

FORESNIC LABORATORY INVESTIGATION IN MEDICOLEGAL PRACTICE

- **LECTURE –1hr** **Assessment:**Written, Viva voce

FM 6.1 - Describe different types of specimen and tissues to be collected both in the living and dead: Body fluids (blood, urine, semen, faeces, saliva), Skin, Nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Finger printing. DescribeLocard's Exchange Principle.

6.1.1: Describe the importance of trace evidences in crime investigation.

6.1.2: Explain Locard's principle of exchange in crime investigation.
6.1.3: Enlist the various trace evidences seen in different type of crimes (living anddead).
6.1.4: Discuss the importance of DNA profiling in forensic investigation.
6.1.5: Enlist body tissue and body fluid suitable for DNAprofiling.
6.1.6: Discuss the importance of histopathology and cytology examinationin forensic investigation.
6.1.7: Discuss importance of blood grouping in forensic investigation.
6.1.8: Discuss significance of HLA typing in forensic investigation.

FM 6.2 - Describe the methods of sample collection, preservation, labeling, dispatch, and inter pretation of reports.

6.2.1: Describe method of collection, packing, labelling, sealing and dispatch of evidentiary materials to the laboratory.
6.2.2: Describe the method of interpretation of investigation reports like Chemical analysis, Histopathological examination, Microbiological examination etc.

- **SGD –1hr** **Assessment:** OSPE

FM 6.3 - Demonstrate professionalism while sending biological or trace evidences to Forensic Science lab, specifying the required tests to be carried out, objectives of preservation of evidences sent for examination, personal discussions on interpretation of findings

6.3.1: Draft requisition letter to be sent along with the samples preserved for laboratory analysis/ examination mentioning type of sample preserved, required tests to be done, and brief history of the case.
6.2.2: Demonstrate professionalism while sending the samples for analysis such as maintaining confidentiality and chain of custody.

EMERGING TECHNOLOGIES IN FORESNIC MEDICINE

- **SDL–2hrs** **Assessment:** Written, Viva voce

FM 7.1 Enumerate the indications and describe the principles and appropriate use for:-

- **DNA profiling, Facialre construction, Polygraph (LieDetector),**
- **Narcoanalysis,**
- **Brain Mapping,**
- **Digitalautopsy,**
- **Virtual Autopsy,**
- **Imaging technologies.**

7.1.1: Discuss principle, procedure and medico-legal significance of DNA profiling.
7.1.2: Describe principle and medico-legal significance of Facial reconstruction.
7.1.3: Enlist different Lie detectiontests.
7.1.4: Describe principle, procedure and medico-legal significance of Polygraph, hypnosis, Narcoanalysis and Brainmapping.
7.1.5: Describe principles of Virtual / Digitalautopsy.
7.1.6: Describe the uses of different Imaging technologies in crime investigation.

- **SGD–2hrs** **Assessment:** OSPE

FM 14.1 - Examine and prepare Medico-legal report of an injured person with different etiologies in asimulated/ supervised Environment.

14.1.1: Take an informed consent from the Patient / Guardian after explaining the importance of MLC registration in Medicolegal cases (Road traffic accident / Fall from height / Assault / Self infliction of injuries / Burns / Firearms etc).

14.1.2: Perform the clinical examination of an injured person (history taking, general physical examination, systemic examination, laboratory investigations) in a simulated/ supervised environment.

14.1.3: Prepare the wound certificate after documenting the clinical findings.
14.1.4: Prepare the police intimation

FM 14.4 - Conduct and prepare report of estimation of age of a person for medico-legal and other purposes & Prepare medico-legal report in asimulated/ supervised environment.

14.4.1: Explain the procedure of taking an informed consent from a person after explaining the Importance and procedure of age estimation in criminal cases (accused/ victim of a crime) and civil cases (joining employment, obtaining pension, etc).
14.4.2: Estimate the age of a person by using physical, dental and radiological findings.
14.4.3: Prepare the medicolegal report on the age of a person.

FM 14.10 - Demonstrate ability to identify & prepare medicolegal inference from specimens obtained from various types of injuries e.g. contusion, abrasion, laceration, firearm wounds, burns, head injury and fracture of bone.

14.10.1: Prepare a medicolegal inference from **photographs** showing various types of injuries/ lesions/ postmortem findings.
14.10.2: Prepare a medicolegal inference from **wet specimens** showing various types of injuries/ lesions/ postmortem findings.
14.10.3: Prepare medicolegal inference from **models** showing various types of injuries/ lesions/ postmortem findings.

- **SGD–2hrs** **Assessment:** OSPE

FM 14.11 - To identify & describe weapons of medicolegal importance which are commonly used e.g. lathi, knife, kripan, axe, gandasa, gupti, farsha, dagger, bhalla, razor, stick. Able to prepare report of the weapons brought by police and to give opinion regarding injuries present on the person as described in injury report/ PM report so as to connect weapon with the injuries. (Prepared injury report/ PM report must be provided to connect the weapon with the injuries).

14.11.1: Document the information before commencing the weapon examination.
14.11.2: Examine and document the details of weapons of medicolegal importance.
14.11.3: Prepare a report on the weapon examined.
14.11.4: Opine whether the injuries present in the wound certificate/ postmortem report are

possible to be caused by the weapon examined.

14.11.5: Explain the method of packing and handing over the weapon to concerned police (maintaining the chain of custody).

FM 14.12 - Describe the contents and structure of bullet and cartridges used & to provide medico-legal interpretation from these.

14.12.1: Describe the structure and contents of Rifled cartridge & prepare a medico-legal inference.

14.12.2: Describe the structure and contents of Shotgun cartridge & prepare a medico-legal inference.

- **SGD–1hr** **Assessment:** OSPE

FM 14.13 - To estimate the age of foetus by post-mortem examination.

14.13.1: Enumerate the objectives of foetal autopsy.

14.13.2: Describe the procedure of foetal autopsy.

14.13.3: Estimate the age of foetus by examination of ossification centres, anthropometric measurements, blood constituents, hair, nail, umbilical cord etc.

14.13.4: Draft a medicolegal report and opinion after foetal autopsy.

- **SGD–2hrs** **Assessment:** OSPE

14.14 - To examine & prepare report of an alleged accused in rape/ unnatural sexual offence in a simulated/ supervised environment.

14.14.1: Take an informed consent for examination of an accused of sexual offence.

14.14.2: Describe the procedure of examination and collection of evidentiary material for medical and medicolegal purposes.

14.14.3: Prepare a medicolegal report and opinion in analleged accused of sexual offence.

14.14.4: Explain the procedure of handing over the evidentiary material to the Investigating officer.

FM 14.15 - To examine and prepare medico-legal report of a victim of sexual offence/ unnatural sexual offence in a simulated/ supervised environment.

14.15.1: Take an informed consent for examination of a victim of sexual offence.

14.15.2: Describe the procedure of examination and collection of evidentiary material for medical and medicolegal purposes.

14.15.3: Prepare a medicolegal report and opinion in a victim of sexualoffence.

14.15.4: Explain the procedure of handing over the evidentiary material to the investigating officer.

- **SGD–2hrs** **Assessment:** OSPE

FM 14.16 - To examine & prepare medico-legal report of drunk person in a simulated/ supervised Environment.

14.16.1: Take an informed consent for examination of a person with alleged drunkenness.

14.16.2: Describe the procedure of examination and collection of evidentiary material for medicolegal purpose.

14.16.3: Prepare a medicolegal report and opinion in a drunkenness case.

14.16.4: Explain the procedure of handing over the evidentiary material to the investigating officer.

FM 14.18 - To examine & prepare medico-legal report of a person in police, judicial custody or referred by Court of Law and violation of human rights as requirement of NHRC, who has been brought for medical examination.

14.18.1: Explain the procedure of examination and preparing the medico-legal report of a person in police custody/ judicialcustody who has been brought for medical examination.
14.18.2: Explain the procedure of examination and preparing the medico-legal report of a person referred by Court of Law for medical examination.
14.18.3: Explain the procedure of examination and preparing the medico-legal report of a person with history of violation o fhuman rights as per requirement of NHRC (victim of torture, hunger strike, etc), who has been brought for medical examination.

- **SGD–1hr** **Assessment:** OSPE

FM 14.20 - To record and certify dying declaration in a simulated environment.

14.20,1: Certify compos mentis (sound mind) by examining higher mental functions before recording of dying declaration in a simulated environment.
14.20.2: Record dying declaration in a simulatedenvironment.
14.20.3: Assist the executive magistrate in recording of dying declaration in a simulated Environment.

FM 14.21 - To collect, preserve, seal and dispatch exhibits for DNA-Finger printing using various formats of different laboratories.

14.21.1: Describe the procedure involved in collecting, preserving, sealing and dispatching exhibits for DNA profiling from aliving individual.

14.21.2: Describe the procedure involved in collecting, preserving, sealing and dispatching exhibits for DNA profiling from a dead individual after conductingmedicolegalautopsy
14.21.3: Describe the procedure involved in collecting samples for DNA profiling depending on the laboratory policies of collecting blood on dry gauze or EDTA vacutainer or on FTA cards,

FM 14.22 - To give expert medical/ medico-legal evidence in Court of law.

14.22.1: Describe the conduct of a doctor in the witness box during the process of deposing expert medical/ medico-legalevidence in Court oflaw.
14.22.2: Describe the steps /procedure of recording of expert medical/ medico- legal evidence in Court of law with relation to Courtprocedures.
Total didactic lectures— 25
SGT/ Integrated learning/ Tutorials/ integrated learning hours- 45SDL – 5

Practicals

1	**Long case (any two)**	**Marks**	**Duration**
	Age estimation	**20x2= 40**	**40 minutes**
	Examination of case of drunkenness & issue a drunkenness certificate		
	Sexual offence – natural and unnatural		
	Post mortem certificate		
2	**Short cases (any two)**	**10x2= 20**	**30 minutes**
	Fetal examination		
	Weapon examination		
	Wound certificate		
	Skeletal remains		
	Blood grouping		
	Preservation of DNA material for analysis		
	Preservation of evidentiary materials in poisoning		
	Medical Certification of Cause of Death		
	Post mortem report and expert opinion		
	Spotters	**10X2= 20**	**20 minutes**

Detailed planning of practical assessment:

Exercise	***Assessment***
Wound certificate	Option-A: • A case scenario containing the details of a patient, history and part-task trainer with injuries will be given. • Student will be asked to draft a certificate as per the format based on above case details. Option-B: • A case scenario containing the details of a patient, history, multiple photographs of injuries with scale attached (printed in a single page) will be given. • Student will be asked to draft a certificate as per the format based on above case details.
Weapon examination	• A weapon related to above wound certificate will be given. • Student will be asked to examine and draft a report as per the format. • Evaluation will be based on the checklist.
Age certificate	• A case scenario containing the details of a patient, history, findings of General Physical Examination, Tooth eruption (picture of dentition) and X-ray film/s will be given. • Student will be asked to draft a certificate as per the format based on above case details.
Skeletal remains	• A case scenario containing the history and relevant findings of scene from where the bone/s were recovered will be given. • Student will be asked to examine the bone/s and draft a report as per the format.
Victim of rape	• A case scenario containing the details of a patient, history and findings related to sexual violence (victim of rape) will be given. • Student will be asked to draft a report in a printed modified format (as shown in annexure) based on case details and answer questions related to case scenario.
Accused of rape	• A case scenario containing the details of a patient, history and findings related to sexual violence (accused of rape) will be given. • Student will be asked to draft a report in a printed modified format (as

	shown in annexure) based on case details and answer questions related to case scenario.
Drunkenness certificate	• A case scenario containing the details of a patient, history and findings related to drunkenness will be given. • Student will be asked to draft a report as per the format based on case details and answer questions related to case scenario.
PM certificate	• A case scenario containing the details of a patient, history and postmortem findings will be given. • Student will be asked to draft the PM certificate and give opinion on cause of death, time since death and any other questions related to case scenario.
Hair, Semen, & other Biological fluids; Blood - Identification of species; Photographs / Specimens; Poisons; Histopathology Slides; Firearm cartridge	• It should contain 10 spotters. • Each spotter will be awarded maximum of one mark for correct responses. • Each spotter should be completed by 2 minutes duration. • Ideally spotters should contain applied type of questions related to content of the spotter. • Evaluation will be based on the marks allotted to structured questions.
Blood grouping	• A case scenario containing the details of a patient, history and relevant findings related to blood grouping will be given. • Student will be asked to determine the blood group of a given sample.
Preservation of evidentiary materials in poisoning	• A case scenario containing the details of a patient, history and clinical features of any poisoning will be given. • Student will be asked to list the various evidentiary materials to be preserved in such cases, write the labels for such preservation, and write the letters to FSL for analysis.
DNA material	• A case scenario containing the details of a patient, history and relevant findings related to DNA analysis will be given. • Student will be asked to list the various evidentiary materials to be preserved in such cases, write the labels for such preservation, and write the letters to FSL for analysis

Gestational age of foetus	• A case scenario containing the details of a patient, history and findings related to gestational age will be given. • Student will be asked to determine the gestational age and answer the questions related to case scenario.
MCCD	• A case scenario containing the details of a patient, history and clinical findings related to MCCD will be given. • Student will be asked to draft a certificate as per the format based on above case details.

Annexure
Integration topics

Integration: The teaching should be aligned and integrated horizontally and vertically recognizing the importance of medico-legal, ethical and toxicological issues as they relate to the practice of medicine.

Integration of Forensic Medicine with Other departments:

The suggested topics, competencies and the subjects/departments for integrated teaching are shown in below table.

Sl. No.	*Topic for integration*	*Subject [Competencies]*
1	Injuries / Trauma	Forensic Medicine [FM 3.3, 3.4, 3.8, 3.9, 3.10] General Surgery [SU 17.1, 17.2, 17.3]
2	Wound healing	General Surgery [SU 5.1, 5.2, 5.3, 5.4] Pathology [PA 5.1] Forensic Medicine [FM 3.6]
3	Regional injuries	Forensic Medicine [FM 3.11, 3.12] General Surgery [SU 17.4, 17.5, 17.6, 17.7, 17.8, 17.9, 17.10]
4	Burns	Forensic Medicine [FM 2.24, 2.25] General Surgery [SU 4.1, 4.2, 4.3, 4.4]
5	Organ transplantation	General Surgery [SU 13.1, 13.2, 13.3, 13.4] Ophthalmology [OP 4.9, 4.10] Forensic Medicine [FM 2.4]
6	Pregnancy and labour	Forensic Medicine [FM 3.19, 3.20] OBG [OG 6.1, 7.1]
7	Abortion	Forensic Medicine [FM 3.27, 3.28] OBG [OG 1.3, 9.1, 9.2, 20.1, 20.2]
8	PCPNDT Act	OBG [OG 20.3] Radiodiagnosis [RD 1.13] Forensic Medicine [FM 3.21]
9	Impotence and Sterility	Forensic Medicine [FM 3.22. 3.23, 3.24, 3.25. 3.26] Pharmacology [PH 1.40] OBG [OG 28.1, 28.2, 28.3, 28.4]
10	Psychiatric disorders	Psychiatry [PS 3.7, 3.8] Forensic Medicine [FM 5.1, 5.2, 5.3, 5.4, 5.5, 5.6]
11	General toxicology	Forensic Medicine [FM 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8] Pharmacology [PH 1.4, 1.5, 1.11] General Medicine [IM 21.1, 21.5, 21.6, 21.7, 21.8]

12	Insecticides	Forensic Medicine [FM 8.6] Pharmacology [PH 1.52] Community Medicine [CM 3.8]
13	Corrosives	Forensic Medicine [FM 9.1] General Medicine [IM 21.3]
14	Heavy metal poisoning	Forensic Medicine [FM 9.2, 9.3] Pharmacology [PH 1.53]
15	Plant poisons	General Medicine [IM 21.2] Forensic Medicine [FM 10.1]
16	Snake, scorpion, insect bites	Forensic Medicine [FM 11.1] General Medicine [IM 20.1, 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 20.8, 20.9]
17	Alcohol disorders	Pharmacology [PH 1.20, 1.21] Pathology [PA 12.1, 25.4] General Medicine [IM 5.5] Forensic Medicine [FM 9.4]
18	Drugs of abuse	Pharmacology [PH 1.22, 1.23] Forensic Medicine [FM 12.1] Psychiatry [PS 4.1, 4.2, 4.3, 4.4, 4.6, 4.7]

Sl no	Subject	Competency number	Competency	TL method	Assessment	Vertical Integration	Horizontal Integration
1	Anatomy	AN14.3	Describe the importance of ossification of lower end of femur & upper end of tibia	Lecture	Viva voce / Practicals	Forensic Medicine	-
2	Pharmacology	PH1.22	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)	Lecture / SGD	Written / Viva voce	Psychiatry	Forensic Medicine
3		PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	SGD	Short note / viva voce	-	Forensic Medicine
4	Radiodiagnosis	RD1.13	Describe the components of the PC & PNDT act and its medicolegal implications	Lecture / SGD		OBG, Forensic Medicine	-
5	Psychiatry	PS19.3	Describe and discuss the basic legal and ethical issues in psychiatry	Lecture / SGD	Written / Viva voce	Forensic Medicine, AETCOM	-
6	General Medicine	IM20.1	Enumerate the poisonous snakes of your area and describe the distinguishin	Lecture / SGD	Written / Viva voce	Forensic Medicine, Pharmacology	

			g marks of each				
7		M20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient with a snake bite in the field	DOAP session	Skill assessment /Written / Viva voce	Forensic Medicine	
8		M20.3	Describe the initial approach to the stabilisation of the patient who presents with snake bite	Lecture / SGD	Written / Viva voce	Forensic Medicine	
9		M20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite	Bedside clinic, DOAP session	Skill assessment	Forensic Medicine	
10		IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific	Lecture / SGD	Written / Viva voce	Forensic Medicine, Pharmacology	

			approach to detoxification				
11		IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy	Lecture / SGD	Written / Viva voce	Forensic Medicine, Pharmacology	
12		IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy	Lecture / SGD	Written / Viva voce	Forensic Medicine, Pharmacology	
13		IM21.5	Observe and describe the functions and role of a poison centre in suspected poisoning	DOAP Session	Document in log book	Forensic Medicine, Pharmacology	
14		IM21.6	Describe the medico legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico legal	Lecture / SGD / DOAP Session	Written / Viva voce / Skill assessment	Forensic Medicine, Pharmacology	

			report on a suspected poisoning				
15		IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy	DOAP Session	Skill assessment	Forensic Medicine, Pharmacology	
16		IM21.8	Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture	DOAP Session	Skill assessment	Forensic Medicine, Psychiatry	
17	OBG	OG1.3	Define and Discuss still birth and abortion	Lecture / SGD	Notes	Forensic Medicine	
18		OG9.2	Describe the steps and observe/ assist in the performance of an MTP evacuation	DOAP Session , Bedside clinic	Viva voce	Forensic Medicine	
19		OG20.1	Enumerate the indications and describe and discuss the legal aspects, indications, methods for first and second	Lecture / SGD	Written / Viva voce	Forensic Medicine	

			trimester MTP; complications and management of complications of medical termination of pregnancy				
20		OG20.2	In a simulated environment administer informed consent to a person wishing to undergo medical termination of pregnancy	DOAP Session	Skill assessment	Forensic Medicine	
21		OG20.3	Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC& PNDT) Act 1994 & its amendments	Lecture / SGD	Written / Viva voce	Forensic Medicine	
22	General Surgery	SU8.1	Describe the principles of Ethics as it pertains to surgery	Lecture / SGD	Written / Viva voce/ Skill assessment	Forensic Medicine, AETCOM	
23		SU8.2	Demonstrate Professionalism and empathy to the patient undergoing surgery	Lecture / SGD / DOAP Session	Written / Viva voce/ Skill assessment	Forensic Medicine, AETCOM	
24		SU8.3	Discuss Medico legal issues in surgical practice	Lecture / SGD	Written / Viva voce/ Skill assessment	Forensic Medicine, AETCOM	

University examination

Theory Examination

Theory examination consists of one paper and will have maximum marks of 100

Question paper pattern

Theory question paper pattern for 100 marks for a duration of 3 hours

MCQ (15 Direct & 5 Case Based):	20 X 1	= 20 marks
Long Answer Question: Direct/Case Based Essay:	2 X 15	= 30 marks
Short Answer Question (SAQ):	10 X 5	= 50 marks

Syllabus for Theory Paper

Unit	Topic	Competencies
1	General Information	FM 1.1-1.9
2	Forensic Pathology	FM 2.1-2.35
3	Clinical Forensic Medicine	FM 3.1- 3.13 and 3.29 - 3.33
4	Medical Jurisprudence (Medical Law and ethics)	FM 4.1-4.30
5	Forensic Psychiatry	FM 6.1-6.3
6	Forensic Laboratory investigation in medico-legal practice	FM 7.1
7	Emerging technologies in Forensic Medicine	FM 5.1-5.6
8	General Toxicology	FM 8.1-8.10
9	Chemical Toxicology	FM 9.1-9.6
10	Pharmaceutical Toxicology	FM 10.1
11	Bio-toxicology	FM 11.1
12	Socio-medical Toxicology	FM 12.1
13	Environmental Toxicology	FM 13.1-13.2

Topics and marks distribution matrix for PAPER

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightag ein %	LAQ	SAQ
1	General Information	FM 1.1-1.9	1	1-5		Y
2	Forensic Pathology	FM 2.1-2.35	2	2-17	Y	Y
3	Clinical Forensic Medicine	FM 3.1- 3.13 and 3.29 - 3.33	4	4-17	Y	Y
4	Medical Jurisprudence (Medical Law and ethics)	FM 4.1-4.30	2	2-17	Y	Y
5	Forensic Laboratory investigation in medico-legal practice	FM 6.1-6.3	1	1-6		Y
6	Emerging technologies in Forensic	FM 7.1	1	1-6		Y

	Medicine					
7	Forensic Psychiatry	FM 5.1-5.6	1	1-16	Y	Y
8	General Toxicology	FM 8.1-8.10	1	1-16	Y	Y
9	Chemical Toxicology	FM 9.1-9.6	2	2-17	Y	Y
10	Pharmaceutical Toxicology	FM 10.1	1	1-6		Y
11	Bio-toxicology	FM 11.1	1	1-16	Y	Y
12	Socio-medical Toxicology	FM 12.1	2	2-17	Y	Y
13	Environmental Toxicology	FM 13.1-13.2	1	1-6		Y

Practical Syllabus

S. No	Experiment/ Exercise	Competencies
1	Age Estimation Certificate	FM 14.4
2	Sexual offence certificate - Accused	FM 14.14
3	Sexual offence certificate- Survivor	FM 14.15
4	Drunkenness certificate	FM 14.16
5	Wound Certificate	FM 14.1
6	Medico legal Autopsy	FM 14.5, 14.18
7	MLR for poisoning case & preservation of biological samples	FM 14.2 & 14.3
8	Examination of skeletal remains	FM 14.9
9	Weapon Examination	FM 14.11
10	Fetal examination	FM 14.13
11	Examination of wounds	FM 14.10
12	Examination of firearm cartridges	FM 14.12
13	Trace evidence	FM 14.6, 14.7, 14.8
14	Toxicology Specimens	FM 14.17

Distribution of Marks for Practical Examinations: Practical examination will be conducted under heads of Practical Examination and Viva Voce.

Practical Examination	**(80 marks)**
Long Exercise – Age Estimation, Sexual offence – accused, sexual offence – survivor, Drunkenness certificate, post mortem certificate	2 x 20 = 40
Short exercise / OSPE - Wound certificate, Preservation ofbiological samples, Medico legal Autopsy, Skeletal remains	2 x 10 = 20
Spotters	2 x 10 = 20
Viva –Voce Examination	**(20 marks)**
General Information, Forensic Pathology	5
Clinical Forensic Medicine	5
Medical Jurisprudence , Forensic Psychiatry	5
Toxicology	5
TOTAL MARKS	**100 MARKS**

Annexure

Topics for Electives

- Disaster management
- Medicolegal aspects of healthcare / hospital administration
- Deposing evidence in a Court of Law
- Medicolegal aspects in management of emergency cases
- Forensic odontology
- Disaster victim identification
- Forensic anthropology
- Forensic psychiatry
- Forensic radiology
- Forensic toxicology
- Snake bite – species identification and management
- Crime scene examination
- Forensic ballistics

Annexure
Reference Books and Journals

Suggested references (as per Vancouver style): (Specification mentioned such as edition – subject to change with newer edition)

- **Basic references**

1) Reddy KSN, Murthy OP. The Essentials of Forensic Medicine and Toxicology. 34th edition, 2017. Jaypee Brothers Medical Publishers, New Delhi.
2) Pillay VV. Textbook of Forensic Medicine and Toxicology, 19th edition, 2019, Paras Medical Publishers, Hyderabad.
3) Karmakar RN. Forensic Medicine and Toxicology: Theory, Oral and Practical, 5th edition, 2015. Academic Publishers, Kolkata.
4) Nandy A. Principles of Forensic Medicine including Toxicology, 3rd edition, 2010, New Central Book Agency.
5) Subrahmanyam BV. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology, 8th edition, 2019, CBS Publishers.
6) Guharaj PV, Gupta SK. Forensic Medicine and Toxicology, 3rd edition, 2019, Universities Press (India) Private Ltd., Hyderabad.
7) Bardale R. Principles of Forensic Medicine & Toxicology, 2nd edition, 2016, Jaypee Brothers Medical Publishers, New Delhi.
8) Biswas G. Review of Forensic Medicine & Toxicology, 3rd edition, 2015, Jaypee Brothers Medical Publishers, New Delhi.
9) Vij K. Textbook of Forensic Medicine and Toxicology: Principles and Practice, 6th edition, 2014, Elsevier Ltd.
10) Ignatius PC. Forensic Medicine and Toxicology, 4th edition, 2019, Elsevier India.
11) Pillay VV. NACPFMT's Practical Medicolegal Manual: Medical Ethics, Clinical Forensics & Toxicology, 1st edition, 2019, Paras Medical Publishers, Hyderabad.
12) Bakkannavar SM. Forensic Medicine and Toxicology: Practical manual, 1st edition, 2018, Elsevier India.
13) Borah. Medical Ethics for Students and Doctors, 1st edition, 2014, Ahuja Publishers.

- **Advanced references (may also include journals/ web/ other electronic sources).**

1) Kannan K. Modi's Medical Jurisprudence and Toxicology, 26th edition, 2019, LexisNexis.
2) Karmakar RN. JB Mukherjee's Forensic Medicine and Toxicology, 2007, Academic Publishers.
3) Dogra TD, Rudra A. Lyon's Medical Jurisprudence and Toxicology. 11th edition (reprint), 2018. Delhi Law House, Delhi.
4) Saukko P, Knight B. Knight's Forensic Pathology. 4th edition. 2015, CRC Press
5) Pillay VV. Modern Medical Toxicology, 4th edition, 2013, Jaypee Brothers Medical Publishers Ltd., New Delhi.
6) Journal of Karnataka Medico-Legal Society.
7) Journal of South India Medico-Legal Association.
8) Journal of Indian Academy of Forensic Medicine.
9) Journal of Indian Society of Toxicology
10) Journal of Forensic and Legal Medicine
11) Journal of Forensic Sciences
12) Indian Journal of Medical Ethics

Annexure
Model Question papers

Department of Forensic Medicine & Toxicology

Forensic Medicine & Toxicology

Answer all questions, Illustrate your answer with diagrams wherever relevant

Max Marks 100 Max Time 3 hours

Long Essays ***(15x2= 30)***

1). A 34 year old police officer with no previous relevant medical history suffers from crampy abdominal pain, intermittent nausea, occasional vomiting and persistent diarrhea for several weeks in comnjuction with muscular weakness to his lower legs and exfoliative rash on paler surface of both hand and planta of both feet.

(2+2+1+3+2+3+2 = 15 Marks)

i. What is the cause of this mans apparent gastroenteritis and why?
ii. What are the other usual signs and symptoms ?
iii. What studies should be obtaines when considering the diagnosis
iv. What is the medicolegal importance
v. As a trating physician, what is your role in such case.

2). Define Injury? Classify mechanical injuries. Write in detail about definition, types, Ageing, Medico Legal importance and Differential diagnosis of Abrasion?

(2+2+1+3+2+3+2 = 15 Marks)

Write short notes on: (10 X 5 = 50 Marks)

3. Medico Legal Importance of Age.
4. Causes of death in Burns.
5. Post mortem finding of ante mortem hanging.
6. Hypothermia
7. Differences between incised wound and lacerated wound.
8. Causes of sudden death.
9. Tattoo marks.
10. Dying Declaration.
11. Dactylography.
12. Harvard Criteria of Death.

MCQ s 10 X2 = 20 MARKS

1). Chief Judicial magistrate can give sentence of imprisonment upto: ( )

a) 3 years
b) 5 years
c) 7 years
d) Life imprisonment

2. Dying deposition is done by: ( )

a) Doctor
b) Magistrate
c) Police
d) All

3. A lady died due to unnatural death within 7 years of her marriage, in India Inquest is done by ( )

a) Forensic Medicine expert b) Deputy Superintendent of Police
c) Sub-divisional Magistrate d) Coroner

4. When a group of muscles of a dead body were in a state of strong contraction immediately prior to death and remain so even after death is termed as: ( )

a) Gas stiffening b) Rigor mortis
c) Cadaveric spasm d) Cold stiffening

5. Ideal place to record the body temperature in dead body is:

a) Rectum ( )
b) Axilla
c) Mouth
d) Groin

6. Davidson body is to determine: ( )

a) Age
b) Sex
c) Race
d) All

7. Split laceration resembles: ( )

a) Incised wound
b) Abrasion
c) Gunshot
d) Contusion

8. Blister formation in burns is classified as: ( )

a) First degree b) Second degree superficial
c) Second degree deep d) Third degree

9. Hangman's fracture is : ( )

a) Spondylolisthesis of C2 over C3 b) Fracture of odontoid process
c) Fracture of transverse process d) Dislocation of C5

10. Chromosomal defect is seen in all expect: ( )

a) Intersex b) Concealed Sex
c) Pseudo hermaphrodite d) True hermaphrodite

11. All the following are characters of drug dependence, <u>except</u>:

a) Physical& psychological dependence. ( )
b) Repeated use of drug for non-medical reason.
c) It is taken by snuffing& injection only.
d) Mood changes& a state of well being.

12. Convulsions, coma associated with metabolic acidosis may be caused by toxicity with each of the following intoxication, <u>except</u>: ( )

a) Methanol.
b) Salilcylates.
c) Carbolic acid.
d) Amphetamine.

13. The manifestations of methanol toxicity include all of the following except:
   a) Diplopia. ( )
   b) Hiccough.
   c) Slurred speech.
   d) Occupational delirium.

14. Benzodiazepines can be used in treatment of the following cases except:
   a) Tetanus. ( )
   b) Insomnia.
   c) Schezphrenia.
   d) Anxiety.

15. Uncommon side-effects of tricyclic antidepressant therapy include which of the following?
   a) A dry mount. ( )
   b) Tremor.
   c) Constipation.
   d) Extra pyramidal movement disorders.

16.Oligemic Shock in cases of burn results from:
   a) Severe pain. ( )
   b) Loss of plasma from burnt area.
   c) Histamine release.
   d) Burn toxins.

17. The upper part of the body is congested or cyanosed compared to the lower part in case of:
   a) Traumatic asphyxia. ( )
   b) Overlying.
   c) Gagging.
   d) Mugging

18. A 6 years old female was found dead with a rope tightened around her neck. On examination, recent tears of the hymen and the anus were dectected.
   a) What is the possible cause and condition of death? ( )
   b) What is the PM picture of this type of fatality?
   c) Describe the tears detected and explain.\
   d) What are the medicolegal consequences of this crime?

19. After delivery, the fundal leval reaches the symphysis pubis by the end of:
   a) 1st week. ( )
   b) 2nd week.
   c) 3rd week.
   d) 4th week.

20. Maximum tissue destruction occurs with:
   a) Long jacketed bullet. ( )
   b) Dumdum bullet.
   c) Tapering end bullet.
   d) Short jacketed bullet.

Department of Ophthalmology

Goals and Objectives of the OphthalmologyCurriculum

Goals

The broad goal of the ophthalmology curriculum is to equip the IMG with sufficient knowledge, skills and attitude to diagnose and appropriately treat common ophthalmic disorders such asTrachoma,Acuteconjunctivitis,allergicconjunctivitis,xerosis,cornealulcer,iridocyclitis,cataract,glaucoma,ocularinjuryandsuddenlossofvision affecting our population.

Objectives

A) Knowledge

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

a. Describe the applied anatomy, physiology and biochemical attributes of the normal eye and adnexa.
b. Describe the pathophysiology, clinical features, and management of diseases of the eye, orbit andadnexa.
c. Demonstrate the ability to apply the knowledge in a clinicalsetting.

(B) Skills

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

a. Elicit a detailed clinical history and perform an ocular examination in both outpatient and ward setting.
b. Apply the elicited history and examination to arrive at correct diagnosis and plan treatment.
c. Perform minor diagnostic and therapeutic procedures in an emergency situation prior to referral to higher centers

C) Attitude and communicationskills

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

a. Communicate effectively with patients, their families and the public atlarge.
b. Communicate effectively with peers and teachers demonstrate the ability to work effectively with peers in ateam.
c. Demonstrate professional attributes of punctuality, accountability and respect for teachers andpeers.
d. Appreciate the issues of equity and social accountability while undergoing all clinical encounters

List of all Ophthalmology Competencies with their specific learning objectives, with suggested teaching-learning and assessment methods

	Competencies	Specific learning objectives	Teaching learning methods	When T-L will be done	Formative assessment	Summative assessment
Topic: Refractive errors						
OP1.1	Describe the physiology of vision	1.Anatomy of retina and fovea 2.Visual pathway 3.Mechanism of vision 4.Theories of colorvision	Lecture	6th term	MCQs at the end of lecture	Short essay/vivavoce

OP1.2	Define, classify and describe the types and methods of correcting refractive errors.	1.Definition of myopia, hypermetropia and astigmatism 2.Describe the Types of myopia 3.Describe Types of hypermetropia4.Describe Types of astigmatism 5.Enumerate the Treatment options for myopia 6.Enumerate the retinal findings in myopia 7.Enumerate the Treatment options of hypermetropia 8.Describe the treatment of astigmatism 9.List the indications and advantages, complications of contact lenses	Lectures Tutorial to reinforce learning and prevent decay	6th term	MCQs/SAQ's at the end of lecture or a group of lectures	Essay/SAQ/viva voce
OP1.3	Demonstrate the steps in performing	1.Assess visual acuity using Snellen's chart	DOAP session	1st posting	Skill assessment	End of 1st posting – OSCE

	the visual acuity assessment for distance vision, nearvision, colourvision, the pin hole test and the menace and blink reflexes	2.Demonstrate use of pin hole in visual acuitytesting and interpret the findings 3.Assess near vision using Times new Roman charts 4.Elicit the blink reflex and menace reflex in an adult patient 5.Assess color vision using Ishihara's color plates	during clinical postin g		during clinics Logbook	or short case
OP1.4	Enumerate the indications and describe the principles of refractive surgery	1.Enumerate the types of refractive surgery 2.Enumerate the indication for refractive surgery 3.Briefly describe the principle of LASIK	Lecture	6th term	MCQ's/SAQ / Viva voce at the end of lecture	Short essay/vivavoce

OP1.5	Define, enumerate the types and the mechanism by which strabismus leads to Amblyopia	1.Define amblyopia 2.Enumerate the types of amblyopia 3.Describe briefly the mechanism of strabmismic Amblyopia	Lecture	6th term	MCQ's/SAQ / Viva voce at the end of lectur e	Short essay/vivavoce
Topic: Lids and Adnexa, Orbit Number of Competencies: (08)						
OP2.1	Enumerate the causes, describe and discuss the aetiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa	1.Describe the etiology, clinical features of common conditions of the lid and adnexa including Hordeolum externum / internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag, lagophthalmos	Lecture, Small group discussion like tutorials, PBL orCBL	6th term	MCQs/SAQ / Viva voce	Short essay/vivavoce

OP2.2	Demonstrate the symptoms & clinical signs of conditions enumerated in OP2.1	1.Elicit signs and symptoms of common eyelid conditions 2.Diagnose accurately common lid conditions based on the elicited signs and symptoms 3.Accurately prescribe the local medication for common lid conditions 4.Counsel a patient with lagophthalmos the need for tarsorraphy	DOAP session during clinical posting	1st clinical posting	Skill Assessment during clinics Logbook	End of 1st posting – OSCE or short case
OP2.3	Demonstrate under supervision clinical procedures performed in the lid including: bells phenomenon, assessment of entropion/ectropion, perform the regurgitation test of lacrimal sac. Massage technique in cong. dacryocystitis, and trichiatic cilia removal by epilation	1.Elicit Bell's phenomenon perform lacrimal sac regurgitation test 2.Demonstrate the correct technique of lacrimal sac massage for congenital nasolacrimal duct obstruction to the mother	DOAP session during clinical posting	1st clinical posting	Skill Assessment during clinics Logbook	End od 1st posting – OSCE or short case
OP2.4	Describe the aetiology, clinical presentation.	1.Discuss the etiopathogenesis of orbital cellulitis 2.Describe the clinical features of OC	Lecture, Small group discussion	7th term	MCQs/ SAQ/ Viva voce	Short essay/vivavoce

	Discuss the complications and management of orbital cellulitis	3.Discuss the management of OC				
OP2.5	Describe the clinical features on ocular examination and management of a patient with cavernous sinus Thrombosis	1.Enumerate the predisposing factors for cavernous sinus thrombosis 2.Compare and contrast clinical features of OC and cavernous sinus thrombosis Describe the management of CST	Lecture	7th term	MCQs/SAQ/ Viva voce	Short essay/vivavoce
OP2.6	Enumerate the causes and describe the differentiating features, and clinical features and management of proptosis	1.Discuss causes of unilateral proptosis Enumerate the causes of bilateral proptosis	Lecture, SGD	7th term	MCQs/ SAQ/ Viva voce	Short essay/vivavoce
OP2.7	Classify the various types of orbital tumours. Differentiate the symptoms and signs of the presentation of various types of ocular tumours		Lecture, SGD	7^{th} term	Written/ Viva voce	Short essay/vivavoce
OP2.8	List the investigations helpful in diagnosis of orbital		Lecture, SGD	7th term	Written/ Viva voce	Short essay/vivavoce

	tumours. Enumerate the indications for appropriate referral					
Topic: Conjunctiva Number of Competencies (09)						
OP3.1	Elicit document and present an appropriate history in a patient presenting with a “red eye” including congestion, discharge, pain	1.Elicit appropriate history in a patient presenting with "Red eye" 2.Perform ocular examination including vision assessment, pupil examination in a patient with "red eye" 3.Counsel a patient with conjunctivitis on appropriate hand hygiene to prevent spread of infection	DOAP session during clinical posting Logbook	1st clinical posting	Skill assessment Logbook	End of 1st posting – OSCE or short case

OP3.2	Demonstrate document and present the correct method of examination of a “red eye” including vision assessment, corneal lustre, pupil abnormality, ciliary Tenderness	1.Demonstrate correct method of digital tonometry 2.Discuss the differential diagnosis of "red eye"	DOAP session	1st clinical posting	Skill assessment Logbook	End of 1st posting – OSCE or short case
OP3.3	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications. and	1.Describe the clinical features of ophthalmia neonatorum according to the pathogenetic agent 2.Describe the management of Ophthalmia neonatorum 3.Compare the clinical features of	Lecture	6th term	SAQ Viva voce	Essay/SAQ

	management of various causes of conjunctivitis	conjunctivitis of different aetiologies3.Describe the management of bacterial conjunctivitis				
OP3.4	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications, and management of trachoma.	1.Describe the clinical features of Trachoma 2.Describe the management of Trachoma 3.Describe the WHO classification of Trachoma 4.Discuss the National programme for control of blindness due to Trachoma	Lecture	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP3.5	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of vernal catarrh	1.Describe the clinical features of vernal catarrh 2.How will you manage a patient with vernal catarrh	Lecture,	6therm	Written/ Viva voce	Essay/SAQ

OP3.6	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of Pterygium	1.Elicit appropriate history and clinical signs of pterygium 2.Enumerate causes of decreased vision due to pterygium 3.Describe the different surgical options for pterygium	Lecture	6th term	Skill assessment SAQs	Essay/SAQ
OP3.7	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of symblepharon	Enumerate causes and complications of symblepharon	Lecture	6th term	MCQs/SAQ/ Viva voce	SAQ

OP3.8	Demonstrate correct technique of removal of foreign body from the eye in a simulated environment	Demonstrate correct technique of removal of foreign body from the eye in a simulated environment	DOAP session during clinical posting Logbook	1st clinical posting	Skill assessment Logbook	
OP3.9	Demonstrate the correct technique of instillation of eye drops in a simulated environment	Demonstrate the correct technique of instillation of eye drops in a simulated environment	DOAP session during clinical posting Logbook	1st clinical posting	Skill assessment Logbook	
OP3.10	Demonstrate the correct technique of applying an eye pad	Demonstrate the correct technique of applying an eye pad	DOAP session during clinical posting Logbook	1st clinical posting	Skill assessment Logbook	
Topic: Cornea Number of Competencies: (10)						
OP4.1	Enumerate, describe and discuss the types and causes ofcorneal ulceration	1.Discuss the pathogenesis of corneal ulcer 2.Discuss the clinical features based onetiological agent 3.Elicit signs and symptoms of corneal ulcer	Lecture	6th term	MCQs/SAQ/ Viva voce Skillassess ment	Essay/SAQ

		4.Describe the general principles of management of corneal ulcers				

OP4.2	Enumerate and discuss the differential diagnosis of infective keratitis	1.Enumerate the causes of infective keratitis 2.Compare and contrast the clinical features of bacterial and fungal corneal ulcer	Lecture, SGD	6th term	Written/ Viva voce	Essay/SAQ
OP4.3	Enumerate the causes of corneal Edema	Enumerate the causes of corneal edema	Lecture	6th term	Written/ Viva voce	SAQ
OP4.4	Enumerate the causes and discuss the management of dry eye	1.Describe briefly the Physiology of Tear film 2.Describe briefly the tests done to detect dry eyes 3.Enumerate different modalities of treatment of dry eyes	Lecture, SGD	6th term	SAQs/ Viva voce	Essay/SAQ
OP4.5	Enumerate the causes of corneal blindness	Enumerate the causes of corneal blindness	Lecture, SGD	6th term	Written/ Viva voce	SAQ
OP4.6	Enumerate the indications and the types of keratoplasty	Enumerate the indications and the types of keratoplasty	Lecture, SGD	6th term	Viva voce	Essay/SAQ

OP4.7	Enumerate the indications and describe the methods of tarsorraphy	Enumerate the indications and describe the methods of tarsorraphy	Lecture	6th term	Written/ Viva voce	Essay/SAQ

OP4.8	Demonstrate technique of removal of foreign body in the cornea in a simulated environment	Demonstrate technique of removal of foreign body in the cornea in a simulated environment	DOAP during clinical posting	6th term	Logbook	SAQ
OP4.9	Describe and discuss the importance and protocols involved in eye donation and eye banking	1.Enumerate the contraindications for eye donation 2.List all methods of corneal button storage	Lecture	6th term	Written/ Viva voce	Essay/SAQ
OP4.10	Counsel patients and family about eye donation in a simulated environment	Counsel patients and family about eye donation in a simulated environment	DOAP during clinical posting	1st clinical posting	Logbook	
Topic: Sclera Number of competencies: (02)						

OP5.1	Define, enumerate and describe the aetiology,associated systemic conditions, clinical features complications indications for referral and management of episcleritis	1.Define scleritis 2.Discuss the etiology of scleritis	Lecture, SGD	6th term	Written/ Viva voce	Essay/SAQ
OP5.2	Define, enumerate,	1.Describe the clinical features, and	Lecture,	6th	Written/ Viva	Essay/SAQ

	and describe the aetiology,associated systemic conditions, clinical features, complications, indications for referral and management of scleritis	treatment of scleritis 2.Enumerate the complications of scleritis	SGD	term	voce	
Topic: Iris and Anterior chamber Number of Competencies (10)						

OP6.1	Describe clinical signs of intraocular inflammation and enumerate the features that distinguish granulomatous from non-granulomatous inflammation. Identify acute iridocyclitis from chronic condition	1.Describe the etiology, clinical features of iridocyclitis 2.Describe the distinguishing features of granulomatous and non-granulomatous iridocyclitis 3.What is the etiology of granulomatous iridocyclitis	Lecture, SGD	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP6.2	Identify and distinguish acute iridocyclitis from chronic iridocyclitis	1.Define acute and chronic iridocyclitis Mention the differentiating features between acute and chronic iridocyclitis	Lecture, SGD	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP6.3	Enumerate systemic conditions that can present as	1.Enumerate the systemic conditions associated with iridocyclitis 2.Enumerate the other ocular	Lecture, SGD	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ

	iridocyclitis and describe their ocular manifestations	manifestations				
OP6.4	Describe and distinguish hyphema and hypopyon	1.What is hyphema and what are its causes 2.How will you manage a case of hyphema 3.What is a hypopyon and what are its causes	Lecture	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP6.5	Describe and discuss the angle of the anterior chamber and itsclinical Correlates	1.Describe the anatomy of the angle of the anterior chamber 2.How will you grade the angle of the anterior chamber	Lecture	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP6.6	Identify and demonstrate the clinical features and distinguish and diagnose common clinical conditions affecting the anterior chamber	1.Describe the clinical features of Primary open angle glaucoma 2.Describe the management of POAG What is Trabeculectomy and describe its steps 3.Describe the clinical features and management of Primary angle closure glaucoma 4.Describe the clinical features and management of congenital glaucoma	Lecture, SGD	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP6.7	Enumerate and discuss the aetiology, the clinical distinguishing features of shallow	1.What are the causes of shallow and deep anterior chamber 2.What is gonioscopy	Lecture, SGD	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ

	and deep anterior chamber. Choose appropriate investigations for patients with above conditions of the anterior chamber	3.What is perimetry and what are the visual field changes in glaucoma What is tonometry and how is it measured 4.Demonstrate digital tonometry				
OP6.8	Enumerate and choose the appropriate investigation for patients with conditions affecting the Uvea	Describe the investigations in a patient with iridocyclitis	Lecture, SGD	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP6.9	Choose the correct local and systemic therapy for conditions of the anterior chamber and enumerate their indications, adverse events and interactions	1.Describe the management of a patient with iridocyclitis 2.Enumerate the side effects of steroid use 3.Discuss various routes of administration of steroids in ocular disease	Lecture, SGD	6th term	MCQs/SAQ/ Viva voce	Essay/SAQ

OP6.10	Counsel patients with conditions of the iris and anterior chamber about their diagnosis, therapy and prognosis in an empathetic manner in a simulated environment	Counsel a patient with uveitis regarding the need for compliance	DOAP during clinical postin g	1st posting	OSCE	OSCE/ short case examination
Topic: Lens Number of Competencies: (06)						
OP7.1	Describe the surgical anatomy and the metabolism of the lens	1.Describe the anatomy of the lens 2.Describe the metabolism of the lens	Lecture	6th term	MCQs/SAQ / Viva voce	Essay/SAQ

OP7.2	Describe and discuss the etio-pathogenesis, stages of maturation and complications of cataract	1.Describe the etiopathogenesis of senile cataract 2.Stages of cortical and nuclear cataract Complications of senile cataract 3.Discuss etiology and morphology of complicated cataract	Lecture/SGD	6th term	MCQs/SAQ / Viva voce	Essay/SAQ
OP7.3	Demonstrate the correct technique of ocular examination in a patient with a cataract	1.Differentiate between immature, mature and hypermature cataract 2.Demonstrate the presence of iris shadow 3.Macular function tests	DOAP during clinical postin g	1st posting	OSCE	OSCE/short case examination
OP7.4	Enumerate the types of cataract surgery and describe the steps,intra-operative	1.Describe the steps of cataract surgery Mention the intraoperative complications	SGD/Lecture	6th term	MCQs/SAQ / Viva voce	Essay/SAQ

	and post-operative complications of extracapsular cataract extraction surgery.	Mention the early and late postoperative complications Treatment of After cataract				
OP7.5	To participate in the team for cataract surgery	1.Discuss the preoperative preparation of a patient for cataract surgery 2.Experience a walkthrough of a single patient from advising for surgery till discharge of the patient	Learner-doctor	2nd posting	OSCE	OSCE/short case examination
OP7.6	Administer informed consent and counsel patients for cataract surgery in a simulated environment	1.Administer informed consent and counsel patients for cataract surgery in a simulated environment	DOAP during clinical posting	2nd posting	OSCE	OSCE/short case examination
Topic: Retina & optic Nerve Number of Competencies (05)						

OP8.1	Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina	1.Describe the etiology, pathology, clinical features, and management of Retinal vein occlusions 2.Describe the etiology, pathology, clinical features, and management of Retinal artery occlusions 3.What is cherry red spot and what are its causes	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP8.2	Enumerate the indications for laser therapy in the treatment of retinal diseases (including retinal detachment,retinal degenerations, diabetic retinopathy & hypertensive retinopathy)	1.What is the pathogenesis of diabetic retinopathy 2.What are the stages of diabetic retinopathy and maculopathy 3.What is the managemnt for each of the stages 4.What are the grades of hypertensive retinopathy? 5.What is Keith Wagner classification 6.Enumerate the types of retinal detachment and its management 7.What is age related macular degeneration? 8.What are the clinical features and management	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ

OP8.3	Demonstrate the correct technique of a fundus examination and describe and distinguish the funduscopic features in a normal condition and in conditions causing an abnormal retinal exam	1.Demonstrate the correct technique of using a direct ophthalmoscope. 2.Describe a normal fundus with the help of a diagram	DOAP in skills lab	6-7th term	OSCE	
OP8.4	Enumerate and discuss treatment modalities in management of diseases of the retina	1.Enumerate the various disease conditions of the retina 2.Enumerate the treatment modalities of the above conditions	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP8.5	Describe and discuss the correlative anatomy, aetiology, clinical manifestations, diagnostic tests, imaging and management of diseases of the optic nerve and visual pathway	1.Describe the anatomy of the Optic nerve 2.Describe the clinical features, investigations and management ofOptic neuritis 3.Describe the clinical features, stages and fundus picture, investigations, and management of Papilledema 4.Describe the clinical features, classification, investigations and management of Optic Atrophy 5.Describe the anatomy of the	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ

		visual pathway 6.Describe the visual field defects occurring in diseases affecting the visual pathway 7.Describe the pupillary pathway 8.Describe the clinical features of the various pupillary abnormalities- Hutchisons pupil, ARP, Adies Pupil, Marcus Gunn Pupil 9.Demonstrate swinging flashlight test				

PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae, and complications of retinoblastoma	1.Discuss the pathogenesis, histopathology and genetics of retinoblastoma 2.Enumerate the causes of leukocoria Describe the staging and clinical features of retinoblastoma 3.Discuss the treatment options for the various stages of retinoblastoma	Lecture/SGD	7^{th} term	MCQs/SAQ/ Viva voce	Essay/SAQ

Topic: Miscellaneous Number of Competencies (05) Number of procedures that require certification: (01)						
OP9.1	Demonstrate the correct technique to examine extra ocular movements (Uniocular& Binocular)	1.List the extraocular muscles, their insertions, and their actions 2.Demonstrate the correct technique to examine extra ocular movements (Uniocular& Binocular)	DOAP during clinical postin g	1st &2ndpo sting	Logbook	
OP9.2	Classify, enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus	1.List the types of strabismus 2.What are the differences between Paralytic squint and Concomitant squint 3.Enumerate and demonstrate the tests done in a case of Squint (Hirschberg's test, Head posture) 4.List the conditions in which a patient with strabismus has to be referred	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP9.2	Describe the role of refractive error correction in a patient with headache and enumerate the indications for referral	1.Enumerate the causes of headache and list the differentiating features to suggest an ocular cause 2.List the type of headaches which require referral	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP9.3	Describe the role of refractive error correction in a patient withheadache and enumerate the indications for referral		Lecture/ SGD	7thterm	Viva voce	

OP9.4	Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020)	1.What are the causes of avoidable blindness 2.What is NPCB. What are the diseases included in this 3.What is vision 2020 4.Define legal blindness, social blindness and economical blindness	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
OP9.5	Describe the evaluation andenumerate the steps involved in the stabilisation, initial management and indication for referral in a patient withocular injury	1.List the types of ocular injuries 2.List the effects of blunt trauma to the eye 3.List the steps of initial management of chemical injuries 4.Demonstrate the correct method of eye irrigation 5.List the steps of initial management of an open globe injury	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ

Integration – Anatomy						
AN30.5	Explain effect of pituitary tumours on visual pathway	1.Describe the visual field changes in pituitary tumors 2.Discuss the anatomical basis of VF changes in pituitary lesions	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
AN31.3	Describe anatomical basis of Horner's syndrome	1.What is Horner's syndrome? 2.Differentiate acquired from congenital HS 3.Describe the anatomical basis for HS due to various causes	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
AN31.5	Explain the anatomical basis of oculomotor, trochlear and abducentpalsy	1.Describe the anatomy of the 3rd,4th and 6th cranial nerves 2.Enumerate the causes of 3rd,4th and 6th cranial nerve palsies	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
AN41.1	Describe & demonstrate parts and layers of eyeball		Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
AN41.2	Describe the anatomical aspects of cataract, glaucoma & central		Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
AN41.3	Describe the position, nerve supply and actions of intraocular muscles		Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ

Integration- Physiology						
PY10.17	Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, Refractive errors, colour blindness, Physiology of pupil andlight Reflex	1.Describe the theories of color vision 2.Describe the pupillary pathway 3.Describe the clinical features of the various pupillary abnormalities	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
PY10.18	Describe and discuss the physiological basis of lesion in visual pathway	1.Draw a neat, labelled diagram of the visual pathway 2.Describe the field defects of lesions affecting the visual pathway	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
PY10.19	Describe and discuss auditory & visual evoke potentials		Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
PY10.20	Demonstrate testing of visual acuity, colour and field of vision in a simulated environment	Assess visual acuity, colour vision and visual field in a simulated patient	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ
PH1.58	Describe drugs used	Describe the mechanism of action,	Lecture/SGD	7th	MCQs/SAQ/	Essay/SAQ

	in Ocular disorders	dosage, duration, modes of delivery and side effects of the following groups of drugs used in Ophthalmology Anti-glaucoma drugs, antibiotics, antifungals, mydriatic and cycloplegics, steroids		term	Viva voce	
IM24.15	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly	List the causes of acute painless loss of vision in the elderly and their systemic causes List the causes of acute painful loss of vision in the elderly and their systemic causes Discuss the systemic investigations that is required in acute loss of vision in the elderly Discuss the treatment of acute loss of vision in the elderly	Lecture/SGD	7th term	MCQs/SAQ/ Viva voce	Essay/SAQ

		THIRD PHASE / FIRST YEAR PART -1 CLINICAL POSTING 2022		
Sr.No.	**DAYS**	**Competency**		**TOPICS**
1	DAY 1	OP1.3	Demonstratethestepsinperformingthevisualacuityassessmentfor distancevision,nearvision,colourvision,thepinholetestandthemenace and blinkreflexes	HistorytakingandOcular examination
2	DAY 2	OP1.3	Demonstratethestepsinperformingthevisualacuityassessmentfordistancevision,nearvision,colourvision,thepinholetestandthemenace and blink reflexes	HistorytakingandOcular examination
3	DAY 3	OP3.1	Elicitdocumentandpresentanappropriatehistoryinapatientpresenting with a “red eye” including congestion, discharge, pain	Ocular examination
4	DAY 4	OP3.2	Demonstratedocumentandpresentthecorrectmethodofexaminationof a“redeye”includingvisionassessment,corneallustre,pupilabnormality, ciliary tenderness.	Ocular examination
5	DAY 5	OP 7.3	Demonstratethecorrecttechniqueofocularexaminationinapatientwith acataract	Cataract examination(Bedside Clinic)
6	DAY 6	OP 7.3	Demonstratethecorrecttechniqueofocularexaminationinapatientwith acataract	Cataract examination(Bedside Clinic)
7	DAY 7	OP 7.3	Demonstratethecorrecttechniqueofocularexaminationinapatientwith acataract	Cataract case presentation (Bedside Clinic 1)
8	DAY 8	OP7.4	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeandpost-operativecomplicationsofextracapsularcataract extraction surgery.	Preoperative assessment at cataract
9	DAY 9	OP7.4 OP7.5 OP7.6	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeandpost-operativecomplicationsofextracapsularcataract extractionsurgeryandToparticipateintheteamforcataractsurgeryand Administerinformedconsentandcounselpatientsforcataractsurgeryina simulated environment	Cataract surgeries

10	DAY 10	OP7.4 OP7.5 OP7.6	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeandpost-operativecomplicationsofextracapsularcataract extraction surgery and To participate in the team for cataract surgery and Administer informed consent and counsel patients for cataract surgery in a simulated environment	Cataract surgeries
11	DAY 11	OP7.4	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operative and post-operative complications of extracapsular cataract extractionsurgery.	Intraopandpost op complications
12	DAY 12	OP 7.3	Demonstrate the correct technique of ocular examination in a patient with acataract	Cataract case presentation (Bedside Clinic 2)
13	DAY 13	OP 7.3 OP2.2	Demonstrate the correct technique of ocular examination in a patient with acataractandDemonstratethesymptoms&clinicalsignsofcommon conditions of the lid and adnexa including Hordeolumexternum/ internum, blepharitis,preseptalcellulitis,dacryocystitis,hemangioma,dermoid, ptosis, entropion, lid lag, lagopthalmos	Cataract case presentation With pterygium/dacrocystitis(Bedside Clinic 3)
14	DAY 14	OP 7.3	Demonstrate the correct technique of ocular examination in a patient with acataract	Cataract case presentation With diabetes/hypertension (Bedside Clinic 4)
15	DAY 15	OP 7.3	Demonstrate the correct technique of ocular examination in a patient with acataract	Cataract case presentation With glaucoma (Bedside Clinic 5)

16	DAY 16	OP3.2	Demonstrate document and present the correct method of examination of a “red eye” including vision assessment, corneal lustre, pupil abnormality, ciliary tenderness.	Uveitis case presentation (Bedside Clinic 6)
17	DAY 17	OP3.2	Demonstrate document and present the correct method of examination of a “red eye” including vision assessment, corneal lustre, pupil abnormality, ciliary tenderness.	Corneal ulcer case presentation (Bedside Clinic 7)

18	DAY 18	OP3.8 OP4.8	Demonstratecorrecttechniqueofremovalofforeignbodyfromtheeyein a simulated environment And Demonstrate technique of removal of foreignbodyinthecorneainasimulatedenvironment	Foreign body removal (OPD clinic)
19	DAY 19	OP6.6	Identifyanddemonstratetheclinicalfeaturesanddistinguishanddiagnose commonclinicalconditionsaffectingtheanteriorchamber	Case presentation of glaucoma (Bedside Clinic 8)
20	DAY 20	OP6.6	Identifyanddemonstratetheclinicalfeaturesanddistinguishanddiagnose commonclinicalconditionsaffectingtheanteriorchamber	Cornealopacity(OPDclinic)
21	DAY 21	OP6.6	Identifyanddemonstratetheclinicalfeaturesanddistinguishanddiagnose commonclinicalconditionsaffectingtheanteriorchamber	Pterygium and chalazion(OPD clinic)
22	DAY 22	OP3.9	Demonstratethecorrecttechniqueofinstillationofeyedropsinsimulated environment	Ophthalmic therapeutics

23	DAY 23	OP7.4	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeandpost-operativecomplicationsofextracapsularcataract extraction surgery.	Instrumentsusedincataract surgery
24	DAY 24	OP7.4	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeandpost-operativecomplicationsofextracapsularcataract extraction surgery.	Instruments used in other surgeries
25	DAY 25	OP1.3	Demonstratethestepsinperformingthevisualacuityassessmentfordistancevision,nearvision,colourvision,thepinholetestandthemenace and blink reflexes	Optics and Refraction
26	DAY 26			Assessment

Third phase /first year part small group teaching

(CBME-2019 BATCH) [2022] (31 LECTURES OF SGT)

SR.NO		COMPETANCY	TOPIC	INTEGRATION
			Topic: Visual AcuityAssessment	
1		OP1.3	Demonstratethestepsinperformingthevisualacuityassessmentfordistance vision,nearvision,colourvision,thepinholetestandthemenaceandblink reflexes	
2		OP1.4	Enumerate the indications and describe the principles of refractive surgery	
3		OP1.5	Define,enumeratethetypesandthemechanismbywhichstrabismusleadsto amblyopia	

			Topic: Lids and Adnexa, Orbit	
4		OP2.2	Demonstratethesymptoms&clinicalsignsofconditionsenumeratedinOP2.1	
5		OP2.2	Demonstratethesymptoms&clinicalsignsofconditionsenumeratedinOP2.1	
6		OP2.3	Demonstrateundersupervisionclinicalproceduresperformedinthelidincluding: bellsphenomenon,assessmentofentropion/ectropion,performtheregurgitation testoflacrimalsac.massagetechniqueincong.dacryocystitis,andtrichiaticcilia removal by epilation	
7		OP2.8	List the investigations helpful in diagnosis of orbital tumors.Enumerate the indications for appropriate referral	
			Topic: Conjunctiva	
8		OP3.1	Elicitdocumentandpresentanappropriatehistoryinapatientpresentingwitha "red eye" including congestion, discharge, pain	
9		OP3.2	Demonstratedocumentandpresentthecorrectmethodofexaminationofa"red eye"includingvisionassessment,corneallustre,pupilabnormality,ciliary tenderness.	
10		**OP3.4**	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of trachoma.	
11		**OP3.4**	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of trachoma.	

12		**OP3.6**	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of pterygium	
13		**OP3.7**	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of symblepharon	
14		**OP3.8**	Demonstrate correct technique of removal of foreign body from the eye in a simulated environment	
15		**OP3.9**	Demonstrate the correct technique of instillation of eye drops in simulated environment	
			Topic : Cornea	
16		**OP4.1**	Enumerate, describe and discuss the types and causes of corneal ulceration	
17		**OP4.2**	Enumerate and discuss the differential diagnosis of infective keratitis	
18		**OP4.3**	Enumerate the causes of corneal edema	
19		**OP4.7**	Enumerate the indications and describe the methods of tarsorraphy	
20		**OP4.8**	Demonstrate technique of removal of foreign body in the cornea in a simulated environment	
21		**OP4.9**	Describe and discuss the importance and protocols involved in eye donation and eye banking	
22		**OP4.10**	Counsel patients and family about eye donation in a simulated environment	
			Topic: Iris and Anterior Chamber	
23		**OP6.1**	Describeclinicalsignsofintraocularinflammationandenumeratethefeaturesthat distinguishgranulomatousfromnon-granulomatousinflammation.Identifyacute iridocyclitis from chronic condition	

24		**OP6.2**	Identify and distinguish acute iridocyclitis from chronic iridocyclitis	
25		**OP6.3**	Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations	
26		**OP6.4**	Describe and distinguish hyphema and hypopyon	
27		**OP6.5**	Describe and discuss the angle of the anterior chamber and its clinical correlates	
28		**OP6.6**	Identify and demonstrate the clinical features and distinguish and diagnose common clinical conditions affecting the anterior chamber	
29		**OP6.7**	Enumerateanddiscusstheaetiology,theclinicaldistinguishingfeaturesofvariousglaucomasassociatedwithshallowanddeepanteriorchamber.Chooseappropriate investigations and treatment for patients with above conditions	
30		**OP6.8**	Enumerate and choose the appropriate investigation for patients with conditions affecting the Uvea	
31		**OP6.9**	Choosethecorrectlocalandsystemictherapyforconditionsoftheanterior chamberandenumeratetheirindications,adverseeventsandinteractions	
SR.NO		**COMPETANCY**	**TOPIC**	**INTEGRATION**
			Topic: Lens	

32		OP 7.3	Demonstratethecorrecttechniqueofocularexaminationinapatientwitha cataract (PartI)	
33		OP7.3	Demonstratethecorrecttechniqueofocularexaminationinapatientwitha cataract (PartII)	
34		OP7.4	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeand post-operativecomplicationsofextracapsularcataractextractionsurgery.(PartI)	
35		OP7.4	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeand post-operativecomplicationsofextracapsularcataractextractionsurgery.(PartII)	
36		OP7.4	Enumeratethetypesofcataractsurgeryanddescribethesteps,intra-operativeand post-operativecomplicationsofextracapsularcataractextractionsurgery.(PartIII)	
37		OP7.5	To participate in the team for cataract surgery (Part I)	
38		OP7.5	To participate in the team for cataract surgery (Part II)	
39		OP7.5	To participate in the team for cataract surgery (Part III)	
40		OP7.6	Administer informed consent and counsel patients for cataract surgery in a simulated environment	
			Topic: Retina and Optic Nerve	
41		OP8.1	Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina	

42	Day7	**OP8.2**	Enumerate the indications for laser therapy in the treatment of retinal diseases (including retinal detachment, retinal degenerations, diabetic retinopathy & hypertensive retinopathy)	
43		**OP8.3**	Demonstrate the correct technique of a fundus examination and describe and distinguish the funduscopic features in a normal condition and in conditions causing an abnormal retinal exam (Part I)	
44	Day8	**OP8.3**	Demonstrate the correct technique of a fundus examination and describe and distinguish the funduscopic features in a normal condition and in conditions causing an abnormal retinal exam (Part II)	
45	Day 9	**OP8.4**	Enumerate and discuss treatment modalities in management of diseases of the retina (Part I)	
46		**OP8.4**	Enumerate and discuss treatment modalities in management of diseases of the retina (Part II)	
47	Day 10	**OP8.5**	Describe and discuss the correlative anatomy, aetiology, clinical manifestations, diagnostic tests, imaging and management of diseases of the optic nerve and visual pathway (Part I)	
48	Day 11	**OP8.5**	Describe and discuss the correlative anatomy, aetiology, clinical manifestations, diagnostic tests, imaging and management of diseases of the optic nerve and visual pathway (Part II)	
			Topic : Miscellaneous	
49		**OP9.1**	Demonstratethecorrecttechniquetoexamineextraocularmovements(Uniocular& Binocular)	

50	Day 12	**OP9.2**	Classify, enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus (Part I)	
51		**OP9.2**	Classify, enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus (Part II)	
52	Day 13	**OP9.4**	Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020) (Part I)	
53	Day 14	**OP9.4**	Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020) (Part II)	
54		**OP9.5**	Describe the evaluation and enumerate the steps involved in the stabilization, initial management and indication for referral in a patient with ocular injury	
			Topic : Integration	
55		OP2.1	Enumerate the causes, describe and discuss the aetiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa including Hordeolumexternum/ internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag,lagopthalmos	Anatomy
56		OP8.1	Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina	Anatomy and Pathology
57		OP9.4	Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020)	Community medicine

58		OP6.3	Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations	General Medicine
59		OP9.3	Describe the role of refractive error correction in a patient with headache and enumerate the indications for referral	General Medicine
60		OP5.2	Define, enumerate and describe the aetiology, associated systemic conditions, clinical features, complications, indications for referral and management of scleritis	General Medicine

Summary of course content, teaching and learning methods and student assessment for the undergraduate (MBBS)Curriculum in Ophthalmology

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 Sri Venkateswara Institute Of Medical Sciences.

Teaching-Learning methods and Time allotted

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 ophthalmologic problems, their management and correlation with function, rehabilitation, and quality of life

Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories. Use of skill lab to train undergraduates in Direct Ophthalmoscopy although not mandatory, but it is desirable.

	Lectures	Small group discussion	Self-directed learning	Total hours	Clinical postings
Ophthalmology	30hours	60hours	10hours	100 hours	Two postings of 4 weeks each. First posting in 3-4th terms (15hours/week) and Second posting in 6-7th terms (18hours/week)

The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday)

The clinical postings in the third professional part I shall be 18 hours per week (3 hrs per day from Monday to Saturday)

Newer T-L method like Learner-doctor method (Clinical clerkship) should be mandatorily implemented, from 1st clinical postings in ophthalmology 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 settings. During the 1st clinical postings, the students are oriented to the working of the department. During the second clinical posting 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 surgeries if any till patient is discharged.

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 which is called the AETCOM module. The purpose is to help the students apply principles of bioethics, systems-based care, apply empathy and other human values in patient care, communicate effectively with patients and relatives and to become a professional who exhibits all these values. This will be a longitudinal programme spread across the continuum of the MBBS programme including internship. MBBS Phase 3 Part 1, has to complete 5 modules of 5hours each. The Ophthalmology faculty will have the responsibility of conducting 1module as per the decision and logistics of institution.

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 Ophthalmology.

75% attendance in AETCOM Module is required for eligibility to appear for final examination in 3rd professional year 3 part 1.

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.

Learners must secure at least 50% marks of the total marks (combined in theory and clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in Ophthalmology in order to be eligible for appearing at the final University examination.

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

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 Ophthalmology logbook entry completed to be eligible for appearing at the final university examination.

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

University examinations

Third Professional Part I shall be held at end of third Professional part 1 of training (12 months) in the subjects of Ophthalmology, Otorhinolaryngology, Community Medicine and Forensic Medicine and Toxicology

University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him/her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

Marks allotted

Ophthalmology	Theory	Clinicalexamination
Total marks	100 marks	100 marks
	Long essay 2X15= 30	One long case x 40marks=40marks 2 short cases 2 x15marks=30
	Short essay 10x5=50 marks	OSCE =20marks
	MCQs 20x1=20marks	Orals and viva voce = 10 marks

The theory paper should include different types such as structured essays, short essays, Short Answers Questions (SAQ) and MCQs (Multiple Choice Questions). Marks for each part should be indicated separately.

All the question papers to follow the suggested **blueprint (APPENDIX 1).** It is desirable that the marks allotted to a particular topic are adhered to.
A minimum of **80%** of the marks should be from the **must know** 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.
One main essay question to be of the **modified variety** containing a clinical case scenario. At least 30% of questions should be clinical case scenario based. Questions to be constructed to test higher cognitive levels.
Clinical examinations will be conducted in the hospital wards. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and develop a management plan.

Viva/oral examination should assess approach to patient management, emergencies, attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data, X-rays, identification of specimens, ECG, etc. is to be also assessed.

At least one question in each paper of the clinical specialties in the University examination should test knowledge competencies acquired during the professional development programme. Skill competencies acquired during the Professional Development Programme must be tested during the clinical, practical and viva voce.

There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.

Passcriteria

Internal Assessment: 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations

University Examination: Mandatory 50% marks separately in theory and clinicals (clinicals = clinical + viva)

The grace marks up to a maximum of five marks may be awarded at the discretion of the University to a learner for clearing the examination as a whole but not for clearing a subject resulting in exemption.

Appointment of Examiners

Person appointed as an examiner in the subject must have at least four years of total teaching experience as assistant professor after obtaining postgraduate degree in the subject in a college affiliated to a recognized/approved/permitted medical college.

For the Practical/ Clinical examinations, there shall be at least four examiners for 100 learners, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner will act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained.

Where candidates appearing are more than 100, two additional examiners (one external & one internal) for every additional 50 or part there of candidates appearing, be appointed.

All eligible examiners with requisite qualifications and experience can be appointed as internal examiners by rotation

External examiners may not be from the same University.

There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.

All theory paper assessment should be done as central assessment program (CAP) of concerned university.

APPENDIX 1: Blueprint for Ophthalmology theory Examinations

Topics	Marksallotted
Eyelids disorders	6
Conjunctival diseases	10
Corneal disorders	10
Refractive errors	6
Lacrimal Drainage system	6

Tear Film abnormalities	5
Diseases of Sclera	3
Diseases of Lens	8
Glaucoma	10
Uveitis	5
Diseases of Retina and choroid	10
Orbital diseases	5
Neuroophthalmological conditions	8
Community Ophthalmology	5
Strabismus	3
Total	100

OPHTHALMOLOGY SAMPLE QUESTION PAPER

Marks: 100

Long essays (2 X 15 = 30 marks) Time: 3 hours

Your answers should be specific to the questions asked.
Draw neat, labelled diagrams wherever necessary.

1. A 42year old male, farmer by profession seeks treatment for painful loss of vision in the left eye 1 week duration after he sustainedtraumawithvegetablematterwhileworking.Onexaminationhisvisualacuityis Counting Fingers 3meterswithacentralwhitishlesion on thecornea.
What is the most likely diagnosis? Describe the clinical features of this condition? Discuss the investigations and treatment for this condition. Describe briefly the complications associated with this condition
(2+5+4+4=15)
2. Describethe risk factors and stagingofdiabeticretinopathywiththeclinicalfeaturesandtreatmentofeachstage.Addanoteonanti-VEGF treatment and PRP (3+8+4=15)

Short essays (10x5=50marks)

3. A3montholdmalechildwasbroughtwithcomplaintsofwateringofrighteyesincebirthwithintermittentyellowish-white discharge. What is the most probable diagnosis and how will you manage thischild?
4. Describe the WHO classification of vitamin A deficiency. Add a note on treatment of vitamin Adeficiency
5. Discuss the etiological classification of entropion. Discuss the etiopathogenesis and management of senileentropion
6. Describe the visual field changes in Primary open angleglaucoma
7. Describe the Classification of Hypermetropiaandmanagement
8. A 48year old female presents with gradually progressive loss of vision in the right eye since 8months. What is the probable differential diagnosis and how will you investigate and manage thispatient?
9. Enumerate the causes and discuss the investigations and treatment of non-granulomatousiridocyclitis.
10. Discuss the etiology, clinical features and management of opticneuritis
11. Write briefly on the Treatment oftrachoma

12. Write a note on clinical features of orbitalcellulitis
13. Enumerate the indications forkeratoplasty

Multiple choice questions (20x1=10marks, with no negative marking)

14. (i) Corneal perforation is an expected complicationof

    A) Hypopyonulcer

    B) Fasicularulcer

    C) Mooren'sulcer

    D) Dendriticulcer

21. (ii) Surgery of choice in "Buphthalmos"is

    A) cyclocryotherapy

    B) iridectomy

    C) trabeculectomy

D) trabeculotomy

21. (iii) A vertically oval mid-dilated pupil unresponsive to light is diagnosticof

A) acute anterioruveitis

B) acute mucopurulentconjunctivitis

C) acute congestiveglaucoma

D) acute nodularscleritis

21. (iv) Orbicularis oculi is innervated by which cranialnerve?

A) 4^{th}

B) 5^{th}

C) 6^{th}

D) 7^{th}

21. (v) Proptosis is measuredusing

A) Keratometer

B) Tonometer

C) Exophthalmometer

D) Gonioscope

22. (i) Formation of a “Cyclitic membrane” leads to all the following**EXCEPT**

A) Hypotony

B) Glaucoma

C) Loss ofvision

D) Pthisisbulbi

22, (ii) In an adult male presenting with acute severe purulent conjunctivitis, preauricular lymph node enlarged and tender with associated constitutional symptoms the treatment of choice is

A) Ceftriaxone 1gm intramuscularly with intensive topical penicillintherapy

B) Intensive topical penicillin therapyalone

C) Fluoroquinolones 500mg BID intravenously with topical tetracyclinetherapy

D) Intensive topical tetracycline therapyalone

22. (iii) Topical Mitomycin C is used in the treatment of pterygiumto

A) Prevent malignant transformation

B) Improvecirculation

C) Prevent recurrence

D) Preventcalcification

22. (iv) “Pizza pie” appearance is typically seenin

A) Retinitispigmentosa

B) CMVretinitis

C) Toxoplasmaretinitis

D) Tuberculousretinitis

22. (v) “Homonymous hemianopia with macular sparing” is seen in lesionsof

A) Occipitalcortex

B) Opticradiation

C) Opticchiasm

D) Opticnerve

Practicals:

LONGCASE	SHORTCASE
Immaturecataract	Pterygium
Maturecataract	Pingeucula
Pseudophakia	Cornealopacity
Aphakia	Phthisisbulbi
Hypermaturecataract	Lidsswelling
	Subconjunctivalhemorrhage
	Bitotspots
	Episcleritis/scleritis

DistributionofMarksforPracticalExaminations: PracticalexaminationwillbeconductedunderheadsofPracticalexaminationandVivaVoce.

1	**PracticalExamination**	**(70marks)**
	LONGCASE(1x40)	40
	SHORTCASE(2x15)	30
2	**OSCE**	**(20marks)**
	LENSES&DRUGS	10
	INSTRUMENTS	10
3	**VIVA VOCE**	**(10 MARKS)**
	ORALS&COMMUNITYOPHTHALMOLOGY	10
	TOTALMARKS	**100**

	MaximumMarks	Passingminimum	PassingCriteria(Theory&Practical)
Theory	100	50	100 [Mandatory 50% marks in theoryand practical (practical = practical/clinical+viva)[theory=theorypaper(s)only]
Practicals+viva	100	50	

RECOMMENDEDBOOKS:

S.No	NameofBook	Author(s)	Edition	Publishers
1	Parsons'Diseasesofthe EYE	RamanjitSihota, RadhikaTandon	23rd	ElsevierPublication

Department of General medicine

The broad goal of undergraduate training in General Medicine is to impart basic knowledge, skill and behavioral attitudes to the students to function effectively as the first contact primary care physician.

Respiratory medicine

- To impart comprehensive knowledge, skills, attitude and communication to the undergraduate medical students in Respiratory medicine.
- To identify respiratory health issues and to manage or refer at appropriate time.
- To create respiratory health awareness and to reduce the stigma associated with chronic respiratory illness
- To nurture students and mould them as an ideal Indian Medical Graduate who should be a good clinician, communicator, lifelong learner, professional, leader and member of health care team,

Psychiatry

- To impart comprehensive knowledge, skills, attitude and communication to the undergraduate medical students in psychiatry.
- To identify mental health issues and to manage or refer at appropriate time.
- To create mental health awareness and to reduce the stigma associated with mental illness
- To nurture students and mould them as an ideal Indian Medical Graduate who should be a good clinician, communicator, lifelong learner, professional, leader and member of health care team,

Dermatology, Venereology and Leprosy

The broad goal of the teaching of Undergraduate students in Dermatology, Venereology and Leprosy is to produce graduates capable of independently diagnosing and clinically evaluating basic skin lesions and further investigating them

The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practice of Dermatology, Venereology & Leprosy, as a part of General Medicine through exposure to general and auto immune skin disorders.

The student must appreciate the medical management and basic foundations underlying the care of patients with dermatological complaints

COMPETENCIES

GENERAL MEDICINE

- The student must demonstrate ability to do the following in relation to common Medical problems of the adult in the community: Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
- Competently interview and examine an adult patient and make a clinical diagnosis,
- Appropriately order and interpret laboratory tests,
- Initiate appropriate cost-effective treatment based on an understanding of the rational drug Prescriptions,

medical interventions required and preventive measures,

- Follow up of patients with medical problems and refer whenever required,
- Communicate effectively, educate and counsel the patient and family,
- Manage common medical emergencies and refer when required,
- Independently perform common medical procedures safely and understand patient safety issues.

Respiratory Medicine

The student must demonstrate:

- Knowledge of common chest diseases, their clinical manifestations, diagnosis and management,
- Ability to recognize, diagnose and manage pulmonary tuberculosis as contemplated in National
- Tuberculosis Control programme,
- Ability to manage common respiratory emergencies in primary care setting and refer appropriately.

Psychiatry

The undergraduate must demonstrate: (from MCI regulations amended up to 2019)

- History taking in patients with common mental disorders
- Mental status examination in patients with common mental disorders
- Approach to diagnosis in patients with common mental disorders

- Treatment or referral plan in patients with common mental disorders
- Integration: The teaching should be aligned and integrated horizontally and vertically in understanding the mental disorders with physiology, pharmacology, forensic medicine, community medicine, general medicine, obstetrics and pediatrics.

Dermatology, **Venereology & Leprosy**

The undergraduate student must demonstrate:

- Understanding of the principles of diagnosis of diseases of the skin, hair, nail and mucosa,
- Ability to recognize, diagnose, order appropriate investigations and treat common diseases of the
- skin including leprosy in the primary care setting and refer as appropriate,
- A syndrome approach to the recognition, diagnosis, prevention, counseling, testing and
- ManagementofcommonsexuallytransmitteddiseasesincludingHIVbasedonnationalhealth priorities,
- Ability to recognize and treat emergencies including drug reactions and refer as appropriate.

OBJECTIVES

General Medicine

Knowledge:

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

- Diagnose common medical disorders with special reference to infectious diseases, nutritional disorders and environmental disorders.
- Manage various clinical disorders including therapy with medications, with the sound knowledge of their dosage, side effects, toxicity, interactions, indications and contraindications.
- Order proper diagnostic and investigative procedures and able to interpret them and apply to the clinical problem solving.
- Provide first level management of acute medical emergencies promptly and efficiently and decide the timing and level of referral if necessary.
- Recognize geriatric disorders and their management.
- Recognize women's health and adolescent health problems and treat them.
- Understand and take part in National Health Programs in prevention and management of various medical diseases.

Skill

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

- Acquire clinical skills (history taking, clinical examination and laboratory data interpretation) to diagnose common medical disorders and acute medical emergencies;
- Refer a patient to secondary and / or tertiary level of health care after having given primary care;
- Perform simple laboratory tests like hemogram, stool, urine, sputum, and biological fluid examination.
- Assist common bedside procedures like pleural tap, lumbar puncture, bone marrow aspiration and biopsy, liver biopsy etc.
- Develop communication skills for counseling.

Attitude and Communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

- With community medicine to take part in the implementation of important current National Health Programmes and also to view and treat the patient in his/her total physical, social and economic millieu :
- With other relevant academic inputs which provide scientific basis of clinical medicine e.g. anatomy, physiology, biochemistry, microbiology, pathology and pharmacology.

Respiratory Medicine

At the end of the undergraduate medical student will be able to:

Knowledge

- To understand the basics of clinical assessment, diagnosis and treatment of Tuberculosis including MDR,

XDR TB patients.

- To know about the prevalence of common respiratory diseases
- To know the theoretical basis of diagnosis and management of obstructive airway diseases
- To know the theoretical basis of respiratory manifestations of General medical conditions
- To know the theoretical basis of Pharmacology of drugs used in respiratory medicine

Skills

- To elicit detailed history from patients and informants
- To perform Respiratory examination in patients with Respiratory disorders

Attitude and communication

- To establish rapport with patients and their family members
- To establish therapeutic alliance with patients
- To exhibit competencies in verbal, nonverbal and written communication
- Attitude to be a lifelong leaner.

Integration

- At the end of the integrated teaching the student shall acquire an integrated knowledge of Respiratory disorders and its management
- To search the medical literature, including electronic databases, for enhancing the knowledge and skills in Respiratory medicine

Psychiatry

Knowledge:

At the end of the undergraduate medical student will be able to:

- To know about the classification of psychiatric disorders
- To understand the symptoms of common mental disorders in psychiatry
- To know the theoretical basis of differentiating psychiatric disorders from organicity
- To know the theoretical basis of psychiatric manifestations of General medical conditions
- To know the theoretical basis of Substance use disorders
- To know about psychological, pharmacological and somatic interventions.

Skills

- To elicit detailed psychiatric history of common mental disorders from patients and informants
- To perform mental status examination in patients with common mental disorders

Attitude and communication

- To establish rapport with patients and their family members
- To exhibit competencies in verbal, non verbal and written communication
- Attitude to be a lifelong leaner.

Integration

- At the end of the integrated teaching the student shall acquire an integrated knowledge of mental disorders and its management
- To search the medical literature, including electronic databases, for enhancing the knowledge and skills in Psychiatry

Dermatology, **Venereology & leprosy**

Skills

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

- Explain the basic skin lesions clinically and Bed side investigations for the same.
- Clinical Evaluations and bedside Demonstration for Laboratory diagnosis-
  - KOH MOUNT for Fungus
  - Gram stain
  - Scraping and mounting for infestations
- Clinical evaluations of lesions and nerve examinations for Hansens Disease with SSS (slit skin smear) and skin biopsy.
- Describe the various cutaneous findings and clinical aspects of conditions like systemic lupus erythematosus, Scleroderma, Dermatomyositis etc.

Attitude and Communication

- Communication with empathy to patients & patient's attenders.
- To counsel & obtain informed consent from patient & patients attenders.

Integration

The teaching should be aligned and integrated horizontally and vertically in order to emphasize the basis of diseases of the skin, sexually transmitted diseases and leprosy and to provide an understanding that skin diseases may be a manifestation of systemic disease.

Theory Syllabus: Topic and the competencies
General Medicine

Number	**Unit 1 - Heart Failure**
IM1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory
IM1.2	Describe and discuss the genetic basis of some forms of heart failure
IM1.3	Describe and discuss the aetiology microbiology pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis
IM1.4	Stage heart failure
IM1.5	Describe discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure
IM1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations
IM1.7	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia arrhythmias, anemia, thyrotoxicosis, dietary factors drugs etc.
IM1.8	Describe and discuss the pathogenesis and development of common arrythmias involved in heart failure particularly atrial fibrillation

IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever
IM1.16	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis
IM1.17	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures
IM1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy
IM1.24	Describe and discuss the pharmacology of drugs including indications, contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides
IM1.25	Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease
IM1.28	Enumerate the causes of adult presentations of congenital heart disease and describe the distinguishing features between cyanotic and acyanotic heart disease
IM1.29	Elicit document and present an appropriate history, demonstrate correctly general examination, relevant clinical findings and formulate document and present a management plan for an adult patient presenting with a common form of congenital heart disease

Number	**Unit 2 - Acute Myocardial Infarction/ IHD**
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease
IM2.2	Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD
IM2.3	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis
IM2.4	Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD
IM2.5	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes
IM2.13	Discuss and enumerate the indications for and findings on echocardiogram, stress testing and coronary angiogram
IM2.14	Discuss and describe the indications for admission to a coronary care unit and supportive therapy for a patient with acute coronary syndrome
IM2.15	Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation
IM2.16	Discuss and describe the indications for acute thrombolysis, PTCA and CABG
IM2.17	Discuss and describe the indications and methods of cardiac rehabilitation
IM2.18	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia
IM2.19	Discuss and describe the pathogenesis, recognition and management of complications of acute coronary syndromes including arrhythmias, shock, LV dysfunction, papillary muscle rupture and pericarditis
IM2.20	Discuss and describe the assessment and relief of pain in acute coronary syndromes
IM2.23	Describe and discuss the indications for nitrates, anti platelet agents, gpIIb IIIa inhibitors, beta blockers, ACE inhibitors etc in the management of coronary syndromes

Number	**Unit 3 - Pneumonia**
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia
IM3.2	Discuss and describe the aetiologies of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia
IM3.15	Describe and enumerate the indications for hospitalisation in patients with pneumonia
IM3.16	Describe and enumerate the indications for isolation and barrier nursing in patients with pneumonia
IM3.17	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and indications for ventilation

Number	**Unit 4 - Fever and febrile syndromes**

IM4.1	Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile response
IM4.2	Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g.Dengue, Chikungunya, Typhus)
IM4.4	Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies
IM4.6	Discuss and describe the pathophysiology and manifestations of malaria
IM4.7	Discuss and describe the pathophysiology and manifestations of the sepsis syndrome
IM4.8	Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host, neutropenic host, nosocomial host and a host with HIV disease
IM4.11	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC
IM4.16	Enumerate the indications and describe the findings in tests of inflammation and specific rheumatologic tests, serologic testing for pathogens including HIV, bone marrow aspiration and biopsy
IM4.18	Enumerate the indications for use of imaging in the diagnosis of febrile syndromes
IM4.21	Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner
IM4.22	Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance

Number	**Unit 5 - Liver disease**
IM5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia
IM5.2	Describe and discuss the aetiology and pathophysiology of liver injury
IM5.3	Describe and discuss the pathologic changes in various forms of liver disease
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis
IM5.5	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease
IM5.6	Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury
IM5.8	Describe and discuss the pathophysiology, clinical evolution and complications cholelithiasis and cholecystitis
IM5.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom
IM5.13	Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease
IM5.16	Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy
IM5.18	Enumerate the indications for hepatic transplantation

Number	**Unit 6 - HIV**
IM6.1	Describe and discuss the symptoms and signs of acute HIV seroconversion
IM6.2	Define and classify HIV AIDS based on the CDC criteria
IM6.3	Describe and discuss the relationship between CDC count and the risk of opportunistic infections

IM6.4	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections
IM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies
IM6.6	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions
IM6.9	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC
IM6.11	Enumerate the indications and describe the findings for CT of the chest and brain and MRI
IM6.12	Enumerate the indications for and interpret the results of: pulse oximetry, ABG, Chest Radiograph
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea
IM6.16	Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions
IM6.17	Discuss and describe the principles and regimens used in post exposure prophylaxis

Number	**Unit 7 - Rheumatologic problems**
IM7.1	Describe the pathophysiology of autoimmune disease
IM7.2	Describe the genetic basis of autoimmune disease
IM7.3	Classify cause of joint pain based on the pathophysiology
IM7.4	Develop a systematic clinical approach to joint pain based on the pathophysiology
IM7.5	Describe and discriminate acute, subacute and chronic causes of joint pain
IM7.6	Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain
IM7.7	Discriminate, describe and discuss distinguishing articular from periarticular complaints
IM7.8	Determine the potential causes of join pain based on the presenting features of joint involvement
IM7.9	Describe the common signs and symptoms of articular and periarticular diseases
IM7.10	Describe the systemic manifestations of rheumatologic disease
IM7.14	Describe the appropriate diagnostic work up based on the presumed aetiology
IM7.15	Enumerate the indications for and interpret the results of : CBC, anti- CCP, RA, ANA, DNA and other tests of autoimmunity
IM7.16	Enumerate the indications for arthrocentesis
IM7.17	Enumerate the indications and interpret plain radiographs of joints
IM7.19	Develop an appropriate treatment plan for patients with rheumatologic diseases
IM7.23	Describe the basis for biologic and disease modifying therapy in rheumatologic diseases
IM7.27	Determine the need for specialist consultation

Number	**UNIT 8 - Hypertension**
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension
IM8.2	Describe and discuss the pathophysiology of hypertension
IM8.3	Describe and discuss the genetic basis of hypertension
IM8.4	Define and classify hypertension
IM8.5	Describe and discuss the differences between primary and secondary hypertension
IM8.6	Define, describe and discuss and recognise hypertensive urgency and emergency
IM8.7	Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension
IM8.8	Describe, discuss and identify target organ damage due to hypertension
IM8.9	Elicit document and present a medical history that includes: duration and levels, symptoms, comorbidities, lifestyle, risk factors, family history, psychosocial and environmental factors, dietary assessment, previous and concomitant therapy
IM8.12	Describe the appropriate diagnostic work up based on the presumed aetiology

IM8.13	Enumerate the indications for and interpret the results of : CBC, Urine routine, BUN, Cr, Electrolytes, Uric acid, ECG
IM8.14	Develop an appropriate treatment plan for essential hypertension
IM8.20	Determine the need for specialist consultation

Number	**Unit 9 - Anemia**
IM9.1	Define, describe and classify anemia based on red blood cell size and reticulocyte count
IM9.2	Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia
IM9.7	Describe and discuss the meaning and utility of various components of the hemogram
IM9.8	Describe and discuss the various tests for iron deficiency
IM9.11	Describe the indications and interpret the results of a bone marrow aspirations and biopsy
IM9.12	Describe, develop a diagnostic plan to determine the aetiology of anemia
IM9.14	Describe the national programs for anemia prevention
IM9.17	Describe the indications for blood transfusion and the appropriate use of blood components
IM9.18	Describe the precautions required necessary when performing a blood transfusion
IM9.21	Determine the need for specialist consultation

Number	**Unit 10 - Acute Kidney Injury and Chronic renal failure**
IM10.1	Define, describe and differentiate between acute and chronic renal failure
IM10.2	Classify, describe and differentiate the pathophysiologic causes of acute renal failure
IM10.3	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF
IM10.4	Describe the evolution, natural history and treatment of ARF
IM10.5	Describe and discuss the aetiology of CRF
IM10.6	Stage Chronic Kidney Disease
IM10.7	Describe and discuss the pathophysiology and clinical findings of uraemia
IM10.8	Classify, describe and discuss the significance of proteinuria in CKD
IM10.9	Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD
IM10.10	Describe and discuss the association between CKD glycemia and hypertension
IM10.11	Describe and discuss the relationship between CAD risk factors and CKD and in dialysis
IM10.14	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM10.15	Describe the appropriate diagnostic work up based on the presumed aetiology
IM10.16	Enumerate the indications for and interpret the results of : renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap
IM10.19	Enumerate the indications and describe the findings in renal ultrasound
IM10.24	Counsel patients on a renal diet
IM10.26	Describe and discuss supportive therapy in CKD including diet, anti hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and secondary hyperparathyroidism

Number	**Unit 11 - Diabetes Mellitus**
IM11.1	Define and classify diabetes
IM11.2	Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes
IM11.3	Describe and discuss the epidemiology and pathogenesis and risk factors economic impact and clinical evolution of type 2 diabetes
IM11.4	Describe and discuss the genetic background and the influence of the environment on diabetes
IM11.5	Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes
IM11.6	Describe and discuss the pathogenesis and precipitating factors, recognition and management of diabetic emergencies

IM11.9	Describe and recognise the clinical features of patients who present with a diabetic emergency
IM11.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM11.14	Recognise the presentation of hypoglycaemia and outline the principles on its therapy
IM11.15	Recognise the presentation of diabetic emergencies and outline the principles of therapy
IM11.16	Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions
IM11.17	Outline a therapeutic approach to therapy of T2Diabetes based on presentation, severity and complications in a cost effective manner
IM11.18	Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease
IM11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment
IM11.23	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of diabetic ketoacidosis
IM11.24	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of Hyperosmolar non ketotic state

Number	**Unit 12 - Thyroid dysfunction**
IM12.1	Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease
IM12.2	Describe and discuss the genetic basis of some forms of thyroid dysfunction
IM12.3	Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function
IM12.4	Describe and discuss the principles of radio iodine uptake in the diagnosis of thyroid disorders
IM12.8	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis
IM12.12	Describe and discuss the iodisation programs of the government of India
IM12.13	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs
IM12.15	Describe and discuss the indications of thionamide therapy, radio iodine therapy and surgery in the management of thyrotoxicosis

Number	**Unit 13 - Common malignancies**
IM13.1	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India
IM13.2	Describe the genetic basis of selected cancers
IM13.3	Describe the relationship between infection and cancers
IM13.4	Describe the natural history, presentation, course, complications and cause of death for common cancers
IM13.5	Describe the common issues encountered in patients at the end of life and principles of management
IM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer
IM13.12	Describe the indications and interpret the results of Chest X Ray, mammogram, skin and tissue biopsies and tumor markers used in common cancers
IM13.13	Describe and assess pain and suffering objectively in a patient with cancer
IM13.14	Describe the indications for surgery, radiation and chemotherapy for common malignancies
IM13.15	Describe the need, tests involved, their utility in the prevention of common malignancies
IM13.17	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer
IM13.18	Describe and discuss the ethical and the medico legal issues involved in end of life care
IM13.19	Describe the therapies used in alleviating suffering in patients at the end of life

Number	**Unit 14 - Obesity**
IM14.1	Define and measure obesity as it relates to the Indian population

IM14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes
IM14.3	Describe and discuss the monogenic forms of obesity
IM14.4	Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity
IM14.5	Describe and discuss the natural history of obesity and its complications
IM14.10	Describe the indications and interpret the results of tests for secondary causes of obesity
IM14.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity
IM14.14	Describe and enumerate the indications and side effects of bariatric surgery
IM14.15	Describe and enumerate and educate patients, health care workers and the public on measures to prevent obesity and promote a healthy lifestyle

Number	**Unit 15 - GI bleeding**
IM15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding
IM15.3	Describe and discuss the physiologic effects of acute blood and volume loss
IM15.10	Enumerate the indications for endoscopy, colonoscopy and other imaging procedures in the investigation of Upper GI bleeding
IM15.12	Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion
IM15.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori
IM15.16	Enumerate the indications for endoscopic interventions and Surgery

Number	**Unit 16 - Diarrheal disorder**
IM16.1	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non infectious causes
IM16.2	Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance
IM16.3	Describe and discuss the chronic effects of diarrhea including malabsorption
IM16.11	Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea
IM16.12	Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea
IM16.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea
IM16.16	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy
IM16.17	Describe and enumerate the indications for surgery in inflammatory bowel disease
Number	**Unit 17 - Headache**
IM17.1	Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache
IM17.3	Classify migraine and describe the distinguishing features between classical and non classical forms of migraine
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis
IM17.10	Enumerate the indications for emergency care admission and immediate supportive care in patients with headache
IM17.11	Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine
IM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine
IM17.13	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis

Number	Unit 18 - Cerebrovascular accident
IM18.1	Describe the functional and the vascular anatomy of the brain
IM18.2	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke
IM18.4	Identify the nature of the cerebrovascular accident based on the temporal evolution and resolution of the illness
IM18.8	Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in CNS disease
IM18.11	Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)
IM18.12	Enumerate the indications for and describe acute therapy of non hemorrhagic stroke including the use of thrombolytic agents
IM18.13	Enumerate the indications for and describe the role of anti platelet agents in non hemorrhagic stroke
IM18.14	Describe the initial management of a hemorrhagic stroke
IM18.15	Enumerate the indications for surgery in a hemorrhagic stroke

Number	Unit 19 - Movement disorders
IM19.1	Describe the functional anatomy of the locomotor system of the brain
IM19.2	Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors
IM19.8	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome
IM19.9	Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders

Number	Unit 20 - Envenomation
IM20.1	Enumerate the local poisonous snakes and describe the distinguishing marks of each
IM20.3	Describe the initial approach to the stabilisation of the patient who presents with snake bite
IM20.7	Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti snake venom
IM20.8	Describe the diagnosis, initial approach stabilisation and therapy of scorpion envenomation
IM20.9	Describe the diagnosis initial approach stabilisation and therapy of bee sting allergy

Number	Unit 21 - Poisoning
IM21.1	Describe the initial approach to the stabilization of the patient who presents with poisoning
IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification
IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy
IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features,
	prognosis and approach to therapy
IM21.8	Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture

Number	Unit 22 - Mineral, Fluid Electrolyte and Acid base Disorder
IM22.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia
IM22.2	Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism
IM22.3	Describe the approach to the management of hypercalcemia
IM22.4	Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome

IM22.5	Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management of the patient with hyponatremia
IM22.6	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyponatremia
IM22.7	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hypokalemia
IM22.8	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyperkalemia
IM22.9	Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis
IM22.10	Enumerate the causes of describe the clinical and laboratory features of metabolic alkalosis
IM22.11	Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis
IM22.12	Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis

Number	**Unit 23 - Nutritional and Vitamin Deficiencies**
IM23.1	Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses
IM23.2	Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital
IM23.3	Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies
IM23.4	Enumerate the indications for enteral and parenteral nutrition in critically ill patients

Number	**Unit 24 - Geriatrics**
IM24.1	Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly
IM24.3	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of acute confusional states
IM24.4	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vascular events in the elderly
IM24 5	Describe and discuss the aetiopathogenesis clinical presentation identification, functional changes, acute care, stabilization, management and rehabilitation of depression in the elderly
IM24.6	Describe and discuss the aetiopathogenesis causes, clinical presentation, difference in discussion presentation identification, functional changes, acute care, stabilization, management and rehabilitation of dementia in the elderly
IM24.7	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the elderly
IM24.8	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of osteoporosis in the elderly
IM24.9	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of CVA in the elderly
IM24.10	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly
IM24.11	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery
IM24.12	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of degenerative joint disease
IM24.13	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly
IM24.14	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of common fractures in the elderly
IM24.15	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly
IM24.16	Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly

IM24.17	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly
IM24.18	Describe the impact of the demographic changes in ageing on the population
IM24.19	Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on health.
IM24.20	Enumerate and describe social interventions in the care of elderly including domiciliary discussion services, rehabilitation facilities, old age homes and state interventions
IM24.21	Enumerate and describe ethical issues in the care of the elderly
IM24.22	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly

Number	**Unit 25 - Miscellaneous Infections**
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis, Rabies) and non-febrile infectious disease (e.g. Tetanus)
IM25.2	Discuss and describe the common causes, pathophysiology and manifestations of these diseases
IM25.3	Describe and discuss the pathophysiology and manifestations of these diseases
IM25.6	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes
IM25.7	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC
IM25.8	Enumerate the indications for use of newer techniques in the diagnosis of these infections
IM25.10	Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner

Number	**Unit 26 - The role of the physician in the community**
IM26.1	Enumerate and describe professional qualities and roles of a physician
IM26.2	Describe and discuss the commitment to lifelong learning as an important part of physician growth
IM26.3	Describe and discuss the role of non maleficence as a guiding principle in patient care
IM26.4	Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care
IM26.5	Describe and discuss the role of beneficence of a guiding principle in patient care
IM26.6	Describe and discuss the role of a physician in health care system
IM26.7	Describe and discuss the role of justice as a guiding principle in patient care
IM26.8	Identify discuss medicolegal, socioeconomic and ethical issues as it pertains to organ donation
IM26.9	Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care
IM26.10	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care
IM26.11	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to patient autonomy, patient rights and shared responsibility in health care
IM26.12	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in health care including advanced directives and surrogate decision making
IM26.13	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in emergency care including situations where patients do not have the capability or capacity to give consent
IM26.14	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects
IM26.15	Identify, discuss and defend, medicolegal,socio-cultural and ethical issues as they pertain to consent for surgical procedures
IM26.16	Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)
IM26.17	Identify, discuss physician's role and responsibility to society and the community that she/ he serves

IM26.18	Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues in physician- industry relationships
IM26.43	Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as they pertain to in vitro fertilisation donor insemination and surrogate motherhood
IM26.44	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to medical negligence
IM26.45	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to malpractice
IM26.46	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues in dealing with impaired physicians
IM26.47	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support

Respiratory Medicine

Number	**Unit 1 - Tuberculosis**
CT1.1	Describe and discuss the epidemiology of tuberculosis and its impact on the work, life and economy of India
CT1.2	Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS)
CT1.3	Discuss and describe the impact of co-infection with HIV and other co-morbid conditions. Like diabetes on the natural history of tuberculosis
CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs
CT1.5	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations
CT1.6	Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes a a) general examination, b) examination of the chest and lung including loss of volume, mediastinal shift, percussion and auscultation (including DOAP session of lung sounds and added sounds) c) examination of the lymphatic system and d) relevant CNS examination
CT1.7	Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test
CT1.8	Generate a differential diagnosis based on the clinical history and evolution of the disease that prioritises the most likely diagnosis
CT1.9	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing
CT1.10	Perform and interpret an AFB stain
CT1.11	Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration
CT1.12	Enumerate the indications for tests including: serology, special cultures and polymerase chain reaction and sensitivity testing
CT1.13	Describe and discuss the origin, indications, technique of administration, efficacy and complications of the BCG vaccine
CT1.14	Describe and discuss the pharmacology of various anti-tuberculous agents, their indications, contraindications, interactions and adverse reactions
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and comorbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)
CT1.16	Describe the appropriate precautions, screening, testing and indications for chemoprophylaxis for contacts and exposed health care workers
CT1.17	Define criteria for the cure of Tuberculosis; describe and recognise the features of drug resistant tuberculosis, prevention and therapeutic regimens
CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program
CT1.19	Communicate with patients and family in an empathetic manner about the diagnosis, therapy
Number	**Unit 2: Obstructive airway disease**
CT2.1	Define and classify obstructive airway disease

CT2.2	Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease
CT2.3	Enumerate and describe the causes of acute episodes in patients with obstructive airway disease
CT2.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapneia
CT2.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema
CT2.6	Describe the role of the environment in the cause and exacerbation of obstructive airway disease
CT2.7	Describe and discuss allergic and non-allergic precipitants of obstructive airway disease
CT2.8	Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants
CT2.9	Perform a systematic examination that establishes the diagnosis and severity that includes measurement of respiratory rate, level of respiratory distress, effort tolerance, breath sounds, added sounds, identification of signs of consolidation pleural effusion and Pneumothorax
CT2.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
CT2.11	Describe, discuss and interpret pulmonary function tests
CT2.12	Perform and interpret peak expiratory flow rate
CT2.13	Describe the appropriate diagnostic work up based on the presumed aetiology
CT2.14	Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph
CT2.15	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
CT2.16	Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilisers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy
CT2.17	Describe and discuss the indications for vaccinations in OAD
CT2.18	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids
CT2.19	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy
CT2.20	Describe and discuss the principles and use of oxygen therapy in the hospital and at home
CT2.21	Describe discuss and counsel patients appropriately on smoking cessation
CT2.22	Demonstrate and counsel patient on the correct use of inhalers
CT2.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients
CT2.24	Recognize the impact of OAD on patient's quality of life, well being, work and family
CT2.25	Discuss and describe the impact of OAD on the society and workplace
CT2.26	Discuss and describe preventive measures to reduce OAD in workplaces
CT2.27	Demonstrate an understanding of patient's inability to change working, living and environmental factors that influence progression of airway disease

Psychiatry

Number	**Unit 1 - Doctor patient relationship**
PS1.1	Establish rapport and empathy with patients
PS1.2	Describe the components of communication
PS1.3	Demonstrate breaking of bad news in a simulated environment
PS1.4	Describe and demonstrate the importance of confidentiality in patient encounters

Number	**Unit 2 - Mental health**
PS2.1	Define stress and describe its components and causes
PS2.2	Describe the role of time management, study skills, balanced diet and sleep wake habits in stress avoidance
PS2.3	Define and describe the principles and components of learning memory and emotions
PS2.4	Describe the principles of personality development and motivation
PS2.5	Define and distinguish normality and abnormality
Number	**Unit 3 - Introduction to psychiatry**

PS3.1	Describe the growth of psychiatry as a medical specialty, its history and contribution to society
PS3.2	Enumerate, describe and discuss important signs & symptoms of common mental disorders
PS3.3	Elicit, present and document a history in patients presenting with a mental disorder
PS3.4	Describe the importance of establishing rapport with patients
PS3.5	Perform, demonstrate and document a mini mental examination
PS3.6	Describe and discuss biological, psychological & social factors & their interactions in the causation of mental disorders
PS3.7	Enumerate and describe common organic psychiatric disorders, magnitude, etiology and clinical features
PS3.8	Enumerate and describe the essential investigations in patients with organic psychiatric disorders
PS3.9	Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders
PS3.10	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders
PS3.11	Enumerate the appropriate conditions for specialist referral in patients with psychiatric disorders
PS3.12	Describe, discuss and distinguish psychotic & non-psychotic (Mood, Anxiety, Stress related) disorders

Number	**Unit 4 -Substance use disorders**
PS4.1	Describe the magnitude and etiology of alcohol and substance use disorders
PS4.2	Elicit, describe and document clinical features of alcohol and substance use disorders
PS4.3	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders
PS4.4	Describe the treatment of alcohol and substance abuse disorders including behavioral and pharmacologic therapy
PS4.5	Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment
PS4.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse
PS4.7	Enumerate the appropriate conditions for specialist referral in patients with alcohol and substance abuse disorders

Number	**Unit 5 - Psychotic disorders**
PS5.1	Classify and describe the magnitude and etiology of schizophrenia & other psychotic disorders
PS5.2	Enumerate, elicit, describe and document clinical features, positive and negative symptoms of schizophrenia
PS5.3	Describe the treatment of schizophrenia including behavioural and pharmacologic therapy
PS5.4	Demonstrate family education in a patient with schizophrenia in a simulated environment
PS5.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia
PS5.6	Enumerate the appropriate conditions for specialist referral in patients with psychotic disorders

Number	**Unit 6 - Mood disorder**
PS6.1	Classify and describe the magnitude and etiology of depression
PS6.2	Enumerate, elicit, describe and document clinical features in patients with depression
PS6.3	Enumerate and describe the indications and interpret laboratory and other tests used in depression
PS6.4	Describe the treatment of depression including behavioural and pharmacologic therapy
PS6.5	Demonstrate family education in a patient with depression in a simulated environment
PS6.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in depression
PS6.7	Enumerate the appropriate conditions for specialist referral in patients with depression

Number	**Unit 7 - Bipolar disorder**
PS7.1	Classify and describe the magnitude and etiology of bipolar disorders
PS7.2	Enumerate, elicit, describe and document clinical features in patients with bipolar disorders

PS7.3	Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders
PS7.4	Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy
PS7.5	Demonstrate family education in a patient with bipolar disorders in a simulated environment
PS7.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders
PS7.7	Enumerate the appropriate conditions for specialist referral in patients with bipolar disorders

Number	**Unit 8 - Anxiety disorders**
PS8.1	Enumerate and describe the magnitude and etiology of anxiety disorders
PS8.2	Enumerate, elicit, describe and document clinical features in patients with anxiety disorders
PS8.3	Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders
PS8.4	Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy
PS8.5	Demonstrate family education in a patient with anxiety disorders in a simulated environment.
PS8.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders
PS8.7	Enumerate the appropriate conditions for specialist referral in anxiety disorders

Number	**Unit 9 - Stress related disorders**
PS9.1	Enumerate and describe the magnitude and etiology of stress related disorders
PS9.2	Enumerate, elicit, describe and document clinical features in patients with stress related disorders
PS9.3	Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders
PS9.4	Describe the treatment of stress related disorders including behavioural and psychosocial therapy
PS9.5	Demonstrate family education in a patient with stress related disorders in a simulated environment
PS9.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in stress related disorders
PS9.7	Enumerate the appropriate conditions for specialist referral in stress disorders

Number	**Unit 10 - Somatoform disorders**
PS10.1	Enumerate and describe the magnitude and etiology of somatoform, dissociative and conversion disorders
PS10.2	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders
PS10.3	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders
PS10.4	Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy
PS10.5	Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a simulated environment
PS10.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders;
PS10.7	Enumerate the appropriate conditions for specialist referral in patients with somato form dissociative and conversion disorders

Number	**Unit 11 - Personality disorders**
PS11.1	Enumerate and describe the magnitude and etiology of personality disorders
PS11.2	Enumerate, elicit, describe and document clinical features in patients with personality disorders
PS11.3	Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders
PS11.4	Describe the treatment of personality disorders including behavioural, psychosocial and pharmacologic therapy
PS11.5	Demonstrate family education in a patient with personality disorders in a simulated environment
PS11.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders
PS11.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 12 - Psychosomatic disorders
PS12.1	Enumerate and describe the magnitude and etiology of psychosomatic disorders
PS12.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders
PS12.3	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders
PS12.4	Describe the treatment of **psychosomatic** disorders including behavioural, psychosocial and pharmacologictherapy
PS12.5	Demonstrate family education in a patient with psychosomatic disorders in a simulated environment
PS12.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders
PS12.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 13 - Psychosexual and gender identity disorders
PS13.1	Enumerate and describe the magnitude and etiology of psychosexual and gender identity disorders
PS13.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders
PS13.3	Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual andgender identity disorders
PS13.4	Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial andpharmacologic therapy
PS13.5	Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment
PS13.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosexual and genderidentity disorders
PS13.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 14 - Psychiatric disorders in childhood and adolescence
PS14.1	Enumerate and describe the magnitude and etiology of psychiatric disorders occurring in childhood and adolescence
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring inchildhood and adolescence
PS14.3	Describe the treatment of stress related disorders including behavioural, psychosocial and pharmacologic therapy
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescencein a simulated environment
PS14.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders occurring in childhood and adolescence
PS14.6	Enumerate the appropriate conditions for specialist referral in children and adolescents with psychiatric disorders

Number	Unit 15 - Mental retardation
PS15.1	Describe the aetiology and magnitude of mental retardation
PS15.2	Describe and discuss intelligence quotient and its measurement
PS15.3	Elicit and document a history and clinical examination and choose appropriate investigations in a patient withmental retardation
PS15.4	Describe the psychosocial interventions and treatment used in mental retardation

Numbe	Unit 16 - Psychiatric disorders in the elderly

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PS16.1	Enumerate and describe common psychiatric disorders in the elderly including dementia, depression and psychosis
PS16.2	Describe the aetiology and magnitude of psychiatric illness in the elderly
PS16.3	Describe the therapy of psychiatric illness in elderly including psychosocial and behavioural therapy
PS16.4	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment
PS16.5	Enumerate the appropriate conditions for specialist referral in psychiatric disorders in the elderly

Numbe r	Unit 17 - Psychiatric disorders in childhood and adolescence
PS17.1	Enumerate and describe the recognition and clinical presentation of psychiatric emergencies (Suicide, Deliberate Self Harm, Violent behaviour)
PS17.2	Describe the initial stabilisation and management of psychiatric emergencies
PS17.3	Enumerate the appropriate conditions for specialist referral in patients with psychiatric emergencies

Number	Unit 18 - Therapeutics
PS18.1	Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs
	in psychiatric disorders
PS18.2	Enumerate the indications for modified electroconvulsive therapy
PS18.3	Enumerate and describe the principles and role of psychosocial interventions in psychiatric illness includingpsychotherapy, behavioural therapy and rehabilitation

Number	Unit 19 - Miscellaneous
PS19.1	Describe the relevance, role and status of community psychiatry
PS19.2	Describe the objectives strategies and contents of the National Mental Health Programme
PS19.3	Describe and discuss the basic legal and ethical issues in psychiatry
PS19.4	Enumerate and describe the salient features of the prevalent mental health laws in India
PS19.5	Describe the concept and principles of preventive psychiatry and mental health promotion (positive mentalhealth); and community education
PS19.6	Enumerate and describe the identifying features and the principles of participatory management of mentalillness occurring during and after disasters

Dermatology, Venereology & leprosy

Number	Unit 1 - Acne, (Etio pathogenesis & Management)
DR1.1	Enumerate the causative and risk factors of acne
DR1.3	Describe the treatment and preventive measures for various kinds of acne

Number	Unit 2 - Vitiligo vulgaris
DR2.2	Describe the treatment of vitiligo

Number	Unit 3 - Papulosquamous disorders
DR3.1	Identify and distinguish psoriatic lesions from other causes
DR3.3	Enumerate the indications for and describe the various modalities of treatment of psoriasis.

Number	Unit 4 - Lichen Planus
DR4.2	Enumerate and describe the treatment modalities for lichen planus

Number	Unit 5 -Scabies
DR5.1	Describe the etiology, microbiology, pathogenesis, natural history, clinical features, presentations and complications of scabies in adults and children
DR5.3	Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies forscabies

Number	Unit 6 - Pediculosis
DR6.1	Describe the etiology pathogenesis and diagnostic features of pediculosis in adults and children

Number	Unit 7 - Dermatophytosis
DR7.1	Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of dermatophytosis in adults and children
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects ofantifungal therapy

Number	Unit 8 - Viral infections
DR8.1	Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin in adults and children
DR8.7	Enumerate the indications and describe the pharmacology,administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin

Number	Unit 9 - Leprosy
DR9.1	Classify, describe the epidemiology, etiology, microbiology, pathogenesis, clinical presentations and diagnostic features of Leprosy
DR9.4	Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions
DR9.5	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines
DR9.6	Describe the treatment of Leprosy based on the current guidelines
DR9.7	Enumerate and describe the complications of leprosy and its Management.

Number	Unit 10 - Sexually Transmitted Diseases
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis
DR10.4	Describe the prevention of congenital syphilis
DR10.6	Describe the etiology, diagnostic and clinical features of nonsyphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the nonsyphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)
DR10.9	Describe the syndromic approach to ulcerative sexually transmitted disease.
DR10.10	Describe the etiology, diagnostic and clinical features and management of gonococcal and non-gonococcal urethritis.
DR10.11	Describe the etiology, diagnostic and clinical features and management of vaginal discharge.

Number	Unit 11 - HIV
DR11.1	Describe the etiology, pathogenesis and clinical features of thedermatologic manifestations of HIV
DR11.3	Enumerate the indications and describe the pharmacology,administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV

Number	Unit 12 - Dermatitis and Eczema
DR12.1	Describe the aetiopathogenesis of eczema
DR12.3	Classify and grade eczema

DR12.4	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the treatment of eczema

Number	**Unit 14 - Urticaria Angioedema**
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema.
DR14.5	Enumerate the indications and describe the pharmacology indications and adverse reaction of drugs used in the urticaria and angioedema

Number	**Unit 15 - Pyoderma**
DR15.3	Enumerate the indications and describe the pharmacology,indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma

Number	**Unit 17 - Nutritional Deficiencies and Skin**
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency
DR17.2	Enumerate and describe the various skin changes in Vitamin B complex deficiency
DR17.3	Enumerate and describe the various changes in Vitamin C deficiency K
DR17.4	Enumerate and describe the various changes in Zinc deficiency

Number	**Unit 18 - Systemic diseases and the skin**
DR18.1	Enumerate the cutaneous features of Type 2 diabetes
DR18.2	Enumerate the cutaneous features of hypo/hyper-thyroidism

Practical Syllabus: Topic and the competencies
General Medicine

Number	Unit 1 - Heart Failure
IM1.10	Elicit document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including: presenting complaints, precipitating and exacerbating factors, risk factors exercise tolerance, changes in sleep patterns, features suggestive of infective endocarditis
IM1.11	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation
IM1.12	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure
IM1.13	Measure the blood pressure accurately, recognise and discuss alterations in blood pressure in valvular heart disease and other causes of heart failure and cardiac tamponade
IM1.14	Demonstrate and measure jugular venous distension
IM1.15	Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations
IM1.18	Perform and interpret a 12 lead ECG
IM1.19	Enumerate the indications for and describe the findings of heart failure with the following conditions including: 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture
IM1.26	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient

Number	Unit 2 - Acute Myocardial Infarction/ IHD
IM2.6	Elicit document and present an appropriate history that includes onset evolution, presentation risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes
IM2.7	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation
IM2.8	Generate document and present a differential diagnosis based on the clinical presentation and prioritise based on “cannot miss”, most likely diagnosis and severity
IM2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the clinical presentation
IM2.10	Order, perform and interpret an ECG
IM2.11	Order and interpret a Chest X-ray and markers of acute myocardial infarction
IM2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context
IM2.21	Observe and participate in a controlled environment an ACLS program
IM2.22	Perform and demonstrate in a mannequin BLS

Number	Unit 3 - Pneumonia
IM3.4	Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk
IM3.5	Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of disease
IM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation
IM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG
IM3.8	Demonstrate in a mannequin and interpret results of an arterial blood gas examination
IM3.9	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration

IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialized testing
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum.
IM3.14	Perform and interpret a sputum gram stain and AFB

Number	**Unit 4 - Fever and febrile syndromes**
IM4.9	Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use
IM4.10	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)
IM4.13	Perform and interpret a sputum gram stain
IM4.14	Perform and interpret a sputum AFB
IM4.15	Perform and interpret a malarial smear
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment
IM4.19	Assist in the collection of blood and wound cultures
IM4.20	Interpret a PPD (Mantoux)
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs

Number	**Unit 5 - Liver disease**
IM5.9	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history
IM5.10	Perform a systematic examination that establishes the diagnosis and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of portosystemic hypertension and hepatic encephalopathy
IM5.12	Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases.
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology
IM5.15	Assist in the performance and interpret the findings of an ascitic fluid analysis

Number	**Unit 6 - HIV**
IM6.7	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status
IM6.8	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose opportunistic infections including CBC, sputum examination and cultures, blood cultures, stool analysis, CSF analysis and Chest radiographs
IM6.14	Perform and interpret AFB sputum
IM6.15	Demonstrate in a model the correct technique to perform a lumbar puncture

Number	**Unit 7 - Rheumatologic problems:**
IM7.11	Elicit document and present a medical history that will differentiate the aetiologies of disease
IM7.12	Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease

Number	Unit 8 - Hypertension
IM8.10	Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart
IM8.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM8.15	Recognise, prioritise and manage hypertensive emergencies
IM8.17	Perform and interpret a 12 lead ECG

Number	Unit 9 - Anemia
IM9.3	Elicit document and present a medical history that includes symptoms, risk factors including GI bleeding, prior history, medications, menstrual history, and family history
IM9.4	Perform a systematic examination that includes : general examination for pallor, oral examination, DOAP session of hyper dynamic circulation, lymph node and splenic examination
IM9.5	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM9.6	Describe the appropriate diagnostic work up based on the presumed aetiology
IM9.9	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate
IM9.10	Describe, perform and interpret a peripheral smear and stool occult blood
IM9.13	Prescribe replacement therapy with iron, B12, folate
IM9.19	Assist in a blood transfusion

Number	Unit 10 - Acute Kidney Injury and Chronic renal failure
IM10.12	Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes
IM10.13	Perform a systematic examination that establishes the diagnosis and severity including determination of volume status, presence of edema and heart failure, features of uraemia and associated systemic disease
IM10.17	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)
IM10.18	Identify the ECG findings in hyperkalemia
IM10.20	Describe and discuss the indications to perform arterial blood gas analysis: interpret the data
IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter
IM10.22	Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter

Number	Unit 11 - Diabetes Mellitus
IM11.7	Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease
IM11.8	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)
IM11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile
IM11.12	Perform and interpret a capillary blood glucose test
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick

Number	Unit 12 - Thyroid dysfunction
IM12.5	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity
IM12.6	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings
IM12.7	Demonstrate the correct technique to palpate the thyroid

IM12.9	Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan
IM12.10	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG
IM12.11	Interpret thyroid function tests in hypo and hyperthyroidism

Number	**Unit 13 - Common malignancies**
IM13.7	Elicit document and present a history that will help establish the aetiology of cancer and includes the appropriate risk factors, duration and evolution
IM13.8	Perform and demonstrate a physical examination that includes an appropriate general and local examination that excludes the diagnosis, extent spread and complications of cancer
IM13.9	Demonstrate in a mannequin the correct technique for performing breast exam, rectal examination and cervical examination and pap smear
IM13.10	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis
IM13.11	Order and interpret diagnostic testing based on the clinical diagnosis including CBC and stool occult blood and prostate specific antigen

Number	**Unit 14 - Obesity**
IM14.6	Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history, clues for secondary causes and motivation to lose weight
IM14.7	Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities
IM14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis
IM14.9	Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.

Number	**Unit 15 - GI bleeding**
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed
IM15.4	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors
IM15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination
IM15.6	Distinguish between upper and lower gastrointestinal bleeding based on the clinical features
IM15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent
IM15.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis
IM15.9	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test.
IM15.11	Develop, document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion, and specific therapy for arresting blood loss
IM15.13	Observe cross matching and blood / blood component transfusion
IM15.17	Determine appropriate level of specialist consultation
IM15.18	Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options

Number	**Unit 16 - Diarrheal disorder**
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses
IM16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination
IM16.6	Distinguish between diarrhea and dysentery based on clinical features
IM16.7	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis

IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen
IM16.10	Identify vibrio cholera in a hanging drop specimen
IM16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis

Number	**Unit 17 - Headache**
IM17.2	Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches
IM17.4	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis
IM17.5	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation
IM17.6	Choose and interpret diagnostic testing based on the clinical diagnosis including imaging
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis

Number	**Unit 18 - Cerebrovascular accident**
IM18.3	Elicit and document and present an appropriate history including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident
IM18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history
IM18.9	Choose and interpret the appropriate diagnostic and imaging test that will delineate the anatomy and underlying cause of the lesion
IM18.10	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)
IM18.16	Enumerate the indications describe and observe the multidisciplinary rehabilitation of patients with a CVA

Number	**Unit 19 - Movement disorders**
IM19.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the movement disorders
IM19.4	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales
IM19.5	Generate document and present a differential diagnosis and prioritise based on the history and physical examination
IM19.6	Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings
IM19.7	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders

Number	**Unit 20 - Envenomation**
IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient with a snake bite in the field
IM20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite
IM20.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination
IM20.6	Choose and interpret the appropriate diagnostic testing in patients with snake bites

Number	**Unit 21 - Poisoning**
IM21.5	Observe and describe the functions and role of a poison center in suspected poisoning
IM21.6	Describe the medico legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico legal report on a suspected poisoning

Number	Unit 22 - Mineral, Fluid Electrolyte and Acid base Disorder
IM22.13	Identify the underlying acid based disorder based on an ABG report and clinical situation

Number	Unit 23 - Nutritional and Vitamin Deficiencies
IM23.5	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet

Number	Unit 24 - Geriatrics
IM24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components

Number	Unit 25 - Miscellaneous Infections
IM25.4	Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel
IM25.5	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin, mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)
IM25.9	Assist in the collection of blood and other specimen cultures

Number	Unit 26 - The role of the physician in the community
IM26.19	Demonstrate ability to work in a team of peers and superiors
IM26.20	Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgementaland empathetic manner
IM26.21	Demonstrate respect to patient privacy
IM26.22	Demonstrate ability to maintain confidentiality in patient care
IM26.23	Demonstrate a commitment to continued learning
IM26.24	Demonstrate respect in relationship with patients, fellow team members, superiors and other health careworkers
IM26.25	Demonstrate responsibility and work ethics while working in the health care team
IM26.26	Demonstrate ability to maintain required documentation in health care (including correct use of medicalrecords)
IM26.27	Demonstrate personal grooming that is adequate and appropriate for health care responsibilities
IM26.28	Demonstrate adequate knowledge and use of information technology that permits appropriate patient careand continued learning
IM26.29	Communicate diagnostic and therapeutic opitons to patient and family in a simulated environment
IM26.30	Communicate care opitons to patient and family with a terminal illness in a simulated environment
IM26.31	Demonstrate awareness of limitations and seeks help and consultations appropriately
IM26.32	Demonstrate appropriate respect to colleagues in the profession
IM26.33	Demonstrate an understanding of the implications and the appropriate procedures and response to befollowed in the event of medical errors
IM26.34	Identify conflicts of interest in patient care and professional relationships and describe the correct responseto these conflicts
IM26.35	Demonstrate empathy in patient encounters
IM26.36	Demonstrate ability to balance personal and professional priorities
IM26.37	Demonstrate ability to manage time appropriately
IM26.38	Demonstrate ability to form and function in appropriate professional networks
IM26.39	Demonstrate ability to pursue and seek career advancement
IM26.40	Demonstrate ability to follow risk management and medical error reduction practices where appropriate
IM26.41	Demonstrate ability to work in a mentoring relationship with junior colleagues
IM26.42	Demonstrate commitment to learning and scholarship
IM26.48	Demonstrate altruism

IM26.49	Administer informed consent and approriately adress patient queries to a patient being enrolled in aresearch protocol in a simulated environment

Dermatology

Number	Topic
DR1.2	Identify and grade the various common types of acne
DR2.1	Identify and differentiate vitiligo from other causes of hypopigmented lesions
DR3.2	Demonstrate the grattage test
DR4.1	Identify and distinguish lichen planus lesions from other causes
DR5.2	Identify and differentiate scabies from other lesions in adults and children
DR6.2	Identify and differentiate pediculosis from other skin lesions in adults and children
DR7.2	Identify Candida species in fungal scrapings and KOH mount
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions
DR8.4	Identify and distinguish viral warts from other skin lesions
DR8.5	Identify and distinguish molluscum contagiosum from other skin lesions
DR8.6	Enumerate the indications, describe the procedure and perform a Tzanck smear
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologicexamination
DR9.3	Enumerate the indications and observe the performance of a slit skin smear in patients with leprosy
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations
DR10.2	Identify spirochete in a dark ground microscopy
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases(chancroid, donovanosis and LGV)
DR11.2	Identify and distinguish the dermatologic manifestations of HIV, its complications, opportunistic infectionsand adverse reactions of Therapy.
DR12.2	Identify eczema and differentiate it from lichenification and changes of aging
DR12.5	Define erythroderma. Enumerate and identify the causes of erythroderma. Discuss the treatment
DR12.6	Identify and distinguish exfoliative dermatitis from other skin lesions
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions
DR13.1	Distinguish bulla from vesicles
DR13.2	Demonstrate the Tzanck test, nikolsky sign and bulla spread sign
DR13.3	Calculate the body surface area of involvement of vesiculobullous lesions
DR14.2	Identify and distinguish urticarial from other skin lesions
DR14.3	Demonstrate dermographism
DR14.4	Identify and distinguish angioedema from other skin lesions
DR15.1	Identify and distinguish folliculitis impetigo and carbuncle from other skin lesions
DR15.2	Identify staphylococcus on a gram stain
DR15.4	Enumerate the indications for surgical referral
DR16.1	Identify and distinguish skin lesions of SLE
DR16.2	Identify and distinguish Raynaud's phenomenon
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency

ASSESSMENT

General MedicineReference:

Medical Council of India, Competency Based Assessment Module for Undergraduate Medical EducationTraining Program, Volume II 2019.

Internal assessmentTheory IA:

- 7 Internal assessment exams in General Medicine (one in II MBBS, one in III MBBS – Part I, Five in III MBBS –Part II; Respiratory Medicine, Psychiatry, Dermatology syllabus will included in General medicine internal assessment).
- Formative assessment will include day to day assessment, AETCOM, AITO, Assignments, quiz and tutorials.

Practical IA:

- 4 Internal assessment exams (one in II MBBS, one in III MBBS – Part I, Two in III MBBS – Part II) will beconducted.
- Formative assessments will include day to day assessment Record book / Logbook, AETCOM.

Note: As per new guidelines under Assessment module mentioned above, Internal Assessment marks willnot be added to Final Summative University Examination but will be shown as a separate head under the Subject.

Eligibility to appear for University Examination

Attendance Eligibility	75% in theory and 80% in practical in each subject and in each professional year
Internal Assessment	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)

University examination

Theory Examination
Theory examination consists of two papers (Paper I & II). Each Theory paper will have 100 marks
Question paper pattern -Paper-I

Theory question paper pattern for 100 marks for a duration of 3 hours

MCQ (15 Direct & 5 Case Based):	20 X 1	= 20 marks
Long Answer Question: Direct/Case Based Essay:	2 X 15	= 30 marks
Short Answer Question (SAQ):	10 X 5	= 50 marks

Question paper pattern - Paper-II

Theory question paper pattern for 100 marks for a duration of 3 hours

MCQ (15 Direct & 5 Case Based):	20 X 1	= 20 marks
Section A (General Medicine) Long Answer Question: Direct/Case Based Essay Short Answer Question (SAQ)	 1 X 15 5 X 5	 = 15 marks = 25 marks
Section B (Psychiatry, Dermatology, Venereology & Leprosy, Respiratory Medicine) Long Answer Question: Direct/Case Based Essay Short Answer Question (SAQ)	 1 X 15 5 X 5	 = 15 marks = 25 marks

Syllabus for Paper I & II:

General Medicine Paper I

Unit	Topic
Unit 1, Unit 2, Unit 8	Cardiology
Unit 10	Renal system
Unit 3, Unit 4, Unit 6, Unit 25	Infectious disease and HIV miscellaneous infections
Unit 5, Unit 15, Unit 16	GIT & hepatology
Unit 20, Unit 21,	Toxicology
Unit 23, Unit 14	Nutrition & obesity
Unit 22	Critical care, fluid electrolite and acid based disorders

General Medicine Paper II

Unit	Topic
Unit 17, Unit 18, Unit 19	CNS
Unit 7	Musculoskeletal
Unit 9	Haematology
Unit 11, Unit 12	Endocrinology & diabetes
Unit 13	Oncology
Unit 24, Unit 26	Geriatrics & medical ethics

Psychiatry, Dermatology, Venereology & Leprosy, Respiratory Medicine

Unit	Topic
Unit 1, Unit 2 (CT)	Respiratory System
Unit 1 -19 (PS)	Psychiatry
Unit 1 – 18 (DR)	Dermatology, Venereology & Leprosy

Topics and marks distribution matrix for PAPER - I

General Medicine – 100 Per Paper (200 Marks) (20 MCQ, 2 Essay, 10 Short Notes)

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightage in %	LAQ	SAQ
1.	Cardiology	IM 1.1 TO IM1.19, IM 1.16,1.17, 1.21, 1.24,1.25,1.28,1.29 IM 2.1 TO 2.5, IM 2.13 TO 2.20, 2.23, IM 8.1 TO 8.9, 8.12, 8.13, 8.14, 8.20	3	15 to 18	✓	✓
2.	Renal system	IM 10.1 TO 10.11, 10.14, 10.15,10.16,10.19,10.24,10.26	3	15 to 18	✓	✓
3.	Infectious disease and HIV, Miscellaneous Infections	IM 4.1 TO 4.8, 4.11,4.12,4.16,4.18, 4.21,4.22, IM 6.1 TO 6.9,6.11,6.12,6.13, 6.16,6.17, IM 25.1 TO 25.3, 25.6,25.7,25.8,25,10 IM 3.1 TO 3.3, 3.15 TO 3.17	3	15 to 18	✓	✓

4.	GIT & Hepatology	IM 5.1 TO 5.8, IM 5.11,5.13,5.16,5.18, IM 15.1,15.3,15.10,15.12,5.14,5.15 ,5.16, IM 16.1 TO 16.3. 16.11 TO 16.14,16.16,16.17	3	15 to 18	✓	✓
5.	Toxicology	IM 20.1,20.3,20.7,20.8, 20.9, IM 21.1 TO 21.4, 21.8	3	7 to 10		✓
6.	Nutrition & Obesity	IM 23.1 TO 23.4, IM 14.1 TO 14.5, IM 14.10 ,4.13,14.14,14.15	2	6 to 9		✓
7.	Critical care, fluid electrolite and acid based disorders	IM 22.1 TO 22.12	3	6 to 9		✓

Topics and marks distribution matrix for PAPER II

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightage in %	LAQ	SAQ
1	CNS	IM 17.1,17.3,17.7,17.10 TO 17.13, IM 18.1,18.2,18.4,18.8,18.11 TO 18.15, IM 19.1 ,19.2, 19.8,19.9	3	15 to 18	✓	✓
2	Respiratory Medicine	CT 1.1 TO 1.19, CT 2.1 TO 2.27	3	20	✓	✓
3	Psychiatry	PS 1.1 -1.4, PS 2.1 -2.5, PS 3.1 TO 3.12, 4.1 TO 4.7,PS 5.1 TO 5.5, PS 6.1 TO 6.7, PS 7.1 TO 7.7, PS 8.1 TO 8.7, PS 9.1 TO 9.7, PS 10.1 TO 10.7, PS 11.1 TO 11.7, PS 12.1 TO 12.7, PS 13.1 TO 13.7, PS 14.1 TO 14.6, PS 15.1 TO 15.4, PS 16.1 TO 16.5, PS 17.1 TO 17.3, PS 18.1 TO 18.3 , PS 19.1 TO 19.6	3	15	✓	✓
4	Dermatology, Venereology & Leprosy	DR1.1 to 1.3, 3.1, 3.3, 4.2, 5.1, 5.3,6.1,7.1,7.3,8.1, 8.7, 9.1, 9.4, to DR9.7, 10.3,10.4, 10.6,10.8 to DR11.1, 11.3, 12.1, 12.3, 12.4, 14.1, 14.5, 15.3, 17.1 to DR18.2	3	15	✓	✓
5	Musculoskeletal	IM 7.1 TO 7.10, 7.14 TO 7.17,7.19,7.23,7.27	1	3 to 5		✓
6	Haematology	IM 9.1, 9.2,9.7,9.8,9.11,9.12,9.14,9.17, 9.18,9.21	2	5 to 8		✓
7	Endocrinology & diabetes	IM 12.1 TO 12.4, 12.8, 12.12,12.13,12.15, IM 11.1 TO 11.6, 11.9,11.10,11.14 TO 11.18,11.22 TO 11.24	3	5 to 9		✓
8	Oncology	IM 13.1 TO 13.6, 13.12 TO 13.15,13.17 ,13.18,13.19	1	3 to 5		✓
9	Geriatrics & medical ethics	IM 24.1, 24.3 TO 24.22. IM 26.1 TO 26.8, 26.43 TO 26.47	1	3 to 5		✓

Practical Syllabus

LONG CASE	SHORT CASE

CVA	CVA- Motor system examination
CVS AS,AR,MS,MR,ASD,VSD,Heart Failure	Facial Palsy
Pulmonology COPD, Asthma, Fibro cavity / Fibrosis, Pneumonia, Pleural effusion, Bronchectasis	Pulmonology COPD, Asthma, Fibro cavity / Fibrosis, Pneumonia,Pleural effusion, Bronchectasis
Abdomen Cirrohosis / PHT, Hepato Splenomegaly, Ascites, Hepatomegaly, Splenomegaly	Abdomen Cirrohosis / PHT, Hepato Splenomegaly, Ascites,Hepatomegaly, Splenomegaly
Spotters	
Anemia Pedal Edema Clubbing Cyanosis Psoriasis Tenia versiocolar	Vitiligo Hypo / Hyper thyroidism Rheumatoid Arthritis Hansen's disease

Distribution of Marks for Practical Examinations: Practical examination will be conducted under headsof Practical examination and Viva Voce.

1.	Practical Examination	(160marks)
	LONG CASE	80
	SHORT CASE	50
	SPOTTERS	30
2	Viva –Voce Examination	(40 marks)
	IMAGING	8
	CHARTS	8
	INSTRUMENT	8
	THERAPEUTICS	8
	OSCE	8
	TOTAL MARKS	200 MARKS

	Maximum Marks	**Passing minimum in each component**	**Passing Criteria (Theory & Practical)**
Theory (Paper I & Paper II)	200	100 (40% marks in each of the papers with minimum 50% of marks in aggregate both papers together)	200 [Mandatory 50% marks in theory and practical (practical = practical/ clinical + viva) [theory=theory paper(s) only]
Practical's + viva	200 (160+40)	100 (Minimum 50 % in practical / Viva)	

RECOMMENDED BOOKS:

General MedicineTextbooks:

S. No	**Name of Book**	**Edition**	**Author/Editor**	**Publisher**
1.	Davidson's Principles And Practice of Medicine	23th Edition	Stuart H.Ralston	Elsevier
2.	Kumar & Clark Clinical Medicine	9th Edition	Parveen Kumar, Michael Clark	Elsevier

3.	Hutchinson‘s Clinical Methods	23th Edition	Michael Glynn	Elsevier
4.	Macleod’S Clinical Examination	14th Edition	J.Alastair Innes	Elsevier

Respiratory Medicine

S. No	Title	Author/Editor	Publisher	Edition/Year
1	Harrison’s principles of Internal Medicine	Jameson/ fauci / Kasper/ Hauser/ Longo Loscalzo	Mcgraw Hill	20th Edition
2	Crofton and Douglas Respiratory diseases	Anthony Seaton / Douglas Seaton / A. Gordon Leitch	Blackwell science	5th Edition
3	Toman’s Tuberculosis Case detection, Treatment and Monitoring	Frieden	WHO	2nd Edition

Psychiatry

S. No	Title	Author/Editor	Publisher	Edition/Year
1	Kaplan and Sadock's Synopsis ofPsychiatry	Sadock	Wolters Kluwer	11th Edition
2	International Classification of Diseases– 10	**WHO**	WHO	1994
3	Diagnostic and Statistical Manual ofMental Disorders 5	American Psychiatric Association	American Psychiatric Association	2013
4	Short textbook of Ahuja	Neeraj Ahuja	Jaypee	7th Edition

Dermatology, Venereology & Leprosy

S. No	Name of Book	Author(s)	Edition	Publisher
1	Roxburg Text Book of Dermatology	RonaldMarks,Richard Motley	18th edition	Caroline Makpeace, Jaypee
2	IADVL Concise Textbook Of Dermatology	Vishalakshi Viswanath	4th Edition	Jaypee
3	Andrews' Diseases of the Skin,International Edition: Clinical Dermatology	WilliamJames	12th Edition	Elsevier
4	Thappa Textbook of Dermatology	Devinder Mohan Thappa	4th Edition	Elsevier
5	**Tuberculosis**	S.K Sharma, Alladi Mohan	3rd Edition	Jaypee

DEPARTMENT OF PSYCHIATRY

Psychiatry

Number	Unit 1 - Doctor patient relationship
PS1.1	Establish rapport and empathy with patients
PS1.2	Describe the components of communication
PS1.3	Demonstrate breaking of bad news in a simulated environment
PS1.4	Describe and demonstrate the importance of confidentiality in patient encounters

Number	Unit 2 - Mental health
PS2.1	Define stress and describe its components and causes
PS2.2	Describe the role of time management, study skills, balanced diet and sleep wake habits in stress avoidance
PS2.3	Define and describe the principles and components of learning memory and emotions
PS2.4	Describe the principles of personality development and motivation
PS2.5	Define and distinguish normality and abnormality
Number	**Unit 3 - Introduction to psychiatry**
PS3.1	Describe the growth of psychiatry as a medical specialty, its history and contribution to society
PS3.2	Enumerate, describe and discuss important signs & symptoms of common mental disorders
PS3.3	Elicit, present and document a history in patients presenting with a mental disorder
PS3.4	Describe the importance of establishing rapport with patients
PS3.5	Perform, demonstrate and document a mini mental examination
PS3.6	Describe and discuss biological, psychological & social factors & their interactions in the causation of mental disorders
PS3.7	Enumerate and describe common organic psychiatric disorders, magnitude, etiology and clinical features
PS3.8	Enumerate and describe the essential investigations in patients with organic psychiatric disorders
PS3.9	Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders
PS3.10	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders
PS3.11	Enumerate the appropriate conditions for specialist referral in patients with psychiatric disorders
PS3.12	Describe, discuss and distinguish psychotic & non-psychotic (Mood, Anxiety, Stress related) disorders

Number	Unit 4 -Substance use disorders
PS4.1	Describe the magnitude and etiology of alcohol and substance use disorders
PS4.2	Elicit, describe and document clinical features of alcohol and substance use disorders
PS4.3	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders
PS4.4	Describe the treatment of alcohol and substance abuse disorders including behavioral and pharmacologic therapy
PS4.5	Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment
PS4.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse
PS4.7	Enumerate the appropriate conditions for specialist referral in patients with alcohol and substance abuse disorders

Number	Unit 5 - Psychotic disorders
PS5.1	Classify and describe the magnitude and etiology of schizophrenia & other psychotic disorders
PS5.2	Enumerate, elicit, describe and document clinical features, positive and negative symptoms of schizophrenia
PS5.3	Describe the treatment of schizophrenia including behavioural and pharmacologic therapy
PS5.4	Demonstrate family education in a patient with schizophrenia in a simulated environment
PS5.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia

PS5.6	Enumerate the appropriate conditions for specialist referral in patients with psychotic disorders

Number	Unit 6 - Mood disorder
PS6.1	Classify and describe the magnitude and etiology of depression
PS6.2	Enumerate, elicit, describe and document clinical features in patients with depression
PS6.3	Enumerate and describe the indications and interpret laboratory and other tests used in depression
PS6.4	Describe the treatment of depression including behavioural and pharmacologic therapy
PS6.5	Demonstrate family education in a patient with depression in a simulated environment
PS6.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in depression
PS6.7	Enumerate the appropriate conditions for specialist referral in patients with depression

Number	Unit 7 - Bipolar disorder
PS7.1	Classify and describe the magnitude and etiology of bipolar disorders
PS7.2	Enumerate, elicit, describe and document clinical features in patients with bipolar disorders
PS7.3	Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders
PS7.4	Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy
PS7.5	Demonstrate family education in a patient with bipolar disorders in a simulated environment
PS7.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders
PS7.7	Enumerate the appropriate conditions for specialist referral in patients with bipolar disorders

Number	Unit 8 - Anxiety disorders
PS8.1	Enumerate and describe the magnitude and etiology of anxiety disorders
PS8.2	Enumerate, elicit, describe and document clinical features in patients with anxiety disorders
PS8.3	Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders
PS8.4	Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy
PS8.5	Demonstrate family education in a patient with anxiety disorders in a simulated environment.
PS8.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders
PS8.7	Enumerate the appropriate conditions for specialist referral in anxiety disorders

Number	Unit 9 - Stress related disorders
PS9.1	Enumerate and describe the magnitude and etiology of stress related disorders
PS9.2	Enumerate, elicit, describe and document clinical features in patients with stress related disorders
PS9.3	Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders
PS9.4	Describe the treatment of stress related disorders including behavioural and psychosocial therapy
PS9.5	Demonstrate family education in a patient with stress related disorders in a simulated environment
PS9.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in stress related disorders
PS9.7	Enumerate the appropriate conditions for specialist referral in stress disorders

Number	Unit 10 - Somatoform disorders
PS10.1	Enumerate and describe the magnitude and etiology of somatoform, dissociative and conversion disorders
PS10.2	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders
PS10.3	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders
PS10.4	Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy

PS10.5	Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a simulated environment
PS10.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders;
PS10.7	Enumerate the appropriate conditions for specialist referral in patients with somato form dissociative and conversion disorders

Number	Unit 11 - Personality disorders
PS11.1	Enumerate and describe the magnitude and etiology of personality disorders
PS11.2	Enumerate, elicit, describe and document clinical features in patients with personality disorders
PS11.3	Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders
PS11.4	Describe the treatment of personality disorders including behavioural, psychosocial and pharmacologic therapy
PS11.5	Demonstrate family education in a patient with personality disorders in a simulated environment
PS11.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders
PS11.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 12 - Psychosomatic disorders
PS12.1	Enumerate and describe the magnitude and etiology of psychosomatic disorders
PS12.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders
PS12.3	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders
PS12.4	Describe the treatment of **psychosomatic** disorders including behavioural, psychosocial and pharmacologic therapy
PS12.5	Demonstrate family education in a patient with psychosomatic disorders in a simulated environment
PS12.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders
PS12.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 13 - Psychosexual and gender identity disorders
PS13.1	Enumerate and describe the magnitude and etiology of psychosexual and gender identity disorders
PS13.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders
PS13.3	Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual and gender identity disorders
PS13.4	Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial and pharmacologic therapy
PS13.5	Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment
PS13.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosexual and gender identity disorders
PS13.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 14 - Psychiatric disorders in childhood and adolescence
PS14.1	Enumerate and describe the magnitude and etiology of psychiatric disorders occurring in childhood and adolescence
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence
PS14.3	Describe the treatment of stress related disorders including behavioural, psychosocial and pharmacologic therapy

PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment
PS14.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders occurring in childhood and adolescence
PS14.6	Enumerate the appropriate conditions for specialist referral in children and adolescents with psychiatric disorders

Number	**Unit 15 - Mental retardation**
PS15.1	Describe the aetiology and magnitude of mental retardation
PS15.2	Describe and discuss intelligence quotient and its measurement
PS15.3	Elicit and document a history and clinical examination and choose appropriate investigations in a patient with mental retardation
PS15.4	Describe the psychosocial interventions and treatment used in mental retardation

Number	**Unit 16 - Psychiatric disorders in the elderly**
PS16.1	Enumerate and describe common psychiatric disorders in the elderly including dementia, depression and psychosis
PS16.2	Describe the aetiology and magnitude of psychiatric illness in the elderly
PS16.3	Describe the therapy of psychiatric illness in elderly including psychosocial and behavioural therapy
PS16.4	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment
PS16.5	Enumerate the appropriate conditions for specialist referral in psychiatric disorders in the elderly

Number	**Unit 17 - Psychiatric disorders in childhood and adolescence**
PS17.1	Enumerate and describe the recognition and clinical presentation of psychiatric emergencies (Suicide, Deliberate Self Harm, Violent behaviour)
PS17.2	Describe the initial stabilisation and management of psychiatric emergencies
PS17.3	Enumerate the appropriate conditions for specialist referral in patients with psychiatric emergencies

Number	**Unit 18 - Therapeutics**
PS18.1	Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs

	in psychiatric disorders
PS18.2	Enumerate the indications for modified electroconvulsive therapy
PS18.3	Enumerate and describe the principles and role of psychosocial interventions in psychiatric illness including psychotherapy, behavioural therapy and rehabilitation

Number	**Unit 19 - Miscellaneous**
PS19.1	Describe the relevance, role and status of community psychiatry
PS19.2	Describe the objectives strategies and contents of the National Mental Health Programme
PS19.3	Describe and discuss the basic legal and ethical issues in psychiatry
PS19.4	Enumerate and describe the salient features of the prevalent mental health laws in India
PS19.5	Describe the concept and principles of preventive psychiatry and mental health promotion (positive mental health); and community education
PS19.6	Enumerate and describe the identifying features and the principles of participatory management of mental illness occurring during and after disasters

Department of Dermatology Venereology and Leprosy

TABLE OF CONTENTS

GOALS

The broad goal of the teaching of Undergraduate students in Dermatology, Venereology and Leprosy is to producegraduates capable of independently diagnosing and clinically evaluating basic skin lesions and further investigatingthem. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practiceof Dermatology, Venereology & Leprosy, as a part of General Medicine through exposure to general and autoimmune skin disorders. The student must appreciate the medical management and basic foundations underlying The care of patients with dermatological complaints

COMPETENCIES

Theundergraduatestudentmustdemonstrate:

- Understandingoftheprinciplesofdiagnosisofdiseasesoftheskin,hair,nailandmucosa
- Abilitytorecognize,diagnose,orderappropriateinvestigationsandtreatcommondisease softheskinincludingleprosyintheprimary caresettingandreferasappropriate
- Asyndromeapproachtotherecognition,diagnosis,prevention,counseling,testingand managementofcommonsexuallytransmitteddiseasesincludingHIVbasedonnationalh ealthpriorities
- Abilitytorecognizeandtreatemergenciesincludingdrugreactions andreferasappropriate.

OBJECTIVES

Skills

Attheendofthecourse,thestudentshouldbe able to:

- ExplainthebasicskinlesionsclinicallyandBedsideinvestigationsforthesame.
- ClinicalEvaluationsandbedsideDemonstrationforLaboratorydiagnosis-
  - KOHmount forFungus
  - Gramstain
  - Scrapingandmountingforinfestations
- Clinicalevaluationsoflesionsandnerveexaminationsfor Hansen’sDiseasewithSSS(

slitskinsmear)andskinbiopsy.

- Describethevariouscutaneousfindingsandclinicalaspectsofconditionslikesystemic lupuserythematosus,Scleroderma,Dermatomyositis etc.

AttitudeandCommunication

- Communicationwithempathytopatients&patient's attenders.
- Tocounsel&obtaininformedconsentfrompatient&patientsattenders.

Integration

The teaching should be aligned and integrated horizontally and vertically in order to emphasize the biologic basis ofdiseasesoftheskin,sexuallytransmitteddiseasesandleprosyandtoprovideanunderstanding thatskindiseasesmaybeamanifestationofsystemic disease.

TERMS AND TEACHING GUIDELINES

1. LECTURE

Is a teaching learning method which includes traditional and interactive sessions involving a large group

2. SMALL GROUP DISCUSSION

Is an instructional method involving small groups of students in an appropriate learning context.

3. DOAP (Demonstration- Observation - Assistance - Performance)

A practical session that allows the student to observe demonstration, assists the performer, perform in a simulated environment, perform under supervision or perform independently.

4. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning, choosing and implementing appropriate learning methods.

5. SKILL ASSESSMENT

Is a session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know.

MINIMUM TEACHING HOURS

Table: Distribution of subjects by Professional Phase

Third Professional MBBS Part I	General Medicine, General Surgery, Obstetrics &Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radio diagnosis & Radiotherapy, Anesthesiology Clinical subjects /postings Attitude, Ethics & Communication Module (AETCOM)	13 months	III Professional (Part I)

THEORYSYLLABUS:TOPICANDTHECOMPETENCIES

Competencies	**Topic1-Acne,(Etiopathogenesis &Management)**
DR1.1	Enumeratethecausativeandriskfactorsofacne
DR1.3	Describethetreatment andpreventivemeasuresforvariouskindsof acne

Competencies	**Topic2-Vitiligovulgaris**
DR2.2	Describethetreatmentofvitiligo

Competencies	**Topic3-Papulosquamous disorders**
DR3.1	Identifyanddistinguishpsoriatic lesionsfromothercauses
DR3.3	Enumeratetheindicationsforanddescribethevariousmodalitiesoftreatmentofpsoriasis.

Competencies	**Topic4-LichenPlanus**
DR4.2	Enumerateanddescribethetreatmentmodalitiesforlichenplanus

Competencies	**Topic5-Scabies**
DR5.1	Describetheetiology,microbiology,pathogenesis,naturalhistory,clinicalfeatures,presentationsandcomplicationsofscabies inadults andchildren
DR5.3	Enumerateanddescribethepharmacology,administrationandadversereactionofpharmacotherapiesforscabies

Competencies	**Topic6-Pediculosis**
DR6.1	Describetheetiologypathogenesisanddiagnosticfeaturesofpediculosisinadultsandchildren

Competencies	**Topic 7-Dermatophytosis**

DR7.1	Describetheetiology,microbiology,pathogenesisandclinicalpresentationsanddiagnosticfeaturesofdermatophytosisinadultsandchildren
DR7.3	Describethepharmacologyandactionofantifungal(systemicandtopical)agents.Enumeratesideeffectsofantifungal therapy

Competencies	**Topic8-Viralinfections**
DR8.1	Describetheetiology,microbiology,pathogenesisandclinicalpresentationsanddiagnosticfeaturesofcommonviralinfections oftheskin inadults andchildren
DR8.7	Enumeratetheindicationsanddescribethepharmacology,administrationandadversereactionofpharmacotherapiesfor commonviral illnessesoftheskin

Competencies	**Topic9-Leprosy**
DR9.1	Classify,describethe epidemiology,etiology,microbiology,pathogenesis,clinicalpresentationsanddiagnosticfeaturesofLeprosy
DR9.4	Enumerate,describeandidentifyleprareactionsandsupportivemeasures andtherapyofleprareactions
DR9.5	Enumeratetheindicationsanddescribethepharmacology,administrationandadversereactionofpharmacotherapiesforvarious classesof leprosy basedonnationalguidelines
DR9.6	DescribethetreatmentofLeprosybasedon thecurrentguidelines
DR9.7	Enumerateanddescribethecomplicationsofleprosyanditsmanagement.

Competencies	**Topic10- SexuallyTransmittedDiseases**
DR10.3	Enumeratetheindicationsanddescribethepharmacology,administrationandadversereactionofpharmacotherapiesfor syphilis
DR10.4	Describethepreventionofcongenitalsyphilis
DR10.6	Describetheetiology,diagnosticandclinicalfeatures ofnonsyphiliticsexuallytransmitteddiseases(chancroid, donovanosis andLGV)
DR10.8	Enumeratetheindicationsanddescribethepharmacology,indicationsandadversereactionsofdrugsusedinthenonsyphilitic sexuallytransmitted diseases (chancroid,donovanosisandLGV)
DR10.9	Describethesyndromicapproachtoulcerativesexuallytransmitteddisease.
DR10.10	Describe the etiology, diagnostic and clinical features and management of gonococcal and non-gonococcalurethritis.
DR10.11	Describetheetiology,diagnosticandclinicalfeaturesandmanagementofvaginaldischarge.

Competencies	**Topic 11-HIV**
DR11.1	Describetheetiology,pathogenesisandclinicalfeaturesofthe dermatologicmanifestationsofHIV
DR11.3	Enumeratetheindicationsanddescribethepharmacology, administrationandadversereactionofpharmacotherapiesfor dermatologic lesions in HIV

Competencies	**Topic12-Dermatitis and Eczema**

DR12.1	Describetheetiopathogenesisofeczema
DR12.3	Classifyandgradeeczema
DR12.4	Enumeratetheindicationsanddescribethepharmacology, indicationsandadversereactionsofdrugsusedinthetreatmentofeczema

Competencies	**Topic14-UrticariaAngioedema**
DR14.1	Describetheetiology,pathogenesisandclinicalprecipitatingfeaturesandclassificationofUrticariaandangioedema.
DR14.5	Enumeratetheindicationsanddescribethepharmacologyindicationsandadversereactionofdrugsusedintheurticariaandangioedema

Competencies	**Topic 17-NutritionalDeficiencies and Skin**
DR17.1	Enumerateandidentifythecutaneousfindings invitaminAdeficiency
DR17.2	Enumerateanddescribethevariousskinchangesin Vitamin Bcomplexdeficiency
DR17.3	Enumerateanddescribethevariouschangesin VitaminCdeficiencyK
DR17.4	EnumerateanddescribethevariouschangesinZincdeficiency

Competencies	**Topic 15-Pyoderma**
DR15.1	Enumerateandidentifypyodermalesions
DR15.3	Enumeratetheindicationsanddescribethepharmacology, indicationsandadversereactionsoftopicalandsystemicdrugs
DR15.4	Enumerateanddescribethevariousskinchangesin Vitamin Bcomplexdeficiency

Competencies	**Topic18- Systemicdiseasesandtheskin**
DR18.1	EnumeratethecutaneousfeaturesofType2diabetes
DR18.2	Enumeratethecutaneousfeaturesofhypo/hyper-thyroidism

PRACTICAL SYLLABUS: TOPIC AND THE COMPETENCIES

Competency	**Topic**
DR1.2	Identifyandgrade thevariouscommontypes ofacne
DR2.1	Identifyanddifferentiatevitiligofromothercausesofhypo pigmentedlesions
DR3.2	Demonstratethe grattagetest
DR4.1	Identifyanddistinguishlichenplanuslesionsfromothercauses
DR5.2	Identifyanddifferentiatescabiesfromother lesionsinadultsandchildren
DR6.2	Identifyanddifferentiatepediculosisfromotherskinlesionsinadultsandchildren
DR7.2	IdentifyCandidaspeciesinfungalscrapingsandKOH mount
DR8.2	Identifyanddistinguishherpessimplex andherpeslabialisfromotherskinlesions
DR8.3	Identifyanddistinguishherpeszosterandvaricellafromotherskinlesions
DR8.4	Identifyanddistinguishviralwarts fromotherskinlesions
DR8.5	Identifyanddistinguishmolluscumcontagiosumfromotherskinlesions
DR8.6	Enumeratetheindications,describetheprocedure andperformaTzancksmear
DR9.2	Demonstrate(andclassifybasedon)theclinicalfeaturesofleprosyincludinganappropriateneurologicexamination
DR9.3	Enumeratetheindications andobservetheperformanceofaslitskinsmear

	inpatientswithleprosy
DR10.1	Identifyandclassifysyphilisbasedonthepresentationandclinicalmanifestations
DR10.2	Identifyspirocheteinadarkgroundmicroscopy
DR10.7	Identifyanddifferentiatebasedontheclinicalfeaturesnon-syphiliticsexuallytransmitteddiseases(chancroid, donovanosis andLGV)
DR11.2	Identifyanddistinguishthedermatologicmanifestationsof HIV,itscomplications,opportunisticinfectionsand adversereactionsofTherapy.
DR12.2	Identifyeczemaanddifferentiateitfromlichenificationandchangesofaging
DR12.5	Defineerythroderma.Enumerateandidentifythecausesoferythroderma.Discussthetreatment
DR12.6	Identifyanddistinguishexfoliativedermatitisfromotherskinlesions
DR12.7	IdentifyanddistinguishfixeddrugeruptionsandStevenJohnsonsyndromefromotherskinlesions
DR13.1	Distinguishbullafromvesicles
DR13.2	DemonstratetheTzancktest,Nikolskysignandbullaspreadsign
DR13.3	Calculatethebodysurfaceareaofinvolvementofvesiculobullouslesions
DR14.2	Identifyanddistinguishurticarialfromotherskin lesions
DR14.3	Demonstratedermographism
DR14.4	Identifyanddistinguishangioedemafromotherskinlesions
DR15.1	Identifyanddistinguishfolliculitisimpetigoandcarbunclefromotherskinlesions
DR15.2	Identifystaphylococcusonagramstain
DR15.4	Enumeratetheindicationsforsurgicalreferral
DR16.1	IdentifyanddistinguishskinlesionsofSLE
DR16.2	IdentifyanddistinguishRaynaud'sphenomenon
DR17.1	Enumerateandidentifythecutaneousfindings invitaminAdeficiency

Sl.No	Topic	Competency No	No of Teaching Hours	Teaching- Learning method
1	Acne	DR1.1 DR1.3	1 hour	Lecture/ small group discussion
2.	Psoriasis	DR3.3	2 hours	Lecture/ small group discussion
3.	Lichen Planus	DR4.2	1 hour	Lecture/ small group discussion
4.	Vitiligo	DR2.2	1 hour	Lecture/ small group discussion
5.	Scabies	DR5.1 DR5.3	1 hour	Lecture/ small group discussion
6.	Pediculosis	DR6.1	1 hour	Lecture/ small group discussion
7.	Leprosy	DR9.1 DR9.4 DR9.5 DR9.6 DR9.7	5 hour	Lecture/ small group discussion
8.	Sexually Transmitted Diseases	DR10.3 DR10.4 DR10.5 DR10.6 DR10.7 DR10.8 DR10.9 DR10.10 DR10.11	7 hour	Lecture/ small group discussion
9.	Urticarial/Angioedema	DR14.1 DR14.5	2 hour	Lecture/ small group discussion
10	Eczema/Dermatits	DR12.1 DR12.3 DR12.4	2 hour	Lecture/ small group discussion
11.	Viral Infections	DR8.1 DR8.7	3 hour	Lecture/ small group discussion
12.	Fungal Infections	DR7.1 DR7.3	1 hour	Lecture/ small group discussion
13.	HIV	DR11.1 DR11.3	2 hour	Lecture/ small group discussion
14.	Nutritional Deficiencies and Skin	DR17.1 DR17.2 DR17.3 DR17.4	2 hour	Lecture/ small group discussion
15.	Systemic Diseases and Skin	DR18.1 DR18.2	2 hour	Lecture/ small group discussion

16.	Pyodermas	DR15.3	1hour	Lecture/ small group discussion
	Total		34 hours	

S .NO.	Topic	Teaching Method
1.	Urticaria and Angioedema – Diagnosis and Demonstration of Dermographism, Differential Diagnosis	Bed side clinics
2.	Dermatophytic Infections – Diagnosis, Differential Diagnosis, KOH mount in fungal infections	Bed side clinics/ DOAP
3.	Acne – Diagnosis, grading and differential diagnosis	Bed side clinics
4.	Psoriasis – Diagnosis, grattage test	Bed side clinics
5.	Lichen planus – Diagnosis, and differential diagnosis	Bed side clinics
6.	Scabies – Identification and differential diagnosis	Bed side clinics
7.	Sunday	-
8.	Viral infections – diagnosis and (herpes simplex) Differential diagnosis	Bed side clinics
9.	Tzanck smear, Signs in Vesiculobullous disorders	DOAP
10.	Leprosy – clinical examination and peripheral nerve palpation	Bed side clinics
11.	Slit skin smear	DOAP

12.	Genital ulcer – diagnosis and differential diagnosis	Bed side clinics
13.	Formative Assessment	-

COMPETENCIES, SPECIFIC LEARNING OBJECTIVES, TEACHING LEARNING AND ASSESSMENT METHODS

Number	COMPETENCY The student should be able to	Domain K/S/A /C	Level K/KH/SH/P	Core (Y/N)	Specific learning objectives (SLO)	Teaching-Learning Methods (TLM)	Assessment Method
Topic: Acne			Number of competencies:(03)				
DR1.1	Enumerate the causative and risk factors of acne	K	K	Y	DR1.1.1Define acne and enumerate various precipitating risk factors of acne DR1.1.2 Enumerate five syndromes associated with acne	Small group discussion	Written/ Viva voce
DR1.2	Identify and grade the various common types of acne	S	SH	Y	DR1.2.1 Identify various lesions seen in acne vulgaris DR1.2.2 Assess the clinical severity of acne by grading DR1.2.3 Enumerate variants of acne.	Bedside clinic	Skill assessment
DR1.3	Describe the treatment and preventive measures for various kinds of acne	K	K	Y	DR1.3.1 Enumerate topical agents used in acne vulgaris DR1.3.2 Enumerate systemic agents used in the treatment of acne vulgaris DR1.3.3 Describe the preventive measures in acne	Small group discussion	Written/ Viva voce
Topic: Vitiligo			Number of competencies: (02)				
DR2.1	Identify and differentiate vitiligo from other causes of hypopigmented lesions	S	S	Y	DR2.1.1Describe the morphology of vitiligo DR2.1.2 Enumerate differential diagnosis for hypopigmented lesions and distinguish	Bedside clinic	Skill assessment

					them from vitiligo		
DR2.2	Describe the treatment of vitiligo	K	K	Y	DR2.2.1Enumerate various topicals and systemic agents used in the treatment of vitiligo DR2.2.2 Enumerate indications for surgical management of vitiligo	Small group discussion	Written/ Viva voce
Topic: Papulosquamous disorders				Number of competencies:(03)			
DR3.1	Identify and distinguish psoriatic lesions from other causes	K	SH	Y	DR3.1.1 Describe the clinical features and presentation of psoriasis DR3.1.2 Enumerate the differential diagnosis and distinguish from psoriasis	Bedside clinic	Skill assessment/ Viva voce
DR3.2	Demonstrate the grattage test	S	SH	Y	DR3.2.1Define Grattage test and Auspitz sign DR3.2.2Demonstrate Grattage test and Auspitz sign	Bedside clinic	Skill assessment
DR3.3	Enumerate the indications for and describe the various modalities of treatment of psoriasis including topical, systemic and phototherapy	K	KH	Y	DR3.3.1Assess the severity of psoriasis by PASI DR3.3.2Enumerate and describe the advantages and disadvantages of topical treatments of psoriasis DR3.3.3enumerate the indications of systemic treatment and various systemic drugs useful in psoriasis DR3.3.4discuss the indications, procedure, advantages and complications of phototherapy	Lecture	Written/ Viva voce
Topic: Lichen Planus				Number of competencies:(02)			
DR4.1	Identify and distinguish lichen planus lesions from other causes	S	SH	Y	DR4.1.1Define lichen planus and describe morphology and its variants	Bedside clinic	Skill assessment

					DR4.1.2Enumerate the differential diagnosis and distinguish lichen planus from other lesions		
DR4.2	Enumerate and describe the treatment modalities for lichen planus	K	KH	Y	DR4.2.1 Enumerate the treatment modalities for lichen planus DR4.2.2Describe the management and complications of limited and wide spread lichen planus	Small group discussion	Written/ Viva voce
Topic: Scabies			Number of competencies:(03)				
DR5.1	Describe the etiology, microbiology, pathogenesis, natural history, clinical features, presentations and complications of scabies in adults and children	K	KH	Y	DR5.1.1Describe the epidemiology, etiopathogenesis microbiology of scabies DR5.1.2Describe the clinical presentation of scabies in children and how it differs in adults DR5.1.3Enumerate the complications in untreated scabies	Lecture	Written/ Viva voce
DR5.2	Identify and differentiate scabies from other lesions in adults and children	S	SH	Y	DR5.2.1 Identify burrow, mite and specific sites of involvement in scabies DR5.2.2Enumerate the differential diagnosis for scabies in children and adults DR5.2.3 Differentiate scabies from other conditions	Bedside clinic	Skill assessment
DR5.3	Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies for scabies	K	KH	Y	DR5.3.1Enumerate various topicals and systemic treatments of scabies DR5.3.2Describe the pharmacology, administration and adverse reaction of pharmacotherapies for	Lecture	Written/ Viva voce

					scabies DR5.3.3Describe the management of different variants of scabies DR5.3.4 Discuss the general and additional measures in the management of scabies		
Topic: Pediculosis				Number of competencies : (02)			
DR6.1	Describe the etiology, pathogenesis and diagnostic features of pediculosis in adults and children	K	KH	Y	DR6.1.1Describe the epidemiology and etiopathogenesis of pediculosis DR6.1.2Discuss the clinical presentation of pediculosis in children and adults	Lecture	Written/ Viva voce
DR6.2	Identify and differentiate pediculosis from other skin lesions in adults and children	S	SH	Y	DR6.2.1Enumerate the differential diagnosis of pediculosis DR6.2.2Distinguish pediculosis from other lesions in children and adults	Bedside clinic	Skill assessment
Topic: Fungal Infections				Number of competencies: (03)			
DR7.1	Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of dermatophytes in adults and children	K	KH	Y	DR7.1.1Describe the etiology, microbiology and pathogenesis of dermatophytes DR7.1.2Discuss the clinical presentations of ringworm syndromes	Lecture	Written/ Viva voce
DR7.2	Identify Candida species in fungal scrapings and KOH mount	S	SH	Y	DR7.2.1Enumerate the steps in performing KOH mount DR7.2.2Prepare a KOH mount from skin scrapings DR7.2.3Identify Candida species in KOH mount	DOAP session	Skill assessment

					DR7.2.4Identify dermatophytes in KOH mount DR7.2.5Identify Malassezia in KOH mount		
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy	K	KH	Y	Dr7.3.1Classify the topical and systemic antifungals DR7.3.2Describe the pharmacology and mechanism of action of antifungals DR7.3.3Enumerate the side effects of antifungal therapy	Lecture	Written/ Viva voce
Topic: Viral infections Number of competencies (07)							
DR8.1	Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin in adults and children	K	KH	Y	DR8.1.1Enumerate common cutaneous viral infections in children DR8.1.2Enumerate common cutaneous viral infections in adults DR8.1.3Discuss the etiopathogenesis, clinical presentations and diagnosis of various viral infections of skin in children and adults	Lecture	Written/ Viva voce
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions	S	SH	Y	DR8.2.1Enumerate the differential diagnosis of oral ulcers DR8.2.2Identify herpes labialis from other skin lesions	DOAP session	Skill assessment
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions	S	SH	Y	DR8.3.1 Describe the clinical manifestations of varicella and herpes zoster DR8.3.2Enumerate differential diagnosis	DOAP session	Skill assessment

					for varicella and herpes zoster DR8.3.3Identify and differentiate varicella and herpes zoster		
DR8.4	Identify and distinguish viral warts from other skin lesions	S	SH	Y	DR8.4.1Discuss the clinical presentation of cutaneous warts DR8.4.2Identify and distinguish cutaneous warts from other skin lesions	DOAP session	Skill assessment
DR8.5	Identify and distinguish molluscum contagiosum from other skin lesions	S	SH	Y	DR8.5.1Describe the clinical presentation of molluscum contagiosum DR8.5.2Identify molluscum contagiosum and differentiate it from other cutaneous lesions	DOAP session	Skill assessment
DR8.6	Enumerate the indications, describe the procedure and perform a Tzanck smear	S	SH	Y	DR8.6.1Define Tzanck smear DR8.6.2 Enumerate the indications of Tzanck smear DR8.6.3 Describe the steps to obtain a Tzanck smear DR8.6.4 Demonstrate the steps to obtain a Tzanck smear and identify multinucleate giant cells	DOAP session	Skill assessment
DR8.7	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin	K	KH	Y	DR8.7.1 Enumerate the indications of antivirals in common cutaneous viral infections DR8.7.2 Describe the pharmacology, administration and adverse reactions of antivirals in the treatment of cutaneous viral infections	Lecture	Written/ Viva voce
Topic: Leprosy				Number of competencies: (07)			
DR9.1	Classify describe the epidemiology etiology, microbiology, pathogenesis, clinical presentations and	K	KH	Y	DR9.1.1Define leprosy DR9.1.2Describe the epidemiology, etiopathogenesis of leprosy DR9.1.3 Enumerate various classifications of	Lecture, Small group discussion	Written/ Viva voce

	diagnostic features of Leprosy				leprosy DR9.1.3Discuss in detail the clinical manifestations and diagnosis of leprosy		
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination	S	SH	Y	DR9.2.1Demonstrate sensory examination in the different clinical variants of leprosy DR9.2.2Perform peripheral nerve examination in a leprosy case	Bedside clinic	Bedside clinic/skill assessment
DR9.3	Enumerate the indications and observe the performance of a slit skin smear in patients with leprosy	S	KH	Y	DR9.3.1Enumerate the indications of slit skin smear DR9.3.2Demonstrate the steps in obtaining a slit skin smear DR9.3.3Perform a slit skin smear and identify M.leprae in the smear	DOAP session	Written/ Viva voce
DR9.4	Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions	K	KH	Y	DR9.4.1Enumerate the types of lepra reactions DR9.4.2 Describe the clinical presentation and diagnosis of lepra reactions DR9.4.3 Discuss the management of lepra reactions	Small group discussion	Written/ Viva voce
DR9.5	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines	K	KH	Y	DR9.5.1 Enumerate the drugs used in the Treatment of leprosy DR9.5.2 Describe the pharmacology, administration and adverse reactions of anti-leprosy drugs based on national guidelines	Lecture	Written/ Viva voce
DR9.6	Describe the treatment of Leprosy based on the WHO guidelines	K	KH	Y	DR9.6.1 Define the drugs in paucibacillary and multibacillary leprosy based on WHO guidelines DR9.6.2 Describe in detail the indications, contraindications and	Lecture	Written/ Viva voce

					adverse effects of antileprosy drugs		
DR9.7	Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma.	K	KH	Y	DR9.7.1 Enumerate various complications of leprosy DR9.7.2 Describe the management of complications of leprosy DR9.7.3 Describe the prevention and management of disability and stigma	Lecture	Written/ Viva voce
Topic: Sexually Transmitted Diseases				Number of competencies: (11)			
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations	S	SH	Y	DR10.1.1 Define syphilis DR10.1.2Describe the clinical manifestations of syphilis DR10.1.3Classify syphilis based on clinical presentation	Bedside clinic	Skill assessment
DR10.2	Identify spirochete in a dark ground microscopy	S	SH	Y	DR10.2.1 Identify spirochete in a dark ground microscope	DOAP session	Skill assessment
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis	K	KH	Y	Dr10.3.1Enumerate the drugs in the management of syphilis DR10.3.2Describe the pharmacology, administration and adverse reactions of drugs in syphilis	Lecture	Written/ Viva voce
DR10.4	Describe the prevention of congenital syphilis	K	KH	Y	DR10.4.1 Define congenital syphilis DR10.4.2Describe the clinical manifestations of congenital syphilis DR10.4.3Describe the preventive measures of congenital syphilis	Lecture	Written/ Viva voce
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease	C	SH	Y	DR10.5.1 Counsel the patient in a non-judgmental and empathetic manner on prevention of sexually transmitted disease	DOAP session	Skill assessment
DR10.6	Describe the etiology, diagnostic and clinical features of nonsyphilitic	K	KH	Y	DR10.6.1 Describe the etiology, diagnostic and clinical features of chancroid	Lecture	Written/ Viva voce

	sexually transmitted diseases (chancroid, donovanosis and LGV)				DR10.6.2 Describe the etiology, diagnostic and clinical features of Donovanosis DR10.6.3 Describe the etiology, clinical and diagnostic features of LGV		
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	S	SH	Y	DR10.7.1 Enumerate the causes of genital ulcer DR10.7.2 Identify and differentiate the causes of genital ulcer based on clinical features	Bedside clinic	Skill assessment
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the nonsyphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	DR10.8.1 Enumerate the drugs used in management of non-syphilitic sexually transmitted diseases DR10.8.2 Describe the indications and adverse reactions of drugs used in the management of non-syphilitic sexually transmitted diseases	Lecture	Written/ Viva voce
DR10.9	Describe the syndromic approach to ulcerative sexually transmitted disease	KK	KH	Y	DR10.9.1Define syndromic approach to genital ulcer disease DR10.9.2 Discuss the various kits used in syndromic management of sexually transmitted diseases	Lecture	Written/ Viva voce
DR10.10	Describe the etiology, diagnostic and clinical features and management of gonococcal and non-gonococcal urethritis	K	KH	Y	DR10.10.1 Describe the etiopathogenesis of gonococcal urethritis DR10.10.2 Describe the clinical presentation and management of gonococcal urethritis DR10.10.3Enumerate the cause for non-gonococcal urethritis DR10.10.4 Describe the clinical features and management of non-	Lecture	Written/ Viva voce

					gonococcal urethritis		
DR10.11	Describe the etiology, diagnostic and clinical features and management of vaginal discharge	K	KH	Y	DR10.11.1 Enumerate the causes of vaginal discharge DR10.11.2 Describe the etiopathogenesis, clinical features and management of vaginal discharge	Lecture	Written/ Viva voce
Topic: HIV				Number of competencies: (03)			
DR11.1	Describe the etiology, pathogenesis and clinical features of the dermatologic manifestations of HIV and its complications including opportunistic infections	K	KH	Y	DR11.1.1Enumerate dermatological manifestations of HIV DR11.1.2Describe the etiology and pathogenesis of dermatological manifestations of HIV DR11.1.3Discuss the cutaneous manifestations of HIV DR11.1.4Discuss the complications and opportunistic infections that occur in HIV	Small group discussion	Written/ Viva voce
DR11.2	Identify and distinguish the dermatologic manifestations of HIV, its complications, opportunistic infections and adverse reactions	S	SH	Y	DR11.2.1 Identify dermatological manifestations of HIV DR11.2.2Discuss various complications and opportunistic infections in HIV DR11.2.3 Enumerate Cutaneous side effects of non-ARV drugs in patients with HIV DR11.2.4 Define IRIS and discuss Dermatological manifestations of IRIS	Bedside clinic	Skill assessment
DR11.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV	K	KH	Y	DR11.3.1Enumerate the indications and treatment options for dermatologic lesions in HIV DR11.3.2Describe the pharmacology, administration and adverse reactions of pharmacotherapies for skin lesions in HIV	Lecture	Written/ Viva voce
Topic: Dermatitis and Eczema				Number of competencies: (07)			

DR12.1	Describe the etiopathogenesis of eczema	K	KH	Y	DR12.1.1 Define eczema DR12.1.2Describe the etiopathogenesis of eczemas	Lecture	Written/ Viva voce
DR12.2	Identify eczema and differentiate it from lichenification and changes of aging	S	SH	Y	DR12.2.1Identification of various types of eczemas DR12.2.2Differentiate eczema, lichenification and erythroderma	Bedside clinic	Skill assessment
DR12.3	Classify and grade eczema	K	KH	Y	DR12.3.1Discuss the classification of eczemas DR12.3.2Assess the severity of eczema by grading	Small group discussion	Written/ Viva voce
DR12.4	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the treatment of eczema	K	KH	Y	DR12.4.1Enumerate the drugs used in the treatment of Eczemas DR12.4.2 Describe the pharmacology, indications, contraindications and adverse reactions of drugs used in management of Eczemas	Lecture	Written/ Viva voce
DR12.5	Define erythroderma. Enumerate and identify the causes of erythroderma. Discuss the treatment	S	KH	Y	DR12.5.1 Define erythroderma DR12.5.2Enumerate the causes of erythroderma and distinguish the causes of erythroderma DR12.5.3Discuss the management of erythrodermas	Bedside clinic	Skill assessment
DR12.6	Identify and distinguish exfoliative dermatitis from other skin lesions	S	SH	Y	DR12.6.1 Define exfoliative dermatitis DR12.6.2Distinguish exfoliative dermatitis from other skin lesions	Bedside clinic	Skill assessment
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions	S	SH	Y	DR12.7.1 Define and identify fixed drug eruption DR12.7.2 Define and identify Steven Johnson syndrome DR12.7.3 Enumerate the drugs associated with Fixed drug eruptions and Steven Johnson syndrome	Bedside clinic	Skill assessment

					DR12.7.4Differentiate fixed drug eruption from other skin lesions DR12.7.5Differentiate Steven Johnson syndrome from other lesions		
Topic: Vesiculo bullous Lesions				Number of competencies:(03)			
DR13.1	Distinguish bulla from vesicles	S	SH	Y	DR13.1.1 Define vesicle and bulla DR13.1.2 Distinguish bulla from a vesicle	Bedside clinic	Skill assessment
DR13.2	Demonstrate the Tzanck test, nikolsky sign and bulla spread sign	S	SH	Y	DR13.2.1 Enumerate and demonstrate the steps of Tzanck smear DR13.2.2Identify acantholytic cells in a Tzanck smear DR13.2.3Define Nikolsky sign and enumerate the conditions in which it is positive DR13.2.4Define Bulla spread sign DR13.2.5 Demonstrate Nikolsky sign and bulla spread sign	Bedside clinic	Skill assessment
DR13.3	Calculate the body surface area of involvement of vesiculobullous lesions	S	SH	Y	DR13.3.1 Enumerate the scoring systems used in assessing the severity of pemphigus DR13.3.2 Calculate the body surface area of involvement in vesiculobullous disease	Bedside clinic	Skill assessment
Topic: Urticaria Angioedema				Number of competencies: (05)			
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema	K	KH	Y	DR14.1.1 Define urticaria and angioedema DR14.1.2 Describe the etiopathogenesis, clinical features of urticaria and angioedema DR14.1.3 Classify	Lecture	Written/ Viva voce

					urticaria and angioedema		
DR14.2	Identify and distinguish urticaria from other skin lesions	S	SH	Y	DR14.2.1 Enumerate the differential diagnosis of urticaria DR14.2.2 Identify and distinguish urticaria from other skin lesions	Bedside clinic	Skill assessment
DR14.3	Demonstrate dermographism	S	SH	Y	DR14.3.1 Define dermographism DR14.3.2 Demonstrate dermographism	Bedside clinic	Skill assessment
DR14.4	Identify and distinguish angioedema from other skin lesions	S	SH	Y	DR14.4.1 Identify angioedema DR14.4.2 Differentiate angioedema from other skin lesions	Bedside clinic	Skill assessment
DR14.5	Enumerate the indications and describe the pharmacology indications and adverse reactionsof drugs used in the urticaria and angioedema	K	KH	Y	DR14.5.1 Enumerate the drugs used in management of urticaria and angioedema DR14.5.2 Describe the indications, contraindications and adverse reactions in the management of urticaria and angioedema	Lecture	Written/ Viva voce
Topic: Pyoderma				Number of competencies: (04)			
DR15.1	Identify and distinguish folliculitis impetigo and carbuncle from other skin lesions	S	SH	Y	DR15.1.1 Enumerate various bacterial infections of skin DR15.1.2 Describe the clinical presentations of cutaneous bacterial infections DR15.1.3 Identify and distinguish folliculitis, impetigo and carbuncle from other skin lesions	Bedside clinic	Skill assessment
DR15.2	Identify staphylococcus on a gram stain	S	SH	Y	DR15.2.1 Describe and perform a gram stain DR15.2.2 Identify staphylococcus on a gram stain	Bedside clinic	Skill assessment

DR15.3	Enumerate the indications and describe the pharmacology, indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma	K	KH	Y	DR15.3.1 Enumerate various topical and systemic drugs used in treatment of pyodermas DR15.3.2 Describe the indications, contraindications and adverse effects of topical and systemic agents in pyodermas	Lecture	Written/ Viva voce
DR15.4	Enumerate the indications for surgical referral	S	KH	Y	DR15.4.1 Enumerate the indications for surgical referral of pyodermas	DOAP session	Written/ Viva voce
Topic: Collagen Vascular disease				Number of competencies: (02)			
DR16.1	Identify and distinguish skin lesions of SLE	S	SH	Y	DR16.1.1Define and identify discoid lupus erythematosus, subacute cutaneous lupus erythematosus and acute cutaneous lupus erythematosus DR16.1.2Enumerate the differential diagnosis and distinguish skin lesions of SLE	Bedside clinic	Skill assessment
DR16.2	Identify and distinguish Raynaud's phenomenon	S	SH	Y	DR16.2.1Define Raynaud's phenomenon DR16.2.2Describe the clinical findings of Raynaud's phenomenon DR16.2.3Distinguish Raynaud's phenomenon based on underlying cause	Bedside clinic	Skill assessment
Topic: Nutritional Deficiencies and Skin				Number of competencies: (04)			
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency	K/S	SH	Y	DR17.1.1Describe the epidemiology and etiopathogenesis of vitamin A deficiency DR17.1.2 Enumerate and identify the	Lecture	Written/ Viva voce

					cutaneous findings in vitamin A deficiency		
DR17.2	Enumerate and describe the various skin changes in Vitamin B complex deficiency	K	KH	Y	DR17.2.1Describe the etiopathogenesis and cutaneous changes of vitamin B1 deficiency DR17.2.2Describe the etiopathogenesis and cutaneous changes of vitamin B3 deficiency DR17.2.3 Describe the etiopathogenesis and cutaneous changes inpyridoxine,riboflavin, folate and vitamin B12 deficiencies	Lecture	Written/ Viva voce
DR17.3	Enumerate and describe the various changes in Vitamin C deficiency	K	KH	Y	DR17.3.1 Discuss the epidemiology and etiopathogenesis of vitamin C deficiency DR17.3.2 Describe the cutaneous changes in vitamin C deficiency	Lecture	Written/ Viva voce
DR17.4	Enumerate and describe the various changes in Zinc deficiency	K	KH	Y	DR17.4.1Discuss the etiopathogenesis of Zinc deficiency DR17.4.2Enumerate and describe the cutaneous changes in Zinc deficiency	Lecture	Written/ Viva voce
Topic: Systemic diseases and the skin Number of competencies:(02)							
DR18.1	Enumerate the cutaneous features of Type 2 diabetes	K	K	Y	DR18.1.1Enumerate the conditions when to suspect hormonal basis for a skin disease DR18.1.2Enumerate the cutaneous features of Type 2 diabetes	Small group discussion	Written/ Viva voce
DR18.2	Enumerate the cutaneous features of hypo/hyper-thyroidism	K	K	Y	DR18.2.1Enumerate the cutaneous features of hypothyroidism DR18.2.2 Enumerate the cutaneous features of hyperthyroidism	Small group discussion	Written/ Viva voce

INTEGRATION				Human Anatomy			
AN4.2	Describe structure & function of skin with its appendages	K	KH	Y		Lecture	Written/ Viva voce
AN4.4	Describe modifications of deep fascia with its functions	K	KH	Y		Lecture	Written/ Viva voce
AN4.5	Explain principles of skin incisions	K	KH	N		Lecture	Written
Pathology							
PA34.1	Describe the risk factors, pathogenesis, pathology and natural history of squamous cell carcinoma of the skin	K	KH	Y		Lecture	Written/ Viva voce
PA34.2	Describe the risk factors, pathogenesis, pathology and natural history of basal cell carcinoma of the skin	K	KH	Y		Lecture	Written/ Viva voce
PA34.3	Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors, morphology, clinical features and metastases of melanoma	K	KH	N		Lecture	Written/ Viva voce
PA34.4	Identify, distinguish and describe common tumors of the skin	S	SH	N		DOAP session	Skill Assessment
Microbiology							

MI4.3	Describe the etio-pathogenesis of Skin and soft tissue infections and discuss the clinical course, and the laboratory diagnosis.	K	KH	Y		Lecture	Written/ Viva voce
MI7.2	Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures, wherever relevant.	K	KH	Y		Lecture	Written/ Viva voce
Pharmacology							
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	K	KH	Y		Lecture	Written/ Viva voce
PH1.57	Describe drugs used in skin disorders	K	KH	Y		Lecture	Written/ Viva voce
Pediatrics							
PE31.4	Identify Atopic dermatitis and manage	S	SH	Y		Bedside clinics	Skill Assessment

TOPICS FOR SELF-DIRECTED LEARNING

Sl. no.	**Competency no.**	**Competency**
1	DR3.3	Enumeratetheindicationsforanddescribethevariousmodalitiesoftreatmentofpsoriasis including topical, systemic and phototherapy
2	DR8.1	Describetheetiology,microbiology,pathogenesisandclinicalpresentationsanddiag

		nosticfeaturesofcommonviralinfections oftheskin inadults andchildren
3	DR9.7	Enumerateanddescribethecomplicationsofleprosyanditsmanagement including understanding disability and stigma.
4	DR13.3	Calculatethebodysurfaceareaofinvolvementofvesiculobullouslesions
5	DR15.3	Enumeratetheindicationsanddescribethepharmacology,indicationsandadversere actionsoftopicalandsystemicdrugs usedintreatmentofpyoderma

LIST OF INSTRUMENTS

Sl no.	Instrument
1	Light microscope
2	Wood's lamp
3	Stains for gram, giemsa, KOH, slit skin smear
4	Skin biopsy punches
5	Electrosurgical instrument

RECOMMENDEDBOOKS:

S.No	NameofBook	Author(s)	Edition	Publisher
1	RoxburgTextBookofDermatology	Ronald Marks,RichardMotley	18th edition	Caroline Makpeace,Jaypee
2	IADVLConciseTextbook OfDermatology	VishalakshiViswanath	4th Edition	Jaypee
3	Andrews'DiseasesoftheSkin, International Edition: ClinicalDermatology	William James	12th Edition	Elsevier
4	ThappaTextbookofDermatology	Devinder MohanThappa	4th Edition	Elsevier
5	Illustrated synopsis of dermatology and sexually transmitted diseases	NeenaKhanna	6th Edition	Elsevier

DEPARTMENT OF EMERGENCY MEDICINE

Clinical Posting Schedule for 3rd year MBBS Students part – I for two weeks

S.No.	Topics
1	Introduction to Emergency Medicine
2	Triaging of Patients in EMD
3	Examination of Patients in Emergency Department
4	Primary Survey
5	Secondary Survey
6	I V Fluids
7	Examination of Patients with chest pain
8	General examination of a patient
9	Disaster Management criteria's
10	Code blue and Documentation
11	Cardio version and CPR
12	BLS and ACLS
13	Cardiac Arrest algorithm
14	**End Posting Exam** **20 Marks one long note and Two short notes** **Duration of Time : 40 mints**

DEPARTMENT OF EMERGENCY MEDICINE

Clinical Posting Schedule for 4th year MBBS Students part – II for two weeks

S.No.	Topics
1	EMD Stroke Protocol
2	EMD ACS Algorithm
3	Central Nervous System Examination
4	Cardio Vascular System Examination
5	Respiratory System Examination
6	Per abdomen Examination
7	A C L S Bradycardia algorithm
8	C-Spine Injury
9	Chest Trauma
10	Sepsis Guidelines
11	Shock
12	Massive Blood transfusion Protocol
13	Head Injury
14	**End Posting Exam** **20 Marks one long note and Two short notes** **Duration of Time : 40 mints**

Department of Respiratory Medicine (TB &RD)

GOAL-

- Toimpartcomprehensiveknowledge,skills,attitudeandcommunicationtotheundergraduatemedical students inRespiratorymedicine.
- Toidentifyrespiratoryhealthissuesandtomanageorreferatappropriatetime.
- Tocreaterespiratoryhealthawarenessandtoreducethestigmaassociatedwithchronicrespiratoryillness
- TonurturestudentsandmouldthemasanidealIndianMedicalGraduatewhoshouldbeagoodclinician,c ommunicator,lifelonglearner,professional, leaderandmemberofhealthcareteam.

OBJECTIVES

Knowledge

Attheendofthecourse,thestudentshallbe ableto:

- Tounderstandthebasicsofclinicalassessment,diagnosisandtreatmentofTuberculosisincludingMDR,XD RTBpatients.
- Toknowabouttheprevalenceofcommonrespiratory diseases
- Toknowthetheoreticalbasisofdiagnosisandmanagementofobstructiveairway diseases
- ToknowthetheoreticalbasisofrespiratorymanifestationsofGeneralmedicalconditions
- ToknowthetheoreticalbasisofPharmacologyofdrugsusedinrespiratorymedicine

Skills

- Toelicitdetailedhistoryfrompatientsandinformants
- ToperformRespiratoryexaminationinpatientswithRespiratorydisorders

Attitudeandcommunication

- Toestablishrapportwithpatientsandtheirfamilymembers
- Toestablishtherapeuticalliancewithpatients
- Toexhibitcompetenciesinverbal,nonverbalandwrittencommunication
- Attitudetobealifelong learner

Integration

- AttheendoftheintegratedteachingthestudentshallacquireanintegratedknowledgeofRespiratorydisorde rsandits management
- Tosearchthemedicalliterature,includingelectronicdatabases,forenhancingtheknowledgeandskillsinRe spiratory medicine

MINIMUM TEACHING HOURS:

Teaching Hours- 10
Tutorials/Seminars /IntegratedTeaching(hours)-8
Self-DirectedLearning(hours)-2
Total(hours)-20

COMPETENCIES:

Number	Unit1–Tuberculosis(will be covered by Department of medicine)
CT1.1	Describeanddiscusstheepidemiologyoftuberculosisanditsimpactonthework,lifeandeconomyofIndia
CT1.2	Describeanddiscussthemicrobiologyoftuberclebacillus,modeoftransmission,pathogenesis,clinicalevolutionandna turalhistoryofpulmonaryandextrapulmonaryforms(includinglymphnode, boneandCNS)
CT1.3	Discussanddescribetheimpactofco-infectionwithHIVandotherco-morbidconditions.Likediabetesonthenaturalhistoryoftuberculosis
CT1.4	Describetheepidemiology,thepredisposingfactorsandmicrobialandtherapeuticfactorsthatdetermineresistancetodr ugs
CT1.5	Elicit,documentandpresentanappropriatemedicalhistorythatincludesriskfactor,contacts,symptomsincludingcough andfeverCNSand othermanifestations
CT1.6	Demonstrate and perform a systematic examination thatestablishes the diagnosis based on the clinicalpresentation that includes a a) general examination, b) examination of the chest and lung including loss ofvolume,mediastinalshift,percussionandauscultation(includingDOAPsessionoflungsoundsandadded sounds c)examinationof thelymphaticsystemandd)relevantCNSexamination
CT1.7	Performandinterpret aPPD(mantoux)anddescribeanddiscusstheindications andpitfallsofthetest
CT1.8	Generateadifferentialdiagnosisbasedontheclinicalhistoryandevolutionofthediseasethatprioritizesthemostlikely diagnosis
CT1.9	Orderandinterpretdiagnostictestsbasedontheclinicalpresentationincluding:CBC,ChestXrayPAview,Mantoux,sput umcultureandsensitivity,pleuralfluidexamination andculture,HIVtesting
CT1.10	Performandinterpret anAFBstain
CT1.11	Assistintheperformance,outlinethecorrecttests！hatrequiretobeperformedandinterprettheresultsofapleuralfluidaspi ration

CT1.12	Enumeratetheindicationsfortestsincluding:serology,specialculturesandpolymerasechainreactionansensitivitytesting
CT1.13	Describeanddiscusstheorigin,indications,techniqueofadministration,efficacyandcomplicationsoftheBCGvaccine
CT1.14	Describe and discuss the pharmacology of various anti-tuberculous agents, their indications, contraindications,interactionsandadversereactions
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smearpositivity andnegativity and comorbidities based on current national guidelines including directly observed tuberculosistherapy(DOTS)
CT1.16	Describe the appropriate precautions, screening, testing and indications for chemoprophylaxis for contacts andexposed healthcareworkers
CT1.17	DefinecriteriaforthecureofTuberculosis;describeandrecognizethefeaturesofdrugresistanttuberculosis,prevention andtherapeuticregimens
CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTSprogram
CT1.19	Communicatewithpatients andfamily inanempatheticmanneraboutthediagnosis,therapy

Number	Unit2:Obstructiveairwaydisease
CT2.1	Defineandclassifyobstructiveairwaydisease
CT2.2	Describeanddiscussthe epidemiology,riskfactorsandevolutionofobstructiveairwaydisease
CT2.3	Enumerateanddescribethecausesofacuteepisodes inpatientswithobstructiveairwaydisease
CT2.4	Describeanddiscussthephysiologyandpathophysiologyofhypoxiaandhypercapnia
CT2.5	Describeanddiscussthegeneticsofalpha1antitrypsindeficiencyinemphysema
CT2.6	Describetheroleoftheenvironmentinthecauseandexacerbationofobstructiveairwaydisease
CT2.7	Describeanddiscussallergicandnon-allergicprecipitantsofobstructiveairwaydisease
CT2.8	Elicitdocumentandpresentamedicalhistorythatwilldifferentiatetheetiologiesofobstructiveairway disease,severityandprecipitants
CT2.9	Performasystematicexaminationthatestablishesthediagnosisandseveritythatincludesmeasurementofrespiratory rate,levelofrespiratorydistress,efforttolerance,breathsounds,addedsounds,identificationof signsofconsolidationpleuraleffusionandPneumothorax
CT2.10	Generateadifferentialdiagnosisandprioritizebasedonclinicalfeaturesthatsuggestaspecificetiology
CT2.11	Describe,discussandinterpretpulmonaryfunctiontests
CT2.12	Performandinterpret peakexpiratoryflowrate
CT2.13	Describetheappropriatediagnosticworkupbasedonthepresumedetiology
CT2.14	Enumeratetheindicationsforandinterprettheresults of:pulse oximetry,ABG,ChestRadiograph
CT2.15	Generateadifferentialdiagnosisandprioritizebasedonclinicalfeaturesthatsuggestaspecificetiology
CT2.16	Discuss anddescribetherapiesfor OADincludingbronchodilators, leukotrieneinhibitors,mast cellstabilizers, theophylline,inhaledandsystemicsteroids,oxygen andimmunotherapy
CT2.17	Describeanddiscusstheindicationsforvaccinations inOAD
CT2.18	Developatherapeuticplan includinguseofbronchodilatorsandinhaledcorticosteroids
CT2.19	Developamanagementplanforacuteexacerbationsincludingbronchodilators,systemicsteroids, antimicrobialtherapy
CT2.20	Describeanddiscusstheprinciplesanduseofoxygentherapy inthehospitalandathome
CT2.21	Describediscussandcounselpatientsappropriatelyonsmokingcessation
CT2.22	Demonstrateandcounselpatientonthecorrectuseofinhalers
CT2.23	Communicatediagnosistreatmentplanandsubsequentfollowupplantopatients
CT2.24	RecognizetheimpactofOADonpatient'squalityoflife,wellbeing ,workandfamily
CT2.25	Discussanddescribetheimpactof OAD onthesocietyandworkplace
CT2.26	DiscussanddescribepreventivemeasurestoreduceOADinworkplaces
CT2.27	Demonstrateanunderstandingofpatient'sinabilitytochangeworking,livingandenvironmentalfactorsthat Influenceprogressionofairwaydisease

TEXT BOOKS

RespiratoryMedicine

S.No	Title	Author/Editor	Publisher	Edition /Year
1	Harrison'sprinciplesofInternalMedicine	Jameson/ fauci /Kasper/Hauser/Longo Loscalzo	McgrawHill	20thEdition

2	CroftonandDouglasRespiratorydiseases	Anthony Seaton /DouglasSeaton/A.GordonLeitch	Blackwell science	5thEdition
3	Textbook of tuberculosis and non tuberculous mycobacterial diseases	SK sharma ,Alladi Mohan		
4	Toman'sTuberculosis Casedetection,TreatmentandMonitoring	Frieden	WHO	2ndEdition

Number	COMPETENCY Thestudentshouldbeableto	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested TeachingLearningm ethod	SuggestedAssessm entmethod	Number required tocertify P	VerticalIntegration	Standard learning objectives
RESPIRATORYMEDICINE-STANDARD LEARNING OBJ									
Topic:Tuberculosis (will be covered by department of medicine) **Numberofcompetencies:(19)** **Numberofproceduresthatrequirecertification:(01)**									
CT1.1	Describeanddiscusstheepidemiologyoftuberculosisanditsimpa ctonthework,lifeandeconomyofIndia	K	KH	Y	Lecture,Smallgroupd iscussion	Written/Vivavoce		CommunityMedicine	1.1.1. Discuss about the epidemiology of tuberculosis in India 1.1.2. Enumerate epidemiological indices of tuberculosis 1.1.3. Discuss about impactof tuberculosis onthework,lifeand economyofIndia
CT1.2	Describeanddiscussthemicrobiologyoftuberclebacillus,modeoftrans mission, pathogenesis, clinical evolution and natural history ofpulmonary and extra pulmonary forms (including lymph node, boneandCNS)	K	KH	Y	Lecture,Smallgroupd iscussion	written		Microbiology	1.2.1. Discuss themicrobiologyoftubercleb acillus 1.2.2. Enumerate modeoftransmission of TB 1.2.3. Discuss clinical evolution and natural history of pulmonary and extra pulmonary forms 1.2.4. Enumerate about wallgrens time table of TB
CT1.3	Discussanddescribetheimpactofco-infectionwithHIVandotherco-morbid conditions. Like diabetes on the natural history oftuberculosis	K	K	Y	Lecture,Smallgroupd iscussion	written		Microbiology	1.3.1. Discuss on TB and HIV 1.3.2. Discuss about association of TB and diabetes
CT1.4	Describetheepidemiology,thepredisposingfactorsandmicrobialandt herapeuticfactorsthatdetermineresistancetodrugs	K	KH	Y	Lecture,Smallgroupd iscussion	Written/Vivavoce		Community Medicine,Microbiolog y,Pharmacology	1.4.1. Discuss about epidemiology of drug resistant TB 1.4.2. Enumerate the

									microbial factors predisposing for drug resistance in TB 1.4.3. Discuss about the therapeuticfactorsthatdeter mineresistanceto TB drugs
CT1.5	Elicit, document and present an appropriate medical history thatincludesriskfactor,contacts,symptomsincludingcoughandfever CNSandothermanifestations	S	SH	Y	Bedsideclinic,DOAPs ession	Skillassessment			1.5.1. Elicitation of appropriate history in TB 1.5.2. Documentation of risk factors of TB 1.5.3. Documentation of contact history in TB
CT1.6	Demonstrateandperformasystematicexaminationthatestablishesthe diagnosis based on the clinical presentation that includes a a)general examination, b) examination of the chest and lung includingloss of volume, mediastinal shift, percussion and auscultation(including DOAP session of lung sounds and added sounds) c)examination of the lymphatic system and d) relevant CNSexamination	S	SH	Y	Bedsideclinic,DOAPs ession	Skillassessment			1.6.1. Demonstrate general physical examination 1.6.2. Demonstrate respiratory system examination with elicitation of loss of lung volume, mediastinal shift, percussion and auscultation 1.6.3. Perform lymph node examination 1.6.4. Perform CNS examination.
CT1.7	PerformandinterpretaPPD(mantoux)anddescribeanddiscussthein dicationsandpitfallsofthetest	S	P	Y	DOAPsession	Maintenanceoflogb ook		Microbiology	1.7.1. Perform mantoux test 1.7.2. Enumerate steps in PPD test 1.7.3. Interpretation of mantoux test 1.7.4. Discuss indication of mantoux test 1.7.5.Enumerate false positive and false negative conditions for PPD
CT1.8	Generateadifferentialdiagnosisbasedontheclinicalhistoryandevolu tionofthediseasethatprioritizesthemostlikelydiagnosis	K	K	Y	Bedsideclinic,Smallg roupdiscussion	Bedsideclinic/Vivav oce			1.8.1.Enumerate the differential diagnoses of the disease

Number	COMPETENCY Thestudentshouldbeableto	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested TeachingLearningmethod	SuggestedAssessmentmethod	Number requiredtocertify P	VerticalIntegration	HorizontalIntegration
CT1.9	Order and interpret diagnostic tests based on the clinicalpresentationincluding:CBC,ChestXrayPAview,Mantoux,sputumculture and sensitivity, pleural fluid examination and culture, HIVtesting	K	K	Y	Bedsideclinic,DOAPsession	Skillassessment			1.9.1. enumerate list of investigations to be done in the diagnosed disease 1.9.2.Enumerte the clinical importance of investigation ordered
CT1.10	PerformandinterpretanAFBstain	S	P	Y	DOAPsession	Skillassessment	1	Microbiology	1.10.1. Enumerate the steps of AFB attaining 1.10.2. Mention about the grading for sputum examination according to NTEP. 1.10.3. Perform AFB staining. 1.10.4 Interpretation of AFB stain.
CT1.11	Assistintheperformance,outlinethecorrecttestsrequiretobeperformedandinterprettheresultsofapleuralfluidaspiration	S	SH	Y	Skillassessment	Skillassessment			1.11.1. Enumerate steps of pleural fluid aspiration 1.11.2. Elicitation of counselling pre procedure and taking informed consent 1.11.3. Mention the biochemical, microbiological, pathological and immunological investigations 1.11.4. Describe the characteristics of parameters for different etiologies of pleural effusions
CT1.12	Enumeratetheindicationsfortestsincluding:serology,specialculturesandpolymerasechainreactionandsensitivitytesting	K	KH	Y	Smallgroupdiscussion,Lecture	Shortnote/Vivavoce		Microbiology	1.12.1. Enumerate indications for tests in serology 1.12.2. Discuss the indications for CBNAAT 1.12.3. Mention the sensitivity of different samples for CBNAAT

CT1.13	Describe and discuss the origin, indications, technique ofadministration,efficacyandcomplicationsoftheBCGvaccine	K	KH	Y	Lecture,Smallgroupd iscussion	Shortnote/Vivavoce		Microbiology	1.13.1. Discuss the origin of BCG vaccine 1.13.2. Mention indications of BCG vaccine 1.13.3. Elicit the technique for BCG vaccine administration 1.13.4. Enumerate efficacy of BCG vaccine 1.13.5. Discuss the complications of BCG vaccine
CT1.14	Describe and discuss the pharmacology of various anti-tuberculousagents,theirindications,contraindications,interactionsand adversereactions	K	KH	Y	Lecture,Smallgroupd iscussion	Shortnote/Vivavoce		Pharmacology,Microbiol ogy	1.14.1. Discuss the pharmacology of various ATT 1.14.2. Enumerate the indications of ATT 1.14.3. Mention the contraindications of ATT 1.14.4.list the interactions of ATT 1.14.5. Enumerate the adverse effects of ATT
CT1.15	Prescribe an appropriate anti tuberculosis regimen based on thelocation of disease, smear positivity and negativity and co-morbiditiesbasedoncurrentnationalguidelinesincludingdirectlyobs ervedtuberculosistherapy(DOTS)	K	SH	Y	Bedsideclinic,Smallg roup discussion,Lecture	Skillassessment		Pharmacology,Com munityMedicine	1.15.1. Prescription of appropriate ATT based on type of TB 1.15.2. Prescription of ATT and ART in HIV
CT1.16	Describe the appropriate precautions, screening, testing andindicationsforchemoprophylaxisforcontactsandexposedhealth careworkers	K	KH	Y	Bedsideclinic,Smallg roupdiscussion	Written		CommunityMedicine	1.16.1. Define chemoprophylaxis 1.16.2. Mention the indications for chemoprophylaxis 1.16.3. Mention the drugs dosages and duration for chemoprophylaxis
CT1.17	DefinecriteriaforthecureofTuberculosis;describeandrecognizethe features of drug resistant tuberculosis, prevention andtherapeuticregimens	S	P	Y	Lecture,Smallgroupd iscussion	Written			1.17.1. DefinecriteriaforthecureofTuberculosis 1.17.2. Describeandrecognizethe features of drug resistant tuberculosis 1.17.3. Mention about prevention

									andtherapeuticregimens
CT1.18	EducatehealthcareworkersonNationalProgramofTuberculosisandadministeringandmonitoringtheDOTSprogram	C	SH	Y	DOAPsession	Skillassessment		CommunityMedicine	1.17.1. Elicit on how to educate health care workers on National program of tuberculosis 1.17.2. Enumerate the steps in monitoring the DOTSprogramme 1.17.3. Mention about how to administer DOTS program

Number	COMPETENCY Thestudentshouldbeableto	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested TeachingLearningmethod	SuggestedAssessmentmethod	Number required tocertify P	VerticalIntegration	HorizontalIntegration
CT1.19	Communicatewithpatientsandfamilyinanempatheticmannerabouttthediagnosis,therapy	S	P	Y	DOAPsession	Skillassessment		AETCOM	1.19.1.Discuss and counsel with patients and family TB 1.19.2. Discuss and counsel with patients about diagnosis 1.19.3. Discuss and counsel with patients about treatment of TB
Topic:Obstructiveairwaydisease		**Numberofcompetencies:(28)**				**Numberofproceduresthatrequirecertification:(01)**			
CT2.1	Defineandclassifyobstructiveairwaydisease	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce		Physiology,Pathology	2.1.1.Define obstructive airway disease 2.1.2. Classification of obstructive airway disease
CT2.2	Describeanddiscusstheepidemiology,riskfactorsandevolutionofobstructiveairwaydisease	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce		Physiology ,Pathology	2.2.1. Discuss the epidemiology about obstructiveairwaydisease 2.2.2. Mention about risk factors of obstructiveairwaydisease 2.2.3. Enumerate about evolution of obstructiveairwaydisease 2.2.4. Enumerate about the risk factors of obstructiveairwaydisease
CT2.3	Enumerateanddescribethecausesofacuteepisodesinpatientswithobstructiveairwaydisease	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce			2.3.1.Define about acute exacerbation of obstructiveairwaydisease 2.3.2. Enumerate reasons for acute exacerbation of obstructiveairwaydisease
CT2.4	Describeanddiscussthephysiologyandpathophysiologyofhypoxiaandhypercapnia	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce		Physiology,Pathology	2.4.1. Discussthephysiologyandpathophysiologyof hypoxia 2.4.2. Discussthephysiologyand

									pathophysiologyofhypercapnia 2.4.3. Enumerate the causes of hypoxia 2.4.4. Enumerate the causes of hypercapnia 2.4.5. discuss about the management hypoxiaandhypercapnia
CT2.5	Describeanddiscussthegeneticsofalpha1antitrypsindeficiencyinemphysema	K	KH	N	Lecture,Smallgroupdiscussion	Written/Vivavoce		Physiology,Pathology	2.5.1.discussthegeneticsofalpha1antitrypsindeficiencyinemphysema
CT2.6	Describetheroleoftheenvironmentinthecauseandexacerbationofobstructiveairwaydisease	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce		Pathology	2.6.1.Describetheroleoftheenvironmentinthecauseandexacerbationofobstructiveairwaydisease
CT2.7	Describeanddiscussallergicandnon-allergicprecipitantsofobstructiveairwaydisease	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce		Pathology	2.7.1. discuss the precipitants of obstructiveairwaydisease 2.7.2. mention allergic and non-allergic precipitants of obstructive airway disease
CT2.8	Elicitdocumentandpresentamedicalhistorythatwilldifferentiatethe aetiologies of obstructive airway disease, severity andprecipitants	S	SH	Y	Bedsideclinic,DOAPsession	Skillassessment			2.8.1. elicit relevant medical history for obstructiveairwaydisease 2.8.2. elicit appropriate medical history to differentiate between asthma and COPD 2.8.3. mention the history for assessing the severity of obstructiveairwaydisease 2.8.4. Enumerate about the precipitant factors for obstructiveairwaydisease
CT2.9	Perform a systematic examination that establishes the diagnosisand severity that includes measurement of respiratory rate, level ofrespiratorydistress,efforttolerance,breathsounds,addedsounds,identification of signs of consolidation pleural effusion andpneumothorax	S	SH	Y	Bedsideclinic,DOAPsession	Skillassessment			2.9.1. respiratory system examination for diagnosis of obstructiveairwaydisease 2.9.2. mention about the salient features of type of respiration in obstructiveairwaydisease 2.9.3. discuss about breath sounds 2.9.4.enumetrate the types of breath sounds

									2.9.5. mention about added sounds and their pathophysiology with causes 2.9.6. mention about types of bronchial breathing with an example each 2.9.7. identify signs of pleural effusion 2.9.8. identify signs of pneumothorax

Number	COMPETENCY Thestudentshouldbeableto	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested TeachingLearningmethod	SuggestedAssessmentmethod	Number requiredtocertify P	VerticalIntegration	Standard learning objectives
CT2.10	Generateadifferentialdiagnosisandprioritiesbasedonclinicalfeaturesthatsuggestaspecificetiology	S	SH	Y	Bedsideclinic,DOAPsession	Skill assessment/Written			2.10.1. enumerate differential diagnosis for the etiology
CT2.11	Describe, discussandinterpret pulmonaryfunction tests	S	SH	Y	Bedsideclinic,DOAPsession	Skillassessment		Physiology,Pathology	2.11.1. mention the steps for performing PFT 2.11.2. demonstrate how to perform PFT 2.11.3. describe the parameters in PFT 2.11.4.interpret the given PFT
CT2.12	Performandinterpretpeakexpiratoryflowrate	S	P	Y	Bedsideclinic,DOAPsession	documentationinlogbook/ Skillassessment	3		2.12.1. Enumerate the steps in PEFR 2.12.2. mention indications of PEFR 2.12.3. Perform PEFR 2.12.4. describe about asthma management plan based on PEFR
CT2.13	Describetheappropriatediagnosticworkupbasedonthepresumedetiology	S	SH	Y	Bedsideclinic,Smallgroupdiscussion	Written/ Skillassessment			2.13.1. mention the diagnostic tests useful for asthma 2.13.2. mention the diagnostic tests for COPD
CT2.14	Enumeratetheindicationsforandinterprettheresultsof:pulseoximetry,ABG,ChestRadiograph	K	SH	Y	Bedside clinics, Smallgroupdiscussion,DOAPsession	Written/ Skillassessment			2.14.1. enumerate indications of pulse oximeter 2.14.2. mention false positives and negatives of pulse oximeter 2.14.3 mention the parameters in ABG 2.14.4 discuss about metabolic acidosis and alkalosis with compensation mechanisms 2.14.5. discuss about respiratory acidosis and alkalosis with compensation mechanisms 2.14.6. elicit the process of reading normal chest x ray
CT2.15	Generateadifferentialdiagnosisandprioritizebasedonclinicalfeaturesthatsuggestaspecificetiology	K	SH	Y	Bedside clinics,Smallgroupdiscussion,DOAPsession	Written/ Skillassessment			2.15.1. enumerate differentialdiagnosis based on the clinical features based on etiologies

CT2.16	Discuss and describe therapies forOAD including bronchodilators,leukotrieneinhibitors,mastcellstabilizers ,theophylline,inhaledandsystemicsteroids,oxygenandimmunotherap y	K	KH	Y	Lecture,Smallgroupd iscussion	Written/Vivavoce		Pharmacology	2.16.1. discuss about bronchodilators reliever and control medications with side effects 2.16.2. elicit the technique for inhalation drugs 2.16.3 mention the step up drugs for OAD with side effects
CT2.17	DescribeanddiscusstheindicationsforvaccinationsinOAD	K	KH	Y	Lecture,Smallgroupd iscussion	Written/Vivavoce			2.17.1 mentions the vaccinations use in OAD 2.17.2. mention indications contraindications and vaccine schedule for OAD
CT2.18	Developatherapeuticplanincludinguseofbronchodilatorsandinhal edcorticosteroids	K	SH	Y	Bedside clinics, Smallgroupdiscussion,D OAPsession	Written/ Skillassess ment			2.18.1. development of therapeutic plan for OAD 2.18.2. mention the step up and step down plan for OAD

Number	COMPETENCY Thestudentshouldbeableto	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested TeachingLearningmethod	SuggestedAssessmentmethod	Number required tocertify P	Vertical Integration	HorizontalIntegration
CT2.19	Developamanagementplanforacuteexacerbationsincluding bronchodilators,systemicsteroids,antimicrobialtherapy	K	SH	Y	Bedside clinics, Smallgroupdiscussion,DOAPsession	Written/ Skillassessment			2.19.1. define acute exacerbation of OAD and causes 2.19.2. Developamanagementplan foracuteexacerbations of OAD
CT2.20	Describeanddiscusstheprinciplesanduseofoxygentherapyinthehospitalandathome	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce			2.20.1. discuss the indications for oxygen therapy 2.20.2 mention various devices for oxygen delivery 2.20.3. indications of home oxygen therapy 2.20.4. discuss the weaning off plan from oxygen delivey
CT2.21	Describediscussandcounselpatientsappropriatelyonsmoking cessation	K/C	SH	Y	DOAPsession	Skillassessment		AETCOM	2.21.1.mention about the smoking cessation plan 2.21.2. enumerate on A sand R in smoking cessation 2.21.3. elicit the nicotine dependene 2.21.4.dicuss various therapies for nicotine dependence 2.21.5 counsel about the need for smoking cessation
CT2.22	Demonstrateandcounselpatientonthecorrectuseofinhalers	S/C	SH	Y	DOAPsession	Skillassessment			2.16.1. mention the steps of inhaler usage 2.16.2. demonstrate the use of inhalers
CT2.23	Communicatediagnosistreatmentplanandsubsequentfollowupplantopatients	K/C	SH	Y	DOAPsession	Skillassessment			2.17.1. counsel patient regarding OAD and compliance of inhalational therapy 2.17.2. mention about the signs and symptoms when there is need for step up treatment
CT2.24	RecognizetheimpactofOADonpatient'squalityoflife,wellbeingworkandfamily	A	KH	Y	Smallgroupdiscussion,Bedsideclinics	Observationbyfaculty		Community Medicine	

CT2.25	DiscussanddescribetheimpactofOADonthesocietyandworkplace	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce		Community Medicine	2.25.1. Discuss about impactofOADonthesocietyandworkplace
CT2.26	DiscussanddescribepreventivemeasurestoreduceOADin workplaces	K	KH	Y	Lecture,Smallgroupdiscussion	Written/Vivavoce		Community Medicine	2.26.1. Mention preventivemeasurestoreduceOADinworkplaces
CT2.27	Demonstrate an understanding of patient's inability to changeworking,livingandenvironmentalfactorsthatinfluenceprogressionofairwaydisease	A	KH	Y	Smallgroupdiscussion,Bedsideclinics	Observationbyfaculty		Community Medicine	2.27.1. Enumerate the personal, socioeconomic and environmental factors responsible for progressionofairwaydisease
CT2.28	Demonstrateanunderstandingforthedifficultiesfacedbypatients duringsmokingcessation	A	KH	Y	Smallgroupdiscussion,Bedsideclinics	Observationbyfaculty			2.28.1.Mention about the A and R of smoking cessation 2.28.2. Mention thedifficultiesfacedbypatientsduringsmokingcessation 2.28.3 elicit the counselling done for smoking cessation
	Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C-Communication.ColumnD:K–Knows,KH-KnowsHow,SH-Showshow,P-performsindependently,ColumnF:DOAPsession–Demonstrate,Observe,Assess,Perform. ColumnH:IfentryisP:indicatehowmanyproceduresmustbedoneindependentlyforcertification/graduation								

RESPIRATORY MEDICINE [CT]
PHASE-3, PART -1, 20 HRS
TOPIC – TB

S.NO	CODE	COMPETENCY	SUGGESTED TEACHINGMETHOD	INTEGRATION
1.	CT1.1	Describe and discuss the epidemiology of tuberculosis and its impact on the work, life and economy of India	LECTURE	YES (Community Medicine)
2.	CT1.2	Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS)	LECTURE	YES (Microbiology)
3.	CT1.3	Discuss and describe the impact of co-infection with HIV and other co-morbid conditions. Like diabetes on the natural history of tuberculosis	SELF DIRECTED LEARNING	
4.	CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs	SMALLGROUP DISCUSSION	
5.	CT1.12	Enumerate the indications for tests including: serology, special cultures and polymerase chain reaction and sensitivity testing	LECTURE	YES (Microbiology)
6.	CT1.13	Describe and discuss the origin, indications, technique of administration, efficacy and complications of the BCG vaccine	LECTURE	
7.	CT1.14	Describe and discuss the pharmacology of various anti-tuberculous agents, their indications, contraindications, interactions and adverse reactions	LECTURE	
8.	CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and	SMALL GROUP DISCUSSION	

		comorbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)		
	CT1.16	Describe the appropriate precautions, screening, testing and indications for chemoprophylaxis for contacts and exposed health care workers		
TOPIC – OAD				
9.	CT1.17	Define criteria for the cure of Tuberculosis; describe and recognize the features of drug resistant tuberculosis, prevention and therapeutic regimens	LECTURE	
10.	CT2.1	Define and classify obstructive airway disease	LECTURE	
11.	CT2.2	Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease	LECTURE	
12.	CT2.3	Enumerate and describe the causes of acute episodes in patients with obstructive airway disease	SMALL GROUP DISCUSSION	
13.	CT2.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnia	LECTURE	
14.	CT2.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema	SELF DIRECTED LEARNING	
15.	CT2.6	Describe the role of the environment in the	SMALL GROUP	

		cause and exacerbation of obstructive airway disease	DISCUSSION	
	CT2.7	Describe and discuss allergic and non-allergic precipitants of obstructive airway disease		
16.	CT2.13	Describe the appropriate diagnostic work up based on the presumed etiology	SMALL GROUP DISCUSSION	
17.	CT2.16	Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilizers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy	LECTURE	
	CT2.18	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids		
18.	CT2.17	Describe and discuss the indications for vaccinations in OAD	SMALL GROUP DISCUSSION	
	CT2.19	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy		
19.	CT2.20	Describe and discuss the principles and use of oxygen therapy in the hospital and at home	SMALL GROUP DISCUSSION	
20.	CT2.25	Discuss and describe the impact of OAD on the society and workplace	SMALL GROUP DISCUSSION	
	CT2.26	Discuss and describe preventive measures to reduce OAD in workplaces		

BEDSIDE CLINICS [SCHEDULE FOR 12 DAYS]

1.	CT1.5 CT1.6	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes a)general examination, b) examination of the chest and lung including loss of volume, mediastinal shift, percussion and auscultation (including DOAP session of lung sounds and added sounds) c) examination of the lymphatic system and d) relevant CNS examination	BED SIDE CLINICS	DAY 1
2.	CT1.7	Perform and interpret a PPD (Mantoux) and describe and discuss the indications and pitfalls of the test	DOAP SESSION	DAY 2
3.	CT1.8	Generate a differential diagnosis based on the clinical history and evolution of the disease that prioritizes the most likely diagnosis	BED SIDE CLINICS	DAY 3
4.	CT1.9 CT1.10	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Monteux, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing Perform and interpret an AFB stain	DOAP SESSION	DAY 4
5.	CT1.11	Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration	SKILL ASSESSMENT	DAY 5
6.	CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program	DOAP SESSION	DAY 6

7.	CT1.19	Communicate with patients and family in an empathetic manner about the diagnosis, therapy	DOAP SESSION	
8.	CT2.8 CT2.9	Elicit document and present a medical history that will differentiate the etiologies of obstructive airway disease, severity and precipitants Perform a systematic examination that establishes the diagnosis and severity that includes measurement of respiratory rate, level of respiratory distress, effort tolerance, breath sounds, added sounds, identification of signs of consolidation pleural effusion and pneumothorax	BED SIDE CLINICS	DAY 7
9.	CT2.10	Generate a differential diagnosis and prioritize based on clinical features that suggest a specific etiology	BED SIDE CLINICS	DAY 8
10	CT2.11 CT2.12	Describe, discuss and interpret pulmonary function tests Perform and interpret peak expiratory flow rate	DOAP SESSION	
11	CT2.14	Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph	BED SIDE CLINICS	DAY 9
12	CT2.15	Generate a differential diagnosis and priorities based on clinical features that suggest a specific etiology	BED SIDE CLINICS	DAY 10
13	CT2.21 CT2.22	Describe discuss and counsel patients appropriately on smoking cessation Demonstrate and counsel patient on the correct use of inhalers	DOAP SESSION	DAY 11

14	CT2.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients	DOAP SESSION	
15	CT2.24	Recognize the impact of OAD on patient's quality of life, well-being, work and family	BED SIDE CLINICS	DAY 12
16	CT2.27 CT2.28	Demonstrate an understanding of patient's inability to change working, living and environmental factors that influence progression of airway disease Demonstrate an understanding for the difficulties faced by patients during smoking cessation	BED SIDE CLINICS	

Department of General Surgery

Professional Year (Part – I)

Name of the program: MBBS
Name of the subject: General Surgery (SU)
Year of revision: 2019
Paper I Course code: GES003
Paper II Course code: GES004
Practical's Course code: GES205

Orthopaedics – **OR**
Anaesthesiology – **AS**
Dentistry – **DE**
Radio Diagnosis – **RD**
Radiotherapy – **RT**

GOAL

General Surgery

The broad goal of the teaching of undergraduate students in Surgery is to produce graduates capable of delivering efficient first contact surgical care. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practice of general surgery through exposure to general surgical disorders. The student must appreciate the medical management and basic foundations underlying the care of surgical patients.

Orthopedics

The aim of teaching the undergraduate student in Orthopedics and Physical Medicine and Rehabilitation is to impart such knowledge and skills that may enable him/her to diagnose and treat common ailments. He/she shall have ability to diagnose and suspect presence of fracture, dislocation, actual osteomyelitis, acute poliomyelitis and common congenital deformities such as Congenital Talipes Equino Varus (CTEV) and Congenital dislocation of hip (CDH).

Anesthesiology

The broad goal of the teaching of undergraduate students in anesthesia is to produce graduates capable of delivering efficient basic anesthetic and cardiopulmonary resuscitation skills. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the perioperative anesthetic care of a surgical patient. The student should appreciate the basics of airway management and cardiopulmonary resuscitation

Radio diagnosis

The aim of teaching the undergraduate student in radio diagnosis is to impart such knowledge and skills that may enable him to understand principles of image ology and recognize risk and complications of radiologic procedures and the need for protective techniques.

Radiotherapy

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

Dentistry

The aim of teaching the undergraduate student in dentistry is to impart such knowledge and skills that may enable him to understand principles of dentistry and recognize common dental diseases. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practice of dentistry through exposure to common dental disorders.

COMPETENCIES

General surgery

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 appropriately 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 utilities of antibiotics and universal precautions in surgical practice,
- Knowledge of common malignancies in India and their prevention, early detection and therapy,
- Ability to perform common diagnostic and surgical procedures at the primary care level,
- Ability to recognize, resuscitates, stabilize and provide Basic & Advanced Life Support to patients following trauma,
- Ability to administer informed consent and counsel patient prior to surgical procedures,
- Commitment to advancement of quality and patient safety in surgical practice.

Orthopedics (including Trauma)

The student must demonstrate:

- Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral,
- Knowledge of the medico-legal aspects of trauma,
- Ability to recognize and manage common infections of bone and joints in the primary care setting,
- Ability to recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone diseases and refer appropriately,
- Ability to perform simple orthopedic techniques as applicable to a primary care setting,
- Abilitytorecommendrehabilitativeservicesforcommonorthopedicproblemsacrossall ages.

Anesthesiology

The student must demonstrate ability to:

- Describe and discuss the pre-operative evaluation, assessing fitness for surgery and the modifications in medications in relation to anesthesia /surgery,
- Describe and discuss the roles of Anesthesiologist as a peri-operative physician including pre-medication, endotracheal intubation, general anesthesia and recovery (including variations in recovery from anesthesia and anesthetic complications),
- Describeanddiscussthemanagementofacuteandchronicpain,includinglabouranalgesia,
- Demonstrate awareness about the maintenance of airway in children and adults in various situations,
- Demonstrate the awareness about the indications, selection of cases and execution of cardio-pulmonary resuscitation in emergencies and in the intensive care and high dependency units,
- Choose cases for local / regional anesthesia and demonstrate the ability to administer the same,
- Discuss the implications and obtain informed consent for various procedures and to maintain the documents.

Radio diagnosis

The student must demonstrate:

- Understanding of indications for various radiological investigations in common clinical practice,
- Awareness of the ill effects of radiation and various radiation protective measures to be employed,
- Ability to identify abnormalities in common radiological investigations.

Radiotherapy

The student must demonstrate understanding of:

- Clinical presentations of various cancers,
- Appropriate treatment modalities for various types of malignancies,
- Principles of radiotherapy and techniques.

Dentistry

The student must demonstrate:

- Understanding of the structural and functional basis, principles of diagnosis and management of common problems in dentistry
- Understanding of etiology of dental infections and loss of teeth and their sequelae
- Understanding of malignancy in oral cavity.
- Understanding of Periodontology
- Ability to identify dental diseases.
- Ability to obtain informs consent and counsel patients for dental procedure.

OBJECTIVES

General Surgery

Knowledge:

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

- Describe aetiology, pathophysiology, principles of diagnosis and management of common surgicalproblems including emergencies, in adults and children.
- Define indications and methods for fluid and electrolyte replacement therapy including blood transfusion.
- Define asepsis, disinfection and sterilization and recommend judicious use of antibiotics;
- Describe common malignancies in the country and their management including prevention.
- Enumerate different types of anesthetic agents, their indications mode of administration,
- Contraindications and side effects.

Skills

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

- Perform clinical examination for various surgical conditions.
- Diagnose common surgical conditions both acute and chronic, in adult and children :
- Plan various laboratory tests for surgical conditions and interpret the results:
- Identify and manage patients of hemorrhagic, septicemia and other types of shock;
- Be able to maintain patient air-way and resuscitate; a critically injured patient;
- Monitor patients of head, chest, spinal and abdominal injuries, both in adults and children
- Provide primary care for a patient of burns;
- Acquire principles of operative surgery, including pre-operative, operative and post operative care and monitoring;
- Treat open wounds including preventive measures against tetanus and gas gangrene :
- Diagnose neonatal and pediatric surgical emergencies and provide sound primary care before referring the patient to secondary/tertiary centre
- Identify congenital anomalies and refer them for appropriate management.

In addition to the skills referred above in items (1) to (11), he shall have observed/assisted/performed the Following:

- Incision and drainage of abscess in a simulated environment:
- Suturing in a simulated environment
- Observe blood transfusion in a simulated environment
- Demonstrate techniques of asepsis in a simulated environment
- Observe common surgical procedures emergency & life-saving procedures.

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

The undergraduate teaching in surgery shall 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.

Orthopedics

Knowledge

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

- Acquire a broad - based knowledge of injuries and disorders affecting the musculoskeletal system and its relevance in the overall treatment and rehabilitation programme.
- Recognize fractures, dislocations, injuries to ligaments, muscles and peripheral nerves.
- Recognize life threatening and limb threatening injuries and plan their primary management.
- Identify congenital anomalies involving the musculoskeletal system their genetic back ground, prognosis and broad principles of management.
- Evolve a clear understanding of the nature of infections involving bone and joints - to appreciate the importance of their early recognition and treatment.
- Recognize metabolic bone disease and endocrinological anomalies as it applies to the musculo skeletal system.
- Recognize the nature, principles of investigations and management of degenerative diseases and rheumatologic conditions. Broad principles of rehabilitation and reconstructive surgery shall be introduced during the lectures.
- Recognize neoplasms involving the musculo-skeletal system, their behavior, prognosis and current methods or treatment.
- Develop a sound understanding of widely prevalent conditions in the community such as tuberculosis, poliomyelitis and leprosy and their impact in orthopedic practice.
- Develop understanding of the imaging modalities available today; their indications, advantages and disadvantages.

Skills:

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

- Perform correct application of bandages.
- Perform application of different types of splints for fractures, sprains and other painful affections.
- Perform application of plaster casts and slabs.
- Perform aseptic and non - touch techniques of dressing of wounds.
- Perform application of skin traction.
- Provide proper Care of an acutely injured patient, resuscitation methods and first - aid measures.

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

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

Anesthesiology

Knowledge:

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

- Describe the evolution of Anesthesiology as a modern specialty
- Describe the roles of Anesthesiologist in the medical profession
- Understand the stepwise algorithm approach of BLS and ACLS
- Describe the principles of preoperative evaluation
- Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia
- Describe and discuss the pharmacology of drugs used in induction and maintenance of general anesthesia
- Describe the principles of fluid therapy in the preoperative period
- Describe the principles of monitoring and resuscitation in the recovery room
- Enumerate and describe the criteria for admission and discharge of a patient to an ICU
- Describe principles of providing post-operative pain relief and management of chronic pain

Skills

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

- Observe Pre-anesthetic checkup and prescribe pre-anesthetic medications
- Demonstrate Venepuncture and set up intravenous drip in a simulated environment
- Observe Laryngoscopy and endotracheal intubation,
- Observe Lumbar puncture, spinal anaesthesia and simple nerve blocks
- Demonstrate Simple general anaesthetic procedures under supervision in a simulated environment
- Observe monitoring of patients during anaesthesia and in the post-operative period
- Observe maintenance of anaesthetic records
- Observe cardio-pulmonary resuscitation including recognition of cardiac arrest.
- Demonstrate Counseling and advise regarding various methods of anesthesia in a simulated environment
- Observe Anesthesia for major and minor surgical and other procedures

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration:

The undergraduate teaching in Anesthesia shall 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.

Radio diagnosis

Knowledge

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

- Define radiation and the interaction of radiation and importance of radiation protection.
- Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments
- Describe preparation of patient for common imaging procedures.
- Describe the role of Interventional Radiology in common clinical conditions
- Describe the effects of radiation in pregnancy and the methods of prevention/ minimization of radiation exposure
- Describe the components of the PC & PNDT Act and its medicolegal implications

Skills

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

- Describe the evolution of Radio diagnosis. Identify various radiological equipment in the current era.
- Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder of
    - ENT.
    - Obstetrics & Gynecology.
    - Internal medicine.
    - Surgery.
    - Pediatrics.
    - Common malignancies.

Attitude and communication

- Communication with empathy to patients & patient's attenders.
- To obtain the relevant and essential clinical data to aid in image interpretation.
- To counsel & obtain informed consent from patient & patients attenders

Integration

Horizontal and vertical integration to understand the fundamental principles of radiologic imaging, anatomic correlation and their application in diagnosis.

Radiotherapy

Knowledge

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

- Identify symptoms and signs of various cancers and their steps of investigations and management.
- Explain the effect of radiation therapy on human beings and the basic principles involved in it.
- Know about radio-active isotopes and their physical properties
- Be aware of the advances made in radiotherapy in cancer management and knowledge of various radio therapeutic equipment while treating a patient.

Skill

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

- Take a detailed clinical history of the case suspected of having a malignant disease.
- Assist various specialists in administration of anticancer drugs and in application and use of various radio the rapeutic equipment, while treating a patient.

Attitude and communication

- Communication with empathy to patients & patient's attenders.
- To obtain the relevant and essential clinical data to aid in image interpretation.
- To counsel & obtain informed consent from patient & patients attenders
    - INTEGRATION: Horizontal and vertical integration to enable basic understanding of fundamental principles of radio-the rapeutic procedures

Integration:

Horizontal and vertical integration to enable basic understanding of fundamental principles of radio-therapeutic procedures

Dentistry

Knowledge

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

- Describe the structural and functional basis, principles of diagnosis and management of common problems in dentistry
- Describe the etiology pathophysiology of dental caries and their sequelae
- Describe the etiology pathophysiology of loss of teeth and associated structures , its sequelae and management
- Describe the pathophysiology impact and malocclusion
- Describe the common malignancy in oral cavity and their management including prevention.
- Describe the pataphysiology of Periodontal diseases and management

Skills

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

- Identify common dental diseases – dental caries, missing teeth, malocclusion
- Pre-cancerous and cancerous lesions and periodontal diseases.
- Obtain inform consent and counsel patients for dental hygiene and dental procedure.

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

The undergraduate teaching in dentistry shall be aligned and integrated horizontally and vertically in order to provide a sound biological basis and holistic approach to the care of the patient with dental disorder.

SYLLABUS

Reference:

Medical Council of India, Competency Based Undergraduate Curriculum for the Indian Medical Graduate, 2018. Volume 3 ; General Surgery Pg 41-55 , OrthopedicsPg130-137 ; AnaesthesiaPg145-151 ; Dentistry

Pg 163-164; Radio Therapy Pg 160-161;Radio Diagnosis Pg 154-155;

Theory Syllabus: Topic and the competencies

General Surgery

Number	Unit 1 - Metabolic response to injury
SU1.1	Describe Basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.
SU1.2	Describe the factors that affect the metabolic response to injury.
SU1.3	Describe basic concepts of perioperative care.

Number	Unit 2 - Shock
SU2.1	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring.
SU2.2	Describe the clinical features of shock and its appropriate treatment.

Number	Unit 3 - Blood and blood components
SU3.1	Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion.

Number	Unit 4 - Burns
SU4.1	Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns.
SU4.2	Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.
SU4.3	Discuss the Medico legal aspects in burn injuries.

Number	Unit 5 - Wound healing and wound care
SU5.1	Describe normal wound healing and factors affecting healing.
SU5.3	Differentiate the various types of wounds, plan and observe management of wounds.
SU5.4	Discuss medico legal aspects of wounds

Number	Unit 6 - Surgical infections
SU6.1	Define and describe the aetiology and pathogenesis of surgical Infections
SU6.2	Enumerate Prophylactic and therapeutic antibiotics Plan appropriate management

Number	Unit 7 - Surgical Audit and Research
SU7.1	Describe the Planning and conduct of Surgical audit
SU7.2	Describe the principles and steps of clinical research in General Surgery
Number	**Unit 8 - Ethics**
SU8.1	Describe the principles of Ethics as it pertains to General Surgery

Number	Unit 10 - Pre, intra and post- operative management
SU10.1	Describe the principles of perioperative management of common surgical procedures

Number	Unit 11 - Anesthesia and pain management
SU11.1	Describe principles of Preoperative assessment.
SU11.2	Enumerate the principles of general, regional, and local Anesthesia.
SU11.4	Enumerate the indications and principles of day care General Surgery
SU11.5	Describe principles of providing post-operative pain relief and management of chronic pain.
SU11.6	Describe Principles of safe General Surgery

Number	Unit 12 - Nutrition and fluid therapy
SU12.1	Enumerate the causes and consequences of malnutrition in the surgical patient
SU12.2	Describe and discuss the methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patient
SU12.3	Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications

Number	Unit 13 - Transplantation
SU13.1	Describe the immunological basis of organ transplantation
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ transplantation
SU13.3	Discuss the legal and ethical issues concerning organ donation

Number	Unit 14 - Basic Surgical Skills
SU14.1	Describe Aseptic techniques, sterilization and disinfection.
SU14.2	Describe Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.
SU14.3	Describe the materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)

Number	Unit 15 - Biohazard disposal
SU15.1	Describe classification of hospital waste and appropriate methods of disposal.

Number	Unit 16 - Minimally invasive General Surgery
SU16.1	Minimally invasive General Surgery: Describe indications advantages and disadvantages of Minimally invasive General Surgery

Number	Unit 17 - Trauma
SU17.3	Describe the Principles in management of mass casualties
SU17.4	Describe Pathophysiology, mechanism of head injuries
SU17.5	Describe clinical features for neurological assessment and GCS in head injuries
SU17.6	Chose appropriate investigations and discuss the principles of management of head injuries
SU17.7	Describe the clinical features of soft tissue injuries. Chose appropriate investigations and discuss the principles of management.
SU17.8	Describe the pathophysiology of chest injuries.
SU17.9	Describe the clinical features and principles of management of chest injuries.
Number	**Unit 18 - Skin and subcutaneous tissue**
SU18.1	Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections.
SU18.2	Classify skin tumors Differentiate different skin tumors and discuss their management.

Number	Unit 19 - Developmental anomalies of face, mouth and jaws
SU19.1	Describe the etiology and classification of cleft lip and palate
SU19.2	Describe the Principles of reconstruction of cleft lip and palate

Number	Unit 20 - Oropharyngeal cancer
SU20.1	Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer.
SU20.2	Enumerate the appropriate investigations and discuss the Principles of treatment.

Number	Unit 21 - Disorders of salivary glands
SU21.1	Describe surgical anatomy of the salivary glands, pathology, and clinical presentation of disorders of salivary glands
SU21.2	Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands

Number	Unit 22 - Endocrine General Surgery: Thyroid and parathyroid
SU22.1	Describe the applied anatomy and physiology of thyroid
SU22.2	Describe the etiopathogenesis of thyroidal swellings
SU22.4	Describe the clinical features, classification and principles of management of thyroid cancer
SU22.5	Describe the applied anatomy of parathyroid
SU22.6	Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management

Number	Unit 23 - Adrenal glands
SU23.1	Describe the applied anatomy of adrenal glands
SU23.2	Describe the etiology, clinical features and principles of management of disorders of adrenal gland
SU23.3	Describe the clinical features, principles of investigation and management of Adrenal tumors

Number	Unit 24 - Pancreas
SU24.1	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis.
SU24.2	Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumours
SU24.3	Describe the principles of investigation and management of Pancreatic disorders including pancreatitis and endocrine tumors.

Number	Unit 25 - Breast
SU25.1	Describe applied anatomy and appropriate investigations for breast disease
SU25.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast
SU25.3	Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.

Number	Unit 26 - Cardio-thoracic General Surgery- Chest - Heart and Lungs
SU26.1	Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases
SU26.3	Describe the clinical features of mediastinal diseases and the principles of management
SU26.4	Describe the etiology, pathogenesis, clinical features of tumors of lung and the principles of management

Number	Unit 27 - Vascular diseases
SU27.1	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.
SU27.3	Describe clinical features, investigations and principles of management of vasospastic disorders
SU27.4	Describe the types of gangrene and principles of amputation
SU27.5	Describe the applied anatomy of venous system of lower limb
SU27.6	Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins
SU27.7	Describe pathophysiology, clinical features, investigations and principles of management of Lymph edema, lymphangitis and Lymphomas

Department of Orthopedics

COURSE DESCRIPTION

GOAL:

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

COMPETENCIES:

The student must demonstrate:

1. Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first Contact care prior to appropriate referral,
2. Knowledge of the medico-legal aspects of trauma,

3. Ability to recognize and manage common infections of bone and joints in the primary care Setting,
4. Recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone Diseases and refer appropriately,
5. Ability to perform simple orthopaedic techniques as applicable to a primary care setting,

6. Ability to recommend rehabilitative services for common orthopaedic problems across all Ages.

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.

COURSEOUTCOMES

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

A. Knowledge

The student shall be able to:

1. Explain the principles of recognition of bone injuries and dislocations;

2. Apply suitable methods to detect and managed common infections of bones and joints;
3. Identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation;
4. Recognize metabolic bone diseases as seen in this country;
5. Explain etiology, pathogenesis, manifestations, and diagnosis of neoplasm affecting bones
6. Enumerate few recent advances in Orthopaedics.

B. Skills

1. Detect sprains and deliver first aid measures for common fractures and sprains and manage Uncomplicated fractures of clavicle, Colle's fracture, and phalanges fractures;
2. Use technique of splinting, plaster, and immobilization;
3. Manage common bone infections
4. Describe indications for sequestrectomy, amputations & corrective measures for bone deformities;
5. Advice aspects of rehabilitation for polio, cerebral palsy and amputation

C. Application

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

ORTHOPAEDICS

Total teaching hours for MBBS Third Professional year (Part I)

Subject	Lecture (hours)	Tutorials/Seminars/Integrated teaching (hours)	Self-Directed Learning (hours)	Clinical Posting (hours)	Skill lab (hours)	Total
Orthopaedics	**15**	**20**	**5**	**60**	**12**	**112**

The clinical postings in third professional part I shall be 18hours per week (3hours per day from Monday to Saturday)

Atleast 3hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories

Orthopaedics topics for MBBS Third Professional year (Part I)

SL. NO.	TOPIC	Lectures (hours)	Tutorials/Seminars/ Integrated teaching (hours)
1.	**SKELETAL TRAUMA, POLYTRAUMA**	**1**	**3**
2.	**FRACTURES**	**9**	**12**
3.	**MUSCULOSKELETAL INFECTION**	**3**	**3**
4.	**SKELETAL TUBERCULOSIS**	**2**	**2**

COURSE CONTENTS:

OR 1.1- Competency as represented in the MCI Competency Based Undergraduate Curriculum for the Indian Medical Graduate Volume – III 2018, where first two alphabets OR represents subject Orthopaedics and number following alphabet reflects topic number.

THEORY

Topics	Number	COMPETENCIES	Domain K/S/A/C	Level K/KH/SH/P	Core	Suggested TeachingLearning method	Suggested Assessment method	Vertical Integration(VI)	Horizontal Integration(HI)
SKELETAL TRAUMA, POLYTRAUMA	OR1.1	Describe and discuss the Principles of pre-hospital care and Casualty management of a trauma victim including principles of triage	K	KH	Y	Lecture / Small group discussion	Written and VivaVoce	-----	-----
	OR1.2	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock	K	KH	Y	Lecture	Written and VivaVoce	-----	-----
	OR1.3	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries	K	KH	Y	Lecture / Small group discussion	Written and VivaVoce	-----	-----
	OR1.4	Describe and discuss the Principles of management of soft tissue	K	KH	Y	Lecture / Small group	Written and VivaVo	-----	-----

		injuries				discussion	ce		
	OR1.5	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip	K	KH	Y	Lecture / Bed side clinic	Written and VivaVoce	-----	-----
	OR1.6	Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation	K/S	SH	Y	Simulation/DOAP Session	Written and VivaVoce	-----	-----
FRACTURES	OR2.1	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle	K	KH	Y	Lecture	Written and VivaVoce	-----	-----
	OR2.2	Describe and discuss the mechanism of Injury, clinical features,	K	KH	Y	Lecture	Written and VivaVoce	-----	-----
		investigations and plan management of fractures of proximal humerus							
	OR2.3	Select, prescribe and communicate appropriate medications for relief of	K	KH	Y	Lecture / Small group discussi	Written and VivaVoce	-----	-----

		joint pain				on/ Bed side clinic			
	OR2.4	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovascular deficit	K	KH	Y	Lecture / Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----
	OR2.5	Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury	K	KH	Y	Lecture / Small group discussion(X2)/ Bed side clinic	Written and VivaVoce	-----	-----
	OR2.6	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius	K	KH	Y	Lecture / Bed side clinic	Written and VivaVoce	-----	-----
	OR2.7	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management	K	KH	Y	Lecture	Written and VivaVoce	-----	-----

		of pelvic injuries with emphasis on hemodynamic instability							
	OR2.8	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient	K	KH	Y	Lecture	Written and VivaVoce	-----	-----
	OR2.9	Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture	K	KH	Y	Lecture	Written and VivaVoce	-----	-----
	OR2.10	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur	K	KH	Y	Lecture / Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----
	OR2.11	Describe and discuss the aetiopathogenesis, mechanism	K	KH	Y	Lecture / Small group discussi	Written and VivaVo	-----	-----
		of injury,				on /	ce		

		clinical features, investigations and principles of Y management of (a)Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome				Bed side clinic			
	OR2.12	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication	K	KH	Y	Lecture / Small group discussion	Written and VivaVoce	-----	-----
	OR2.13	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: (a) Fracture both bones leg (b) Calcaneus (c) Small bones of foot	K	KH	Y	Lecture / Small group discussion	Written and VivaVoce	-----	-----
	OR2.14	Describe and discuss the aetiopathogenesis, clinical	K	KH	Y	Lecture / Small group	Written and VivaVo	-----	-----

		features, Investigation and principles of management of ankle fractures				discussion/ Bed side clinic	ce		
	OR2.15	Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome	K	SH	Y	Lecture / Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----
	OR2.16	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management	K	KH	Y	Lecture / Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----
MUSCULOSKELETAL INFECTION	OR3.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal	K	KH	Y	Lecture / Small group discussion/ Bed side clinic	Written and VivaVoce	AN, MI,PA,	RD

		infection f) Skeletal Tuberculosis							
	OR3.2	Participate as a member in team for aspiration of joints under supervision	K/S	SH	Y	Small group discussion/DOAP session	Written and VivaVoce	-----	-----
	OR3.3	Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy.	K/S	SH	Y	DOAP session	Written and VivaVoce	-----	-----
SKELETAL TUBERCULOSIS	OR4.1	Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abscess and caries spine	K	KH	Y	Lecture / Small group discussion/ Bed side clinic	Written and VivaVoce	MI,PA, PH	RD

***** AN – Anatomy, PA - Pathology, PH – Pharmacology, RD - Radio diagnosis,

Theory: Competencies with Specific Learning Objectives (SLOs) and teaching learning methods (TLM)

Section	**Competencies with SLOs** **At the end of the course, Third professional part I MBBS student should be able to**	**Lecture15**	**Seminar/ Tutorials 20**	**SDL 5**
SKELETAL TRAUMA, POLYTRAUMA	**OR1.1 Describe and discuss the Principles of pre-hospital care and Casualty management of a trauma victim including principles of triage**			

	1-Describe the principles of field triage? 2-Define the zones of triage and describe its principles? 3-Describe the principles of first aid? 4-Demostrate the principles of prevention of blood loss in a trauma victim? 5-Demostrate the principles of stabilization of spine and transport of accident victim? 6-Demonstate the principles of splinting the injured upper and lower limb?		✓	-
	OR1.2 Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock			
	1-Define shock? 2-Mention the types of shock? 3-Describe the etiopathogenesis of the shock? 4-Describe the clinical features and management of haemorrhagic shock?	✓		
	OR1.3 Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries			
	1-Describe the types of soft tissue injury? 2-Describe ligament injuries and muscle injuries? 3-Describe open and closed injuries? 4-Discuss the importance of soft tissue injuries on fractures?		✓	
	OR1.4 Describe and discuss the Principles of management of soft tissue injuries			
	1-Describe the types of soft tissue injury? 2-Describe ligament injuries and muscle injuries? 3-Describe open and closed injuries? 4-Discuss the importance of soft tissue injuries on fractures?			
	OR1.5 Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip			
	1-Define subluxation and dislocation? 2. Mention the types of shoulder joint dislocation? 3. Discuss the aetiopathogenesis of anterior & posterior shoulder dislocation? 4. Discuss the clinical features (signs & symptoms) of anterior & posterior shoulder dislocation? 5. Discuss the complications of shoulder joint dislocation? 6.Describe the reduction manoeuvre (Kocher's & Stimson's methods		✓	
	OR1.6 Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation			

	1. Mention the types of hip joint dislocation? 2. Discuss the aetiopathogenesis of posterior hip dislocation? 3. Discuss the clinical features (signs & symptoms) of posterior hip dislocation? 4. Discuss the complications of hip joint dislocation? 5.Describe the reduction manoeuver of hip dislocation (Allis methods)			
	OR 2.1 Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle			
	1. Describe salient anatomical features of clavicle 2. Describe the mechanism of injury of fracture of clavicle 3. Describe clinical feature and investigations for a patient with clavicle fracture 4. Discuss the conservative and surgical management of clavicular fractures 5. Discuss the complications of clavicular fractures	✓		
	OR 2.2 Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus			
	1. Describe the anatomy of proximal part of humerus and attachments of rotator cuff 2. Describe the blood supply of proximal humerus 3. Describe the i) clinical features and ii) radiological views for proximal humerus fractures 4. Discuss the i) conservative management ii) surgical management of fracture of proximal humerus	✓		
	OR 2.3 Select, prescribe and communicate appropriate medications for relief of joint pain			
	1. Mention the various causes of joint pain 2. Discuss the investigations in a patient with joint pain 3. Discuss the various drugs prescribed to a patient with joint pain 4. What are the different types of NSAIDs and its contraindications in orthopaedic pain management			
	5. Mention the precautions to be taken while prescribing NSAIDs			
	OR 2.4 Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovascular deficit			

	1. Describe the mechanism of injury in a patient with fracture shaft of humerus. 2. Discuss the clinical features and investigations in a patient with fracture shaft of humerus 3. Should be able to identify Holstein-Lewis fracture 4. Discuss the management of fracture shaft of humerus 5. Describe the mechanism of injury in a patient with intercondylar fracture of humerus. 6. Discuss the anatomy of distal end of humerus 7. Discuss the clinical features and investigations in a patient with intercondylar fracture of humerus 8. Discuss the management of intercondylar fracture of humerus	✓		
	OR 2.5 Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury			
	1. Describe the flexor muscles of forearm 2. Describe the mechanism of injury for both bone fracture of forearm 3. Define Galezzai fracture the mechanism of injury for Galeazzi fracture 4. Define Monteggia fracture and describe the mechanism of injury for Monteggia fracture 5. Describe the clinical features and management for both bone fracture of forearm 6. Describe the clinical features and management for Galeazzi fracture 7. Describe the clinical features and management for Monteggia fracture	✓		
	OR 2.6 Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius			
	1. Enumerate the named fractures around the distal end of radius 2. Describe mechanism of injury of each fracture around distal end of radius 3. Define Colles fracture and discuss mechanism of injury 4. Mention the different types of displacement in Colles fracture 5. Discuss the clinical feature and investigations of Colles fracture 6. Discuss the conservative line of management and of Colles fracture	✓	✓	
	7. Discuss the surgical line of management of Colles fracture 8. Enumerate the complications of Colles fracture			
	OR 2.7 Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability			

	1. Describe the gross anatomy of pelvic bone 2. Describe the mechanism of pelvic injury and classify pelvic fracture 3. Describe the clinical features of pelvis injury 4. Discuss the investigations and management of pelvic injuries 5. Discuss the hemodynamic instability in pelvis injuries and its management	✓	✓	
	OR 2.8 Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient			
	1. Describe the gross anatomy of spine 2. Describe the mechanism of spine injuries and classify spine fracture 3. Describe the clinical features of spine injuries 4. Discuss the investigations and management of spine injuries 5. Discuss the clinical features of spinal shock and its management 6. Discuss the complications of spine injuries	✓		
	OR 2.9 Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture			
	1. Describe the gross anatomy of acetabulum 2. Describe the mechanism of acetabulum fracture and classify 3. Describe the clinical features of acetabulum fracture 4. Discuss the investigations and management of acetabulum fracture	✓		
	OR 2.10 Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur			
	a)1. Describe the gross anatomy of proximal femur 2. Describe the mechanism of injury and classification of fracture neck of femur 3. Describe the clinical features of fracture neck of femur 4. Discuss the investigations and management of fracture neck of femur b) 1. Describe the gross anatomy of proximal femur 2. Describe the mechanism of injury and classification of Trochanteric fracture 3. Describe the clinical features of Trochanteric fracture 4. Discuss the investigations and management of Trochanteric fracture	✓	✓	

	OR 2.11 Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of a)Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome			
	a)1. Describe the anatomy of patella 2. Describe the mechanism of injury of patella bone fracture 3. Describe the clinical features of patella bone fracture 4. Discuss the investigations and management of patella bone fracture b)1. Describe the anatomy of distal femur 2. Describe the mechanism of injury of distal femur fracture 3. Describe the clinical features of distal femur fracture 4. Discuss the investigations and management of distal femur fracture c) 1. Describe the anatomy of proximal tibia 2. Describe the mechanism of injury of proximal tibia fracture 3. Describe the clinical features of proximal tibia fracture 4. Discuss the investigations and management of proximal tibia fracture 5.Discuss compartment syndrome with respect to proximal tibia fracture	✓	✓	
	OR 2.12 Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication			
	A) Paediatric femur bone 1. Describe the anatomy of paediatric femur bone 2. Describe the mechanism of injury of paediatric femur shaft fracture 3. Describe the clinical features of paediatric femur shaft fracture 4. Discuss the investigations and management of paediatric femur shaft fracture B) Adult femur bone 1. Describe the anatomy of adult femur bone 2. Describe the mechanism of injury of adult femur shaft fracture 3. Describe the clinical features of adult femur shaft fracture 4. Discuss the investigations and management of adult femur shaft fracture C) Fat embolism 1. Define fat embolism 2. Describe the aetiopathogenesis of fat embolism 3. Describe the clinical features of fat embolism	✓	✓	
	4. Discuss the investigations and management of fat embolism			

	OR 2.13 Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: **(a) Fracture both bones leg** **(b) Calcaneus** **(c) Small bones of foot**			
	a)1. Describe the anatomy of tibia and fibula 2. Describe the mechanism of injury of fracture both bone leg 3. Describe the clinical features of fracture both bone leg 4. Discuss the investigations and management of fracture both bone leg b)1. Describe the anatomy of calcaneus 2. Describe the mechanism of injury of fracture calcaneus 3. Describe the clinical features of fracture calcaneus 4. Discuss the investigations and management of fracture calcaneus c)1. Describe the anatomy of small bone of foot 2. Describe the mechanism of injury offracture small bone of foot 3. Describe the clinical features of fracture small bone of foot 4. Discuss the investigations and management of fracture small bone of foot	✓	✓	
	OR 2.14 Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures			
	1. Describe the anatomy of ankle joint 2. Describe the mechanism of injury ofankle fractures, ankle injuries 3. Describe the clinical features of ankle fractures 4. Discuss the investigations and management of ankle fractures	✓	✓	
	OR 2.15 Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome			
	1. Define malunion, delayed union and non-union 2. Describe the etiopathogenesis of malunion, delayed union, non-union and infective non-union 3. Describe the clinical features of malunion, delayed union non-union and infective non-union 4. Discuss the investigations and principles of management of malunion, delayed union non-union and infective non-union b) 1. Define compartmental syndrome 2. Describe the etiopathogenesis of compartmental syndrome 3. Describe the clinical features of compartmental syndrome 4. Discuss the investigations compartmental syndrome 5. Discuss the principles of management of compartmental syndrome 6. Describe the complications of compartmental syndrome		✓	

	OR 2.16 Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management			
	1. Define fracture and classify fractures 2. Describe the Mechanism of injury of open fractures 3. Describe the clinical features of open fractures 4. Discuss the investigations of open fractures 5. Discuss the principles of management of open fractures 6. Describe the complications of open fractures	✓		
	OR 3.1 describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections **a) Acute Osteomyelitis** **b) Subacute osteomyelitis** **c) Chronic osteomyelitis** **d) Septic arthritis & HIV infection** **e) Spirochaetal infection** **f) Skeletal Tuberculosis**			
	a) 1. Define Osteomyelitis and Classify 2. Describe the etiopathogenesis of Acute Osteomyelitis 3. Describe the clinical features of Acute Osteomyelitis 4. Discuss the investigations of Acute Osteomyelitis 5. Discuss the principles of management of Acute Osteomyelitis 6. Describe the complications of Acute Osteomyelitis b)1. Define Subacute osteomyelitis / Brodie's abscess 2. Describe the etiopathogenesis of Subacute osteomyelitis 3. Describe the clinical features of Subacute osteomyelitis 4. Discuss the investigations of Subacute osteomyelitis 5. Discuss the principles of management of Subacute osteomyelitis 6. Describe the complications of Subacute osteomyelitis c)1. Define Chronic osteomyelitis 2. Describe the etiopathogenesis of Chronic osteomyelitis / Garre's Osteomyelitis 3. Describe the clinical features of Chronic osteomyelitis 4. Discuss the investigations of Chronic osteomyelitis 5. Discuss the principles of management of Chronic osteomyelitis 6. Describe the complications of Chronic osteomyelitis d)1. Define Septic arthritis and Tom Smith arthritis 2. Describe the etiopathogenesis of Septic arthritis of hip & knee and Tom Smith arthritis 3. Describe the clinical features of Septic arthritis of hip & knee and Tom Smith arthritis 4. Discuss the investigations of Septic arthritis of hip & knee and Tom Smith arthritis 5. Discuss the principles of management of Septic arthritis of hip & knee and Tom Smith arthritis	✓	✓	

	6. Describe the complications of Septic arthritis of hip & knee and Tom Smith arthritis e)1. Define Skeletal Tuberculosis- TB HIP 2. Describe the etiopathogenesis of Skeletal Tuberculosis - TB HIP 3. Describe the clinical features of Skeletal Tuberculosis - TB HIP 4. Discuss the investigations of Skeletal Tuberculosis - TB HIP 5. Discuss the principles of management of Skeletal Tuberculosis - TB HIP 6. Describe the complications of Skeletal Tuberculosis -TB HIP f)1. Define Skeletal Tuberculosis- TB SPINE 2. Describe the etiopathogenesis of Skeletal Tuberculosis - TB SPINE 3. Describe the clinical features of Skeletal Tuberculosis - TB SPINE 4. Discuss the investigations of Skeletal Tuberculosis - TB SPINE 5. Discuss the principles of management of Skeletal Tuberculosis - TB SPINE 6. Describe the complications of Skeletal Tuberculosis -TB SPINE			
	OR 3.2 Participate as a member in team for aspiration of joints under supervision			
	1. Describe the normal anatomy of knee joint 2. Describe normal characteristic of synovial fluid. 3. Mention the indication for Aspiration of knee joint 4. Explain steps involved in aspiration of knee joint		✓	
	OR 3.3 Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy			
	1. Define abscess and its etiology 2. Explain steps of incision and drainage 3. Define chronic osteomyelitis, etiology and types 4. Define sequestrectomy and saucerisation 5. Discuss steps involved in sequestrectomy and saucerisation 6. Define arthrotomy and its indications 7. discuss technique involved in knee arthrotomy		✓	
	OR 4.1 Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abscess and caries spine			
	a) Tuberculosis of hip joint 1. Describe the etiopathogenesis of Tuberculosis of hip joint 2. Describe the clinical features of Tuberculosis of hip joint 3.Describe the different stages of Tuberculosis of hip joint 4.Discuss the investigations of Tuberculosis of hip joint 5. Discuss the principles of management of Tuberculosis of hip joint 6.Describe the complication of Tuberculosis of hip joint b) Tuberculosis of knee joint	✓	✓	

	1. Describe the etiopathogenesis of Tuberculosis of knee joint 2. Describe the clinical features of Tuberculosis of knee joint 3.Discuss the investigations of Tuberculosis of hip joint 4. Discuss the principles of management of Tuberculosis of hip joint 5.Describe the complication of Tuberculosis of hip joint c) Tuberculosis of spine 1. Describe the etiopathogenesis of Tuberculosis of spine 2. Describe the clinical features of Tuberculosis of spine 3.Discuss the investigations of Tuberculosis of spine 4. Discuss the principles of management of Tuberculosis of spine 5.Describe the complication of Tuberculosis of spine d) Cold abscess Tutorials e) Carries spine Tutorial			

Bedside Clinics in Orthopaedics for MBBS Third Professional year (Part I)

Topics	Number	COMPETENCIES	Hours
SKELETAL TRAUMA, POLYTRAUMA	OR1.5	Elicit, document and present a history in a patient presenting with dislocation of shoulder, hip and knee joint	
FRACTURES	OR2.4 OR2.15	Elicit, document, present a history and clinical findings in a patient presenting with malunited Supracondylar fracture with emphasis of neurovascular deficit	
	OR2.6 OR2.15	Elicit, document, present a history and clinical findings in a patient presenting with malunited distal end radius fracture	
	OR2.10 OR2.15	Elicit, document, present a history and clinical findings in a patient presenting with malunited intertrochanteric femur fracture	
	OR2.10 OR2.15	Elicit, document, present a history and clinical findings in a patient presenting with non-union of femur neck fracture	
	OR2.11 OR2.15	Elicit, document and present a history in a patient presenting with proximal tibia fracture with emphasis of neurovascular injury and compartment syndrome.	
	OR2.14	Elicit, document and present a history in a patient presenting with ankle fractures	

	OR2.16 OR2.15	Elicit, document and present a history in a patient presenting with open fractures and focus on secondary infection prevention.	
MUSCULOSKELETAL INFECTION	OR3.1	Elicit, document, present a history and clinical findings in a patient presenting with acute osteomyelitis	
	OR3.1	Elicit, document, present a history and clinical findings in a patient presenting with chronic osteomyelitis.	
SKELETAL TUBERCULOSIS	OR4.1	Elicit, document, present a history and clinical findings in a patient presenting with skeletal tuberculosis	

Clinical postings and skill lab

1st week

		Method of Assessment
OPD	Observe and record new and follow up cases in OPD(2hrs) AETCOM (1hr)	OSCE
Post Admission day ward rounds	Follow up of assigned cases(1hr), Bedside clinics (General scheme of History taking) SGD,DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE
OT	Observe OT procedures and document in the logbook with Discussion(3hrs)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (General physical examination) SGD, DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (General physical examination) SGD, DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE
Skill lab	OR13.2 Describe the Principles of FIRST AID Small group discussion (1 hr) DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE with Simulation based assessment

2nd week

		Method of Assessment
OPD	Observe and record new and follow up cases in OPD(2hrs) AETCOM (1hr)	OSCE
Post Admission day ward rounds	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of discharging sinus) SGD,DOAP(1hr), Discussion and closure (1hr)	OSCE
OT	Observe OT procedures and document in the logbook with Discussion(3hrs)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of Swelling) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of deformity) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	OSCE
Skill lab	OR13.2 Participate as a member in team for Resuscitation of Polytrauma victim Small group discussion (1 hr), DOAP(1 hr), SDL, Discussion and closure (1 hr)	OSCE with Simulation based assessment

3rd week

		Method of Assessment
OPD	Observe and record new and follow up cases in OPD(2hrs) AETCOM (1hr)	OSCE
Post Admission day ward rounds	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of deformed limb) DOAP(1hr), Discussion and closure (1hr)	OSCE

OT	Observe OT procedures and document in the logbook with Discussion(3hrs)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of Malunited fracture) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of non-union) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	OSCE
Skill lab	OR13.2 Demonstrate maintenance of an airway and Splintage of injured limb in a mannequin or equivalent Small group discussion (1 hr) DOAP(1 hr), SDL, Discussion and closure (1 hr)	OSCE with Simulation based assessment

4th week

		Method of Assessment
OPD	Observe and record new and follow up cases in OPD(2hrs) AETCOM (1hr)	OSCE
Post Admission day ward rounds	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of swelling) DOAP(1hr), Discussion and closure (1hr)	OSCE
OT	Observe OT procedures and document in the logbook with Discussion(3hrs)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of joint effusion) SGD,DOAP(1hr), Discussion and closure (1hr)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of a case of joint pain) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	OSCE

Skill lab	OR13.1 Participate in a team for above elbow plaster application in patients and Demonstrate ability to perform in a mannequin or equivalent. Small group discussion (1 hr) DOAP(1 hr), SDL, Discussion and closure (1 hr)	OSCE with Simulation based assessment

Internal Assessment examination: --

Theory: 100 marks

One internal assessments (IA) will be conducted at the end of module one and module two for 100 marks. Average marks of all theory internal assessment examinations (IAE) is taken into consideration for calculating the final internal assessment marks. Marks obtained by Periodic Assessment tests like Quiz, PCT, MCQs, will be added to theory internal marks.
Please note: Prior to submission to the University, the marks for each of the two internal examination theory assessments will be calculated out of 10 marks($1/4^{th}$ of General Surgery marks), regardless of the maximum marks.

Type of Questions	Number of questions	Marks for each question	Total
Multiple Choice Questions	20	1	20
Long Essay Questions	2	10	20
Short Essay Questions	6	5	30
Reasoning Questions / Short Answer Questions	10	3	30
Total marks			**100**

Note:

- Case Based Questions: 20% of total marks.
- Two questions based on integration (AITo) in Internal Assessment Examination and one question from AETCOM.
- A student who has not taken minimum required number of tests for Internal Assessment, each in theory and practical will not be eligible for University examinations.
- The results of Internal Assessment should be displayed on notice board within 2 weeks of the test and an opportunity to be provided to the students to discuss the results and get feedback on making their performance better.
- Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.

Practical/Viva: --100 Marks

Two practical assessments will be conducted along with the Theory Internal Assessments. Average marks of the practical IAE will be taken. The marks obtained for Logbook, Record Book and Professionalism will be added to practical IAE marks. Objective Structured Practical Examination will be a method of assessment in Internal Assessment and Summative examination.

Department of Radiology

Third ProfessionalMBBS Part I:

Two weeks clinical posting

Radiology (25% of allotted time of third professional shall be utilized for integrated learning with pre- and para- clinical subjects andshall beassessedduringtheclinical subjectsexamination.**)**

1. **TeachingHours: 10h**
2. **Tutorials/ Seminars/Integrated Teaching: 08h**
3. **Self- DirectedLearning : 02h**
4. **Total(hours): 20h**

Goals and Objectives:

The aim of teaching the undergraduate student in radiology is to impart such knowledge that may enable him to understand the value, indications, and limitations of radiological investigations. This will allow the future clinicians to have a meaningful discussion about the suitability of an investigation with the radiologists and use them as a resource.

Competencies in RADIOLOGY: The student must be able to

1. Define radiation and the interaction of radiation and importance ofradiation protection
2. Describe the evolution of Radiodiagnosis. Identify variousradiological equipmentsin the current era
3. Enumerate indications for various common radiologicalinvestigations, choose the most appropriate and cost effectivemethod and interpret findings in common conditions pertaining tocommon clinical conditions
5. Describe the role of Interventional Radiology in common clinicalConditions
6. Describe the role of Emergency Radiology, miscellaneous & appliedaspects, interaction with clinical departments
7. Describe preparation of patient for common imaging procedures
8. Describe the effects of radiation in pregnancy and the methods ofprevention/ minimization of radiation exposure
9. Describe the components of the PC & PNDT Act and its medicolegal implications

Specific learning objectives in RADIOLOGY

KNOWLEDGE :Attheendofthecourse,thestudentshouldbe able to:

1. Describe the indications of different radiological procedures
2. Understand the basic physics by which each modality works which helps in understanding the modality's limitations.Forexampleby knowing the use of sound reflection in ultrasound helpsstudentsunderstand the limitations of ultrasound, for example, poor imaging at depth. It also highlights theabsence of ionizing radiation

3. Identify emergencies like pneumothorax, pneumoperitoneum etc.,
4. Interpret a Chest radiographin a systematic manner

5.Recognize the correctpositioning of feedingtubes, venous lines,and endotrachealtubes on CXR

6.Summarize thecriticalinformation that mustbe included on animaging examrequisition

Skills

Attheendofthecourse,thestudentshouldbe able to:

- DescribetheevolutionofRadiodiagnosis.Identifyvariousradiologicalequipmentinthecurrentera.
- Enumerateindicationsforvariouscommonradiologicalinvestigations,choose themostappropriateandcosteffectivemethodandinterpretfindingsincommon conditionspertainingtodisorderof
  - ENT.
  - Obstetrics&Gynecology.
  - Internalmedicine.
  - Surgery.
  - Pediatrics
  - Commonmalignancies.

Attitudeandcommunication

1.Communicationwithempathytopatients&patient'sattenders.

2.Toobtaintherelevantandessentialclinicaldatatoaidinimageinterpretation.

3.Tocounsel&obtaininformedconsentfrompatient&patientsattenders

Integration

The undergraduate teaching in radiology shall be aligned and integrated horizontally and vertically in order to understandthefundamentalprinciplesofradiologicimaging,anatomiccorrelationandtheir application indiagnosis**.**

INTERNS IN RADIOLOGY

GOAL

The aim of teaching theundergraduate studentin Radio diagnosisistoimpartsuch knowledgeand skills that may enable him to

understand principles of image logy and recognize risk andcomplications of radiologic procedures and the need for protective techniques. At the end ofinternship,graduateshouldbeabletocounselandpreparepatientsforvariousradiologicprocedures.

COMPETENCIES:

1.Identifyinganddiagnosingacuteabdominalconditionsclinicallyandchooseappropriateimagingmodalityfordiagnosis.
2.Identifyinganddiagnosingacutetraumaticconditionsinbonesandskullusing Xrays /CTScanswithemphasisonfracturesandheadinjuries.3.Recognizingbasichazards andprecautionsinradio-diagnostic practicesspeciallyrelatedtopregnancy.
4.DemonstratingawarenessofthevariouslawslikePCPNDTAct.

Recommended Books

S.No	NameofBook	Author(s)	Edition	Publishers
1.	Radiologyandimagingformedicalstudents.	DavidSutton	7th	ChurchillLivingstone
2.	TextbookofRadiologyandImaging	DavidSutton	7th	ChurchillLivingstone
3.	DiagnosticRadiology– Atextbookofmedicalimaging.	Grainger&Allison's	6th	ChurchillLivingstoneELSEVIER
4.	DiagnosticUltrasound	Carol.MRumack	5th	ELSEVIER

Department of Anaesthesiology

Third ProfessionalMBBS Part I:

Two weeks clinical posting (including dentistry)

Anaesthesiology (25% of allotted time of third professional shall be utilized for integrated learning with pre- and para- clinical subjects**)**

1. **Teaching Hours: 08h**
2. **Tutorials/ Seminars/Integrated Teaching: 10h**
3. **Self- DirectedLearning : 02h**
4. **Total(hours): 20h**

Goals and Objectives:

The aim of teaching the undergraduate student in anaesthesia is to impart such knowledge and skills that may enable him to understand principles of anaesthesia and recognize risk and complications of anaesthesia. At the end of internship, graduate should be able to perform cardio-pulmonary resuscitation correctly, including recognition of cardiac arrest.

Competencies in ANESTHESIOLOGY: The student must demonstrate ability to

1. Describe and discuss the pre-operative evaluation, assessing fitness for surgery and American Society of Anesthesiologists (ASA) physical status(PS) risk grading and management/modifications of the preoperative medications in relation to anaesthesia / surgery,
2. Describe and discuss the roles of Anaesthesiologist as a peri-operative physician includingpre-medication, endotracheal intubation, general anaesthesia and recovery (includingvariations in recovery from anaesthesia and anaesthetic complications)
3. Describe appropriateness of oxygen therapy and common oxygen delivery devices,
4. Describe commonly user perioperative fluids and their rationality
5. Describe and discuss the management of acute and chronic pain, including labour analgesia
6. Demonstrate awareness about the maintenance of airway in children and adults in varioussituations,
7. Demonstrate the awareness about the indications, selection of cases and execution of cardiopulmonaryresuscitation in emergencies and in the intensive care and high dependency units,
8. Choose cases for local / regional anaesthesia and demonstrate the ability to administer thesame,
9. Discuss the implications and obtain informed consent for various procedures and to maintainthe documents.

Specific learning objectives in ANESTHESIOLOGY

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

1. Describe the evolution of Anesthesiology as a modern specialty
2. Describe the roles of Anesthesiologist in the medical profession
3. Understand the stepwise algorithm approach of BLS and ACLS
4. Describe the principles of preoperative evaluation
5. Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia
6. Describe and discuss the pharmacology of drugs used in induction and maintenance of anesthesia
7. Describe the principles of fluid therapy in the perioperative period
8. Describe the principles of monitoring and resuscitation in the recovery room
9. Enumerate and describe the criteria for admission and discharge of a patient to an ICU
10. Describe principles of providing post-operative pain relief and management of chronic pain

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

1. Observe Pre-anaesthetic check-up and prescribe pre-anaesthetic medications
2. Demonstrate Venepuncture and set up intravenous drip in a simulated environment
3. Observe Laryngoscopy and endotracheal intubation,
4. Observe Lumbar puncture, spinal anaesthesia and simple nerve blocks
5. Demonstrate Simple general anaesthetic procedures under supervision in a simulated environment
6. Observe monitoring of patients during anaesthesia and in the post-operative period
7. Observe maintenance of anaesthetic records
8. Observe cardio-pulmonary resuscitation including recognition of cardiac arrest.
9. Demonstrate Counselling and advice regarding various methods of anesthesia in a simulated environment
10. Observe Anesthesia for major and minor surgical and other procedures

Attitude and communication:

1. Communication with empathy to patients & patient's attenders
2. To counsel & obtain informed consent from patient & patients attenders

Integration:

1. The undergraduate teaching in Anesthesia shall 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.

INTERNS IN ANAESTHESIOLOGY

A. **THERAPEUTIC-** An intern must perform or assist in:

   a. Pre-anaesthetic check-up and prescribe pre-anaesthetic medications,
   b. Venepuncture and set up intravenous drip,
   c. Laryngoscopy and endotracheal intubation,
   d. Lumbar puncture, spinal anaesthesia and simple nerve blocks,
   e. Simple general anaesthetic procedures under supervision,
   f. Monitor patients during anaesthesia and in the post-operative period,
   g. Maintain anaesthetic records,
   h. Perform cardio-pulmonary resuscitation correctly, including recognition of cardiac arrest.

B. **Skill that an intern should be able to perform under supervision**:

   a. Counselling and advice regarding various methods of anaesthesia,
   b. Recognise and manage problems associated with emergency anaesthesia,
   c. Recognise and treat complications in the post-operative period.

C. An intern must have observed or preferably assisted at the following operations/ procedures:

   a. Anaesthesia for major and minor surgical and other procedures

Recommended Books

1. Basics of Anesthesia, by Ronald D. Miller MD MS (Author), Manuel Pardo MD (Author)
2. Lee's Synopsis of Anaesthesia by Jeremy N. Cashman FRCA (Editor), Judith Dinsmore (Editor)
3. Smith and Aitkenhead's Textbook of Anaesthesia
4. Short Textbook of Anesthesia by Ajay Yadav (Author)

DEPARTMENT OF DENTAL SURGERY

1. GOALS AND OBJECTIVES:

The medical graduates during training for dentistry in medical institution should acquire adequate knowledge, necessary skills that may enable them to understand principles of dentistry and recognize common dental diseases. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practice of dentistry through exposure to common dental disorders. During the course period the graduate should acquire

- Adequate knowledge of the structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general state of health and also bearing on physical and social well-being of the patient.
- Adequate knowledge of clinical disciplines and methods which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive diagnostic and therapeutic aspects of dentistry.

2. COMPETENCIES

The student must demonstrate:

- Understanding of the structural and functional basis, principles of diagnosis and management of common problems in dentistry
- Understanding etiology of dental infections and loss of teeth and their sequelae
- Understanding of malignancy in oral cavity.
- Understanding of Periodontology
- Ability to identify dental diseases.

Knowledge

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

- Describe the etiology pathophysiology of dental caries and their sequelae
- Describe the etiology pathophysiology of loss of teeth and associated structures, its sequelae and management
- Describe the pathophysiology, impact and malocclusion
- Describe the common malignancy in oral cavity and their

management including prevention.

- Describe the pathophysiology of Periodontal diseases and management

Skills

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

- Identify common dental diseases–dental caries, missing teeth, malocclusion
- Pre-cancerous and cancerous lesions and periodontal diseases.
- Obtain inform consent and counsel patients for dental hygiene and dental procedure.

3. ATTITUDEANDCOMMUNICATION

- Communication with empathy to patients &patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

4. INTEGRATION

- The undergraduate teaching in dentistry shall be aligned and integrated horizontally and vertically inorder to provide a sound biological basis and holisticapproach to the care of the patient with dentaldisorder.

THEORY CLASSES:

Number	Topic
DEN1	Enumerate the parts of the tooth and Discuss the role of causative micro organisms in the etio-pathogenesis of dental caries
DEN2	Discuss the role of dental caries as a focus of sepsis
DEN3	Discuss the various causes for partial / complete loss of teeth and associated structures and Discuss the local and systemic sequelae of the above
DEN4	Enumerate common methods of restoring the edentulous state
DEN5	Aware of malocclusion and the tissues that cause it and enumerate the impact of malocclusion on aesthetics, health.
DEN6	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity

DEN7	Discuss the role of etiological factors in the formation of precancerous/cancerous lesions
DEN8	Enumerate the methods of tooth numbering, dental terminology of tooth surfaces of tooth and supporting structures
DEN9	Enumerate the common diseases that affect the periodontium and identify local and systemic causative factors
DEN10	Discuss the role of Periodontal disease as a focus of sepsis

PRACTICALS

Number	Topic		
DEN 1	Identify Dental caries ,Periodontal disease and malocclusion		
DEN 2	Identify complete complement of teeth and identify missing teeth		
DEN 3	1st hour	2nd hour	3rd hour
	Counsel patients on the importance of restoring missing teeth / tissues with respect to the benefits on oral and systemic health	Formative assessment	Feedback on formative assessment
DEN 4	Counsel patients with respect to oral hygiene, diet and its effect on systemic health		
DEN 5	Identify potential pre-cancerous/ cancerous lesions		
DEN 6	1st hour	2nd hour	
	Counsel patients to risks of oral cancer with respect to tobacco, smoking ,alcohol and other causative factors	End posting assessment	

REFERENCE BOOKS:

S.No	NameofBook	Author(s)	Edition	Publishers
1.	Bailey & Love's Short Practice of Surgery	Norman Williams,PRonanO'Connell, Andrew McCaskie	27th Editi on	CRC Press
2.	Manipal Manual of Surgery	K.R Shenoy	4th edition	CBS Publishers &Distributors
3.	SRB's Manual of Surgery	Sriram Bhat Paperback Bunko	6th edition	Jaypee Brothers Medical Publishers
4.	Physicians hand book of oral and maxilla facial surgery	Daniel M laskin, Eric R Carlson	2nd edition	Quintessenc e

Department of

Obstetrics and Genecology

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The GMER 2019 states the following to be the competencies to be achieved by the IMG

GOAL

ThebroadgoaloftheteachingofundergraduatestudentsinObstetricsandGynaecologyisthathe/sheshall acquire knowledge base, skills, attitude and communication skills pertaining to pregnancy, childbirthand diseases of female reproductive tract for the practice of Obstetrics and Gynaecology. The student must acquire the necessary skills for providing the bar essential under lyingcare in the management of pregnancy and child birth.

Obstetrics and Gynaecology

(a) **Competencies in Obstetrics**: The student must demonstrate ability to:

1. Provide peri-conceptionalcounseling and antenatal care,

2. Identify high-risk pregnancies and refer appropriately,

3. Conduct normal deliveries, using safe delivery practices in the primary and secondary caresettings,

4. Prescribe drugs safely and appropriately in pregnancy and lactation,

5. Diagnose complications of labor, institute primary care and refer in a timely manner,

6. Perform early neonatal resuscitation,

7. Provide postnatal care, including education in breast-feeding,

8. Counsel and support couples in the correct choice of contraception

9. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient,

10. Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy(MTP), Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act) and other related
Acts.

Competencies in Gynaecology: The student must demonstrate ability to:

1. Elicit a gynaecologic history, perform appropriate physical and pelvic examinations andPAPsmear in the primary care setting,

2. Recognize, diagnose and manage common reproductive tract infections in the primary care

setting,

3. Recognize and diagnose common genital cancers and refer them appropriately.

OBJECTIVES:
Knowledge:

Attheendofthecourse,thestudentshall be ableto:

- Outlinetheanatomy,physiologyandpathophysiologyofthereproductivesystemandthecommonconditionsaffectingit
- Detectnormalpregnancy,labour,puerperiumandmanagetheproblemshe/sheislikelytoencountertherein
- Listtheleadingcausesofmaternalandperinatalmortalityandmorbidity
- Understandtheprinciplesofcontraceptionandvarioustechniquesemployed,methodsofmedicaltermination ofpregnancy,permanent methods ofsterilization andtheircomplications
- Identifytheuse,abuseandsideeffectsofdrugsinpregnancyandlactationandmanagementofconditionsassociatedwiththep re-menopausal andpost-menopausalperiod
- Describethenationalprogramofmaternal&childhealthandfamilywelfareandtheirimplementationatvarious levels
- Identifycommongynaecologicaldiseasesanddescribetheprinciplesoftheirmanagement
- State the indications, techniques and complications of surgerieslikeCaesarean section,laparotomy, abdominal and vaginal hysterectomy, Fothergill operation and vacuum aspiration forMedicalTerminationofPregnancy (MTP)

Skills

Attheendofthecourse,thestudentshall be ableto:

- Examineapregnantwoman;recognizehighriskpregnanciesandmakeappropriatereferrals
- Conductnormaldelivery,recognizecomplicationsandprovidepostnatalcare
- Resuscitatethenewbornandrecognizethecommoncongenitalanomalies inthenewborn
- Advisecouplesontheuseofvariousavailablecontraceptivemethods,devicesandassistininsertionandremovalofintra-

uterinecontraceptivedevices

- Performpelvicexamination,diagnoseandmanagecommongynaecologicalproblemsincludingearlydetection ofcommongenitalmalignancies
- Performvaginalcytologicalsmear,performpostcoitaltestandwetvaginalsmearexaminationforTrichomonasvaginalis,mon iliasisandgramstainforgonorrhoea
- Interpretationofdataofinvestigationslikebiochemical,histopathological,radiological,ultrasoundetc.

Attitudeandcommunication

- Communicationwithempathytopatients&patient'sattenders
- Tocounsel&obtaininformedconsentfrompatient&patientsattenders

Integration

Theteachingshouldbealignedandintegratedhorizontallyandverticallyinordertoprovidecomprehensivecareforwomeni ntheirreproductiveyearsandbeyond,basedonasoundknowledgeofstructure,functionsanddiseaseandtheirclinical,social,emo tional,psychologicalcorrelatesinthecontextofnationalhealthpriorities.

Based on the competencies mentioned in the above said document, following items have been developed and spelt out in a tabular format

- Specific learning objectives (SLO's) to achieve each competency
- Suggested Teaching-Learning methods
- Preferred assessment methods (both formative and summative)

This is only a guideline and teachers are encouraged to improvise and develop more detailed SLOs. The T-L methods can be modified based on local resources.

A **question paper layout(theory)**has also been added to ensure that there is consistency among different paper setters.

Also, a suggested **assessment format (practical)** has also been given.

TERMS AND TEACHING GUIDELINES

1.LECTURE

Is a teaching learning method which includes traditional and interactive sessions involving a large group

2. SMALL GROUP DISCUSSION

Is an instructional method involving small groups of students in an appropriate learning context.

3. DOAP (Demonstration- Observation - Assistance - Performance)

A practical session that allows the student to observe demonstration, assists the performer, perform in a simulated environment, perform under supervision or perform independently.

4. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning , choosing and implementing appropriate learning methods.

5. SKILL ASSESSMENT

Is a session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)467

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know.

MINIMUM TEACHING HOURS

Sl No	Topic	Number of competencies	Lecture	SGD/ Tutorial	DOAP	SDL
1	**Demographic and Vital Statistics**	3	4	0	0	0
2	**Anatomy of the female reproductive tract**	2	3	0	0	0
3	**Physiology of conception**	1	2	0	0	0
4	**Development of the fetus and the placenta**	1	1	0	0	0
5	**Preconception counselling**	2	1	1	0	0
6	**Diagnosis of pregnancy**	1	1	1	0	0
7	**Maternal Changes in pregnancy**	1	1	0	0	0
8	**Antenatal Care**	8	5	1	1	1
9	**Complications in early pregnancy**	5	3	2	0	0
10	**Antepartum haemorrhage**	2	3	2	0	0
11	**Multiple pregnancies**	1	1	1	0	0
12	**Medical Disorders in pregnancy**	8	10	7	0	0

13	**Labour**	5	5	2	2	0
14	**Abnormal Lie and Presentation; Maternal Pelvis**	4	4	3	1	1
15	**Operative obstetrics**	2	0	2	1	0
16	**Complications of the third stage of labour**	4	4	3	1	0
17	**Lactation**	3	3	3	0	0
18	**Care of the new born**	4	2	2	2	0
19	**Normal and abnormal puerperium**	4	2	2	2	0
20	**Medical termination of pregnancy**	3	2	2	1	0
21	**Contraception**	2	5	4	1	0
22	**Vaginal discharge**	2	2	2	0	0
23	**Normal and abnormal puberty**	3	3	1	0	0
24	**Abnormal uterine bleeding**	2	2	1	0	0
25	**Amenorrhea**	2	2	1	0	0
26	**Genital injuries and fistulae**	1	2	1	0	0
27	**Genital infections**	6	6	6	0	1
28	**Infertility**	5	5	5	0	0
29	**Uterine fibroids**	1	1	1	0	1
30	**PCOS and hirsutism**	2	2	2	0	1

31	**Uterine prolapse**	1	1	1	0	1
32	**Menopause**	2	2	1	0	0
33	**Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix**	4	4	2	1	1
34	**Benign and malignant diseases of the uterus and the ovaries**	5	8	3	0	1
35	**Obstetrics &Gynecological skills-I**	17	0	12	17	0
36	**Obstetrics &Gynecological skills - II**	3	0	3	3	0
37	**Obstetrics&Gynecological skills - III**	7	0	7	0	0

List of all Obstetrics andGynecology Competencies with their specific learning objectives, with suggested teaching-learning and assessment methods

	Competencies	**Specific learning objectives**	**Teaching learning methods with hours**	**When T-L will be done**	**Formative assessment**	**Summative assessment**	**Assessment of clinical skills**
Topic: Demographic and Vital Statistics Number of competencies: (03) Number of procedures that require certification : (NIL)							

OG1.1	Define and discuss birth rate, maternal mortality and morbidity	Definition of birth rate Definition of maternal mortality What is maternal mortality ratio and rate, incidence, Causes of maternal mortality Factors affecting maternal mortality – 3 delays Interventions to prevent maternal death Definition of maternal morbidity Explain - acute, chronic, direct, indirect, non-obstetric maternal morbidity	Lecture 1hr Integration with community health	5th term	MCQs/SAQ's at the end of lecture	Essay/SAQ/ viva voce	
OG1.2	"Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and mortality audit	Definition of perinatal mortality Incidence Factors affecting perinatal mortality Causes of perinatal mortality Strategies to reduce perinatal mortality Definition of perinatal morbidity How to audit neonatal morbidity	Lectures 1hr Integration with community health	5th term	MCQs/SAQ's at the end of lecture	Essay/SAQ/ viva voce	
OG1.3	Define and discuss still birth and abortion	Definition of stillborn Incidence, etiology, pathology, symptoms, signs, investigations- still born infant Examination of stillborn infant Complications of IUD Management Definition of abortion Types	Lectures 2hr Tutorials /SGD	5th Term	MCQs/SAQ's at the end of lecture	Essay/SAQ/ viva voce	

		Etiology Pathophysiology, clinical features, investigations, management, differential diagnosis					
Topic: Anatomy of the female reproductive tract (Basic anatomy and embryology) Number of competencies: (02) Number of procedures that require certification : (NIL)							**Y**
OG2.1	Describe and discuss the development and anatomy of the female reproductive tract, relationship to other pelvic organs, applied anatomy as related to Obstetrics and Gynaecology.	Development of external genital organs Development of internal genital organs Development of ovary, differentiation, descent Anatomy of external genitalia Anatomy of Internal genital organs- vagina, uterus, cervix, fallopian tubes, ovary Relationship to other pelvic organs Applied anatomy	Lecture 2hr Integration with Anatomy	5th term	MCQs/SAQ / Viva voce	Short essay/viva voce	
OG2.2	Define, classify and discuss the investigations and management of mullerian anomaly	classificaton of Mullerian anomaly, Investigation & management	Lecture 1hr	5th term	MCQs/SAQ / Viva voce	Short essay/viva voce	
Topic: Physiology of conception Number of competencies: (01) Number of procedures that require certification : (NIL)							

OG3.1	Describe the physiology of ovulation, menstruation, fertilization, implantation and gametogenesis.	Gametogenesis – spermatogenesis, oogenesis Formation and maturation of ovarian follicles, structure of ovum Ovulation- mechanism, causes, timing,effects Fertilization- process, post fertilization events, implantation	Lecture 2hrs	5th term	MCQs/SAQ	MCQs/SAQ	
Topic: Development of the fetus and the placenta Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG4.1	Describe and discuss the basic embryology of fetus, factors influencing fetal growth and development, anatomy and physiology of placenta, and teratogenesis	Embryology – formation of 3 germ layers, amnion and chorion, placenta Phases of conceptus development Timing of appearance of different organ systems Placenta- development, gross anatomy, structure, placental circulation, functions of placenta Teratogenesis, teratogens	Lecture 1hr	6th term	MCQs/SAQ	MCQs/SAQ	
Topic: Preconception counselling Number of competencies:(02) Number of procedures that require certification : (NIL)							
OG5.1	Describe, discuss and identify pre-existing medical disorders and discuss their management; discuss evidence-based	Pre existing medical disorders- anemia, cardiac disease, DM, chronic hypertension, bronchial asthma, seizure disorders, thyroid disorders, chronic kidney disease, Antenatal care and preconception counseling Objectives, history and examination, assessment of period of gestation, investigations, nutrition,	Lectures 1hr Tutorials 1hr Bedside clinics, Small group discussion	6th term	MCQ/SAQ	MCQ/SAQ	

	intrapartum care						
OG5.2	Determine maternal high risk factors and verify immunization status	screening for high risk factors, elderly primigravida: complications during pregnancy and labour, maternal and fetal mortality, management bad obstetric history obesity: physiological changes, management grand multipara: complications, mortality, management maternal immunization status for - Tetanus - hepatitis B - whooping cough - influenza vaccines contraindicated in pregnancy immunization in special circumstances: rabies, yellow fever, hepatitis A,	Lectures 1hr Bedside clinic, small group discussion	6th term	MCQ/SAQ	MCQ/SAQ	
Topic: Diagnosis of pregnancy Number of competencies:(01) Number of procedures that require certification : (NIL)							

OG6.1	Describe, discuss and demonstrate the clinical features of pregnancy, derive and discuss its differential diagnosis, elaborate the principles underlying and interpret pregnancy tests.	Discuss the clinical features of early pregnancy Tests to confirm pregnancy -immunologial test, Urine Pregancy test. Discuss the role of ultra sound in dignosing Pregnancy	Lectures 1hr Bedside clinic, small group discussion OPDs	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Maternal Changes in pregnancy Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG7.1	Describe and discuss the changes in the genital tract, cardiovascular system, respiratory, haematology, renal and gastrointestinal system in pregnancy	Hematology-blood volume, plasma volume, RBC &hemoglobin, blood coagulation factors CVS-anatomical changes, cardiac output, BP, venous pressure RS-respiratory rate, tidal volume, total lung capacity Renal-changes in kidney, ureter, bladder Gastrointestinal changes Genital tract-changes in body of uterus, isthmus, cervix	Lectures 1hr Bedside clinic, small group discussion	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Antenatal Care Number of competencies: (08) Number of procedures that require certification : (NIL)							
OG8.1	Enumerate, describe and	Procedure at 1st visit Procedure at subsequent visits	Bedside clinic, small	6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	discuss the objectives of antenatal care, assessment of period of gestation; screening for high-risk factors.	Routine Antenatal screening Antenatal hygiene Immunization Pre conceptional counselling & care Period of gestation based on pts statement, previous records, objective signs & investigations	group discussion OPDs				
OG8.2	Elicit document and present an obstetric history including menstrual history, last menstrual period, previous obstetric history, comorbid conditions, past medical history and surgical history	Menstrual history in detail Naegeles rule Importance of Past history Importance of Surgical history	Bedside clinic, small group discussion OPDs	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG8.3	Describe, demonstrate, document and perform an obstetrical examination including a general and	Antepartum fetal surveillance - clinical - biochemical - biophysical Evaluation of fetal wellbeing Maternal weight gain Assessment of height of fundus General physical examination	Lectures 1hr Bedside clinic, small group discussion OPDs	3rd 4th& 6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	abdominal examination (and clinical monitoring of maternal and fetal well-being;)	Per abdomen -inspection, palpation, auscultation Symphysio fundal height,abdominal girth					
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well-being	Non stress test Biophysical profile DFMC CTG Maternal condition assessment -vital parameters -investigations - Antenatal fetalsurveilance	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG8.5	Describe and demonstrate pelvic assessment in a model	Bones of pelvis, anatomical measurements of diameters assessment at brim At midcavity At outlet Plane of least pelvic diameter	Bedside clinic, small group discussion, DOAP,Labour room posting	3rd 4th 6th 8th& 9th terms	Skill Assessment	Skill Assessment	End of posting
OG8.6	Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy	BMI calorie requirement in pregnancy & lactation Protein requirement Folic acid requirement Vit b12 requirement Iron requirement Supplementary nutritional therapy Develop checklist for role play for nutrition in pregnancy	Lectures 1hr Bedside clinic, small group discussion, Role play OPD	3rd term	MCQs/SAQs	MCQs/SAQs	End of posting

OG8.7	Enumerate the indications for and types of vaccination in pregnancy	Contraindicated vaccines in pregnancy Safe vaccines in pregnancy Tetanus toxoid-dose, route Current guideline for antenatal vaccination including T-dap Timing of vaccination	Lectures 1hr Bedside clinic, small group discussion OPD	3rd term	MCQs/SAQs	MCQs/SAQs	End of posting
OG8.8	Enumerate the indications and describe the investigations including the use of ultrasound in the initial assessment and monitoring in pregnancy	Indication of 1st trimester USG Indication of 2nd trimester USG Indication of 3rd trimester USG USG markers of fetal anomalies Gestational age assessment on USG Doppler studies Routine antenatal blood and urine investigation Screening test for aneuploidy, preeclampsia and GDM Describe trimester wise blood test and ultrasound assessment	Lectures 1hr Bedside clinic, small group discussion	3rd term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Complications in early pregnancy Number of competencies: (05) Number of procedures that require certification: (NIL)							
OG9.1	Classify, define and discuses the aetiology and management of abortions including threatened, incomplete, inevitable, missed and septic	Definition Etiology Classification Definition, clinical features, investigations and management of threatened, inevitable, missed, complete and incomplete abortion Septic abortion definition Clinical Features Management Prevention	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG9.2	Describe the	Enumerate the steps of suction evacuation	Tutorials	6th&	MCQs/SAQ	MCQs/SAQs	End of

	steps and observe/ assist in the performance of an MTP evacuation	Enumerate steps of dilatation and evacuation Enumerate steps of menstrual regulation	1hr Bedside clinic, small group discussion opd / ward/ minor OT	7th term	s		posting
OG9.3	Discuss the aetiology, clinical features, differential diagnosis of acute abdomen in early pregnancy (with a focus on ectopic pregnancy) and enumerate the principles of medical and surgical management	Differential diagnosis of acute abdomen in early pregnancy- obstetric, gynecological, medical and surgical causes Etiology of ectopic pregnancy Classification of ectopic pregnancy Clinical features of acute and chronic ectopic Diagnosis Management options Medical management Surgical management	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG9.4	Discuss the clinical features, laboratory investigations, ultrasonography, differential diagnosis,	Definition of Molar pregnancy Classification Etiopathology Clinical features Investigations- blood and ultrasonography Differential diagnosis Complications- immediate and late	Lectures 1hr Tutorials 1hr Bedside clinic, small group	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	principles of management and follow up of gestational trophoblastic neoplasms	Management- medical and surgical Follow up- history, examination, investigations, and contraceptive advice.	discussion OPD				
OG9.5	Describe the etiopathology, impact on maternal and fetal health and principles of management of hyperemesis gravidarum	Definition of hyperemesis gravidarum Etiopathology Clinical features- symptoms and signs Investigations Complications to mother and fetus Management- hospitalization, fluids, drugs, diet, nutritional supplementation	Lectures 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Antepartum haemorrhage **Number of competencies: (02) Number of competencies that require certification: (NIL)**							
OG10.1	Define, classify and describe the aetiology, pathogenesis, clinical features, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy	Classification and differential diagnosis Placenta previa definition Etiology and types Clinical features Complications Management- investigations, expectant vs definitive management Definition of abruption placenta Etiology and types Clinical features and grades Management	Lectures 2hr Tutorials 2hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG10.	Enumerate the	Enumerate different types of blood components	Lectures	8th	MCQs/SAQ	MCQs/SAQs	

2	indications and describe the appropriate use of blood and blood products, their complications and management.	Characteristic features and storage Indications for transfusion Massive transfusion protocol Complications and their management Discuss importance of consent form	1hr Bedside clinic, small group discussion	term	s		
Topic: Multiple pregnancies Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG11.1	Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies	Etiopathology and types Diagnosis- History, symptoms, general and abdominal examination Investigations Maternal changes Complications to mother and fetus Management- antenatal, 1st and 2nd stage of labour, including delivery of 2nd twin, third stage, puerperium	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Medical Disorders in pregnancy Number of competencies: (08) Number of procedures that require certification : (NIL)							
OG12.1	Define, classify and describe the etiology and pathophysiology , early detection, investigations; principles of management of hypertensive	Classification of hypertensive disorders, definition of pre-eclampsia and eclampsia Diagnostic criteria Etiopathogenesis Clinical features of pre-eclampsia and eclampsia- symptoms and signs Specific investigations Maternal and fetal complications antenatal management- supportive, fluid management,	Lectures 3hr Tutorials 2hr Bedside clinic, small group discussion OPD	8th term	MCQs/SAQs	MCQs/SAQs	End of posting

	disorders of pregnancy and eclampsia, complications of eclampsia.	antibiotics, anti-hypertensives, anti-convulsants Monitoring and surveillance Management during labour					
OG12.2	Define, classify and describe the etiology, pathophysiology ,diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of anemia in pregnancy	Definition Classification Etiology of nutritional anemia Clinical features of nutritional anemia Physiological changes and effects of anemia on pregnancy and fetus Investigations of nutritional anemia Complications during pregnancy, labour and puerperium Prevention of nutritional anemia Management of nutritional anemia- diet, oral and parenteral iron, blood transfusion Discuss classification, etiology, clinical features, investigations, complications and management of non nutritionalanemia	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG12.3	Define, classify and describe the etiology, pathophysiology ,diagnosis, investigations, criteria, adverse effects on the	definition of gestational diabetes mellitus classification of diabetes mellitus in pregnancy Enumerate etiological factors Discuss pathophysiology of diabetes mellitus in pregnancy investigations for diabetes mellitus in pregnancy Screening test for gestational diabetes mellitus Describe the effects of diabetes on pregnancy	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	mother and foetus and the management during pregnancy and labor, and complications of diabetes in pregnancy	complications of diabetes mellitus in pregnancy Discuss the management of diabetes in antenatal period , in labour, postnatal					
OG12.4	Define, classify and describe the etiology, pathophysiology ,diagnosis, investigations, criteria, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy	classification of heart disease in pregnancy Discuss etiology Describe pathophysiology of heart disease in pregnancy Discuss clinical features of heart disease in pregnancy Describe antenatal investigations diagnosis Discuss the effects of heart disease on pregnancy Discuss the effects of pregnancy on heart disease management during pregnancy, during labour, in postnatal Complications, preconceptionalcouncelling	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG12.5	Describe the clinical features, detection, effect of pregnancy on	etiology of UTI in pregnancy pathophysiology in pregnancy symptoms signs	Lectures 1hr Bedside clinic, small	7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	the disease and impact of the disease on pregnancy complications and management of urinary tract infections in pregnancy	investigations complications management Asymptomatic bacteriuria	group discussion OPD				
OG12.6	Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of liver disease in pregnancy	Discuss classification of liver disease in pregnancy etiology pathophysiology Describe clinical features of liver disease in pregnancy List the investigations of liver disease in pregnancy Discuss the differential diagnosis of liver disease in pregnancy List the maternal complications management of liver disease in pregnancy	Lectures 1hr Bedside clinic, small group discussion OPD	7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG12.7	Describe and discuss screening, risk factors, management of mother and newborn with	introduction of HIV and incidence routes of transmission immunopathogenesis clinical presentation diagnosis management prenatal care, antenatal care, intrapartum care, postnatal care	Lectures 1hr Bedside clinic, small group discussion	7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	HIV	Pre-test and post test counselling PPTCT program TORCH infection in pregnancy					
OG12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of isoimmunization in pregnancy	Definition of Rh- isoimmunisation Mechanism of antibody formation in the mother Prevention of Rh-isoimmunisation Haemolytic disease of the fetus and newborn Antenatal investigations protocol of Rh-negative mother Plan of delivery in unimmunised and immunised mother Prognosis of Rh-isoimmunisation	Lectures 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Labour- Number of competencies: (05) Number of procedures that require certification : (01)							
OG13.1	Enumerate and discuss the physiology of normal labor, mechanism of labor in occipito-anterior presentation; monitoring of labor including partogram; conduct of labor, pain relief; principles of induction and acceleration of labor;	physiology of normal labour mechanism of normal labour monitoring of labour by partogram steps of delivery labour analgesia induction of labour by natural, medical, surgical, combined acceleration of labour management of 3rd stage of labour	Lectures 3hr Tutorials 1hr Bedside clinic, small group discussion, evening labour room posting	3rd& 4th term	MCQs/SAQs	MCQs/SAQs	End of posting

	management of third stage of labor.						
OG13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy	definition for preterm labour, PROM &post dated pregnancy etiology pathophysiology symptoms signs investigations diagnosis complications management	Lectures 2hr Tutorials 1hr Bedside clinic, small group discussion	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG13.3	Observe/ assist in the performance of an artificial rupture of membranes	indications for ARM Enumerate the technique of procedure limitations contraindications complications	Bedside clinic, small group discussion, evening labour room posting	8th& 9th term			Skill Assessment
OG13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin (and counsel on methods of safe	physiology and mechanism and events of stage 1,2 and 3 of normal labour defination of abortion types of abortion indications of induced abortion medical and surgical methods MTP act complications of abortion	Bedside clinic, small group discussion, skill lab DOAP	8thterm			Skill Assessment

	abortion).						
OG13.5	Observe and assist the conduct of a normal vaginal delivery	Monitoring of mother and fetus in second stage of labor General management- sterile precautions Position for delivery procedures Oxytocics and analgesia in labor Management of third stage of labor Examination of placenta Fourth stage of labor	Bedside clinic, Evening labour room posting DOAP	8th& 9th term			Skill Assessment
Topic: Abnormal Lie and Presentation; Maternal Pelvis Number of competencies: (04) Number of procedures that need certification : (NIL)							
OG14.1	Enumerate and discuss the diameters of maternal pelvis and types	Bones of female pelvis Diameters and planes of obstetric pelvis Clinical significance of each type of pelvis False and true pelvis Caldwell and moloy classification of pelvis.	Bedside clinic, DOAP	6th 8th& 9th term	MCQs/SAQs	MCQs/SAQs	End of posting Skill Assessment
OG14.2	Discuss the mechanism of normal labor, Define and describe obstructed labor, its clinical features; prevention; and management	normal labor- definition Describe cardinal movements involved in labor Explain synclitism/asynclitism Definition of obstructed labor causes Clinical feautures diagnosis Prevention Management Complications of obstructed labor	Lectures 1hr Bedside clinic, small group discussion, Evening labour room posting	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG14.3	Describe and discuss rupture uterus, causes, diagnosis and management.	incidence of Rupture Uterus causes pathology Clinical feautures diagnosis	Lectures 1hr Bedside clinic, small group	8th term	MCQs/SAQs	MCQs/SAQs	End of posting

		complications Management- general and definitive	discussion, Evening labour room posting				
OG14.4	Describe and discuss the classification; diagnosis; management of abnormal labor	Definition Classification of abnormal uterine action Describe pathological retraction ring and management Management of abnormal labor Dystocia dystrophia syndrome	Lectures 1hr Bedside clinic, small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG14.5	Describe and discuss causes, dagnosis and management of breech presentation, occipito posterior, transverse lie, face presentation	Breech – Etiological features Clinical Examination Management of Antenatal intrapartum Compications - Maternal Fetal OP- Etiology Features Clinical Examination Mechanism of labour in OP , Course of labour Definition of deep transverse arrest and its management Define & discuss the management of transverse	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion , evening labour room posting	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Operative obstetrics Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG15.1	Enumerate and describe the indications and steps of common obstetric	Episiotomy- definition, types, timing of episiotomy, structures incised , repair, complications vacuum extraction- design, indications, contraindications, procedure, complications low forceps- description of forceps, indications, contraindications, procedure, complications	Tutorials 2hrs Bedside clinic, Small group discussion,	8th& 9th term	MCQs/SAQs Skill Assessment	MCQs/SAQs Skill Assessment	End of posting

	procedures, technique and complications: Episiotomy, vacuum extraction; low forceps; Caesarean section, assisted breech delivery; external cephalic version; cervical cerclage	caesarean section- types , indications, procedure, complications. What is caesarean hysterectomy assisted breech delivery- principles , steps, indications, delivery of after coming head, complications external cephalic version- pre requisites, indications, contraindications, procedure, complications cervical cerclage – types, indications, procedure, complications	observation in OT, evening labour room posting				
OG15.2	Observe and assist in the performance of an episiotomy and demonstrate the correct suturing technique of an episiotomy in a simulated environment. Observe/Assist in operative obstetrics cases – including - CS, Forceps, vacuum extraction, and	episiotomy- suturing technique breech delivery	Bedside clinic, Small group discussion , observation in OT, DOAP Skill lab		MCQs/SAQs	MCQs/SAQs	Skill Assessment

	breech delivery						
Topic: Complications of the third stage of labor- Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG16.1	Enumerate and discuss causes, prevention, diagnosis, management, of blood and blood products in appropriate use postpartum haemorrhage	Definition – primary and secondary PPH Aetiology incidence diagnosis Degree of shock in PPH Prevention Management- medical, appropriate use of blood and blood products Uterine compression sutures Step wise devascularisation	Lectures 1hr Tutorials 1hr Bedside clinic, Small group discussion,evening labour room posting	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG16.2	Describe and discuss uterine inversion – causes, prevention, diagnosis and management.	uterine inversion- INCIDENCE TYPES degree aetiology Clinical features diagnosis Complications D/D,prevention,prognosis management	Lectures 1hr Tutorials 1hr Bedside clinic, Small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	
OG16.3	Describe and discuss causes, clinical features, diagnosis, investigations; monitoring of fetal well-being,	intrauterine growth restriction – definition Pathophysiology of FGR TYPES OF FGR aetiology diagnosis Management- antepartum, intrapartum and neonatal	Lectures 1hr Tutorials 1hr Bedside clinic	8th term	MCQs/SAQs	MCQs/SAQs	Case presentation, End of posting

	including ultrasound and fetal Doppler; principles of management; prevention and counselling in intrauterine growth retardation						
OG16.4	Describe and discuss macrosomia, causes, diagnosis, intra partum complications, management	Definition of Macrosomia Causes clinical &sonological findings to diagnose & management shoulder dystocia - Causes Intrapartum Management maternal & neonatal complicaitons	Lectures 1hr Bedside clinic,evening labour room posting Skill lab		MCQs/SAQs	MCQs/SAQs	Case presentation, End of posting
Topic: Lactation Number of competencies: (03) Number of procedures that require certification : (NIL)							
OG17.1	Describe and discuss the physiology of lactation	Anatomy of breast Phases of lactation Prolactin reflex Milk let down reflex Lactation inhibition and suppression	Lecture 1hr, Small group discussion 1hr	5th term	MCQs/SAQs	MCQs/SAQs	
OG17.2	Counsel in a simulated environment, care of the breast, importance and	Care of breast Initiation of breast feeding Exclusive breast feeding Technique of breastfeeding-different position and attachment Frequency of breastfeeding	Lecture 1hr, Small group discussion 1hr	8th& 9th term			

	the technique of breast feeding	Adequacy of breastfeeding Expression of breast milk					
OG17.3	Describe and discuss the clinical features, diagnosis and management of mastitis and breast abscess	Clinical presentation in mastitis Diagnosis of mastitis Complication of mastitis Treatment and prevention of mastitis Breast abscess – definition, clinical presentation, diagnosis, investigation, treatment	Lecture 1hr, Small group discussion 1hr	8th& 9th term	MCQs/SAQs	MCQs/SAQs	
Topic: Care of the new born Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG18.1	Describe and discuss the assessment of maturity of the newborn, diagnosis of birth asphyxia, principles of resuscitation, common problems.	Examination of new born Assessment of gestation age – by sole creases , breast nodule, scalp hair, ear lobe, testes and scrotum Birth asphyxia – definition, etiology, diagnosis, clinical features, management Equipments for resuscitation principles of resuscitation Common problem in resuscitation	Lectures 1hr Bedside clinic, Small group discussion DOAP, Evening labour room posting Skill Lab	3rd& 4th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment	New born resuscitation algorithm Initial steps Positive pressure ventilation Endotracheal intubation, chest compression medication	Bedside clinic, DOAP, Evening labour room posting Skill Lab	6th term			Skill Assesment

OG18.3	Describe and discuss the diagnosis of birth asphyxia	definition birth asphyxia etiopathogenesis Clinical features and diagnosis management	Lectures 1hr Bedside clinic, small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG18.4	Describe the principles of resuscitation of the newborn and enumerate the common problems encountered	Principles of resuscitation Steps of resuscitation Resuscitation principle in baby whose apneic despite tactile stimulation Resuscitation when baby is apneic and HR less than 100	Bedside clinic, Small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Normal and abnormal puerperium. Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG19.1	Describe and discuss the physiology of puerperium, its complications, diagnosis and management; counselling for contraception, puerperal sterilization	definition of Purperium Physiological changes includes uterine changes Define lochia & types general physiological changes Puerperal sepsis – definition , causes, pathogenesis , clinical features, diagnosis, management Subinvolution , urinary problems Thromboembolic disorders – DVT, thrombophlebitis, pulmonary embolism Obstetric palsies , puerperal psychiatric disorders	Lectures 2hrs Tutorials 1hr Bedside clinic, Small group discussion	6th& 8th term	MCQs/SAQs	MCQs/SAQs	Post natal case presentation during clinics, End of posting
OG19.2	Counsel in a simulated environment,	Methods of contraception Puerperal sterilization - a. informed consent and pre-	Tutorials 1hr Bedside	8th& 9th term			Skill Assessment

	contraception and puerperal sterilisation	requisites b. timing c. methods d. technique e. steps f. complication Develop a checklist for role paly including above mention SLO	clinic, DOAP, Role play				
OG19.3	Observe/ assist in the performance of tubal ligation	Pre –operative preparation Type of anaesthesia Types of incision Procedure Advantages Drawbacks	DOAP & Intra operative, skill lab	8th& 9th term			Skill Assessment
OG19.4	Enumerate the indications for, describe the steps in and insert and remove an intrauterine device in a simulated environment	Indications for cu-t insertions –WHO eligibility criteria Timing of insertion Technique of insertion – no touch insertion	Skill lab & OPD	8th& 9th term	MCQs/SAQs	MCQs/SAQs	Skill Assessment
Topic: Medical termination of pregnancy Number of competencies: (03) Number of procedures that require certification : (NIL)							
OG20.1	Enumerate the indications and describe and discuss the legal	Induction of Abortion- Definition MEDICAL TERMINATION OF PREGNANCY Act Indications for termination Recommendations (new changes)	Lectures 2hr Bedside clinic, Small	3rd term	MCQs/SAQs	MCQs/SAQs	

	aspects, indications, methods for first and second trimester MTP; complications and management of complications of Medical Termination of Pregnancy	First trimester (Upto 12 weeks) -Medical & Surgical Second Trimester (13-24 weeks) Medical & Surgical Complications of MTP- Immediate & Remote Management of Complications	group discussion				
OG20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy	Introduces oneself and verifies the patients identity and age. Explains that if minor or lunatic then parents or legal guardian consent is required Calculates the gestational age Provides information regarding the options available or the need for opinion of two medical practitioners Provides information regarding the failure rates, immediate and remote complications of the chosen procedures Explains that only the patients written consent is required and not the husbands Explains that it is a confidential procedure and has to be reported to the DHS in the prescribed form Develop a checklist for role play inluding above mentioned SLO	Tutorials 1hr DOAP, Role play	8th& 9th term			Viva voce
OG20.3	Discuss Pre-conception and Pre Natal	Definition of the PC & PNDT act Prenatal diagnostic procedures under the act Prenatal diagnostic Tests covered by the act	Lectures 1hr Bedside	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce

	Diagnostic Techniques (PC& PNDT) Act 1994 & its amendments	Qualified Personnel and Registration (of The place where US is performed) Offences and penalties	clinic, Small group discussion				
Topic: Contraception Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG21.1	Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including Ocs, male contraception, emergency contraception and IUCD	Methods of contraception MEC criteria pearl Index Permanent – Male and Female contraceptive method Temporary Natural- Calendar, temperature, withdrawal, lactational (FAM) Barrier- Physical-male and female condoms, diaphragms ; Chemical - creams jelly and foam IUCD- types, mode of action, contraindications, complications, other uses Steroidal Contraception-oral, parenteral, devices COC- types, Mechanism of action, contraindications and non-contraceptive uses, follow up, Missed pill management Implants injectables and Emergency contraception Male contraception What is PPIUCD	Lectures 5hrs Tutorials 4hrs Bedside clinic, Small group discussion Skill lab 1	8th& 9th term	MCQs/SAQs	MCQs/SAQs	Skill Assessment, End of posting Viva voce
OG21.2	Describe & discuss PPIUCD programme	Mode of insertion of PPIUCD Benefits Drawbacks Government Family Planning programs	Lectures 1hr Bedside clinic, Small group	8th& 9th term	MCQs/SAQs	MCQs/SAQs	Viva voce

			discussion				
Topic: Vaginal discharge Number of competencies: (02) Number of procedures that require certification :(NIL)							
OG22.1	Describe the clinical characteristics of physiological vaginal discharge	Characteristics of normal vaginal discharge Leucorrhea Physiological excess Cervical causes Vaginal causes Enumerate the causes of physiological vaginal discharge	Lectures 1hr Bedside clinic ,Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG22.2	Describe and discuss the etiology (with special emphasis on Candida, T. vaginalis, bacterial vaginosis), characteristics, clinical diagnosis, investigations, genital hygiene, management of common causes and the syndromic management	Defense of the genital tract Candida- Clinical features, complications, diagnosis, treatment T. vaginalis- Clinical features, complications, diagnosis, treatment Bacterial Vaginosis- Clinical features, complications, diagnosis, treatment Gonorrhea - Clinical features, complications, diagnosis, treatment Syphilis- Clinical features, complications, diagnosis, treatment Chlamydial infections- Clinical features, complications, diagnosis, treatment Chancroid, LGV, Granuloma Inguinale- cause, Clinical features, complications, diagnosis, treatment Herpes Genitalis- Clinical features, complications, diagnosis, treatment Syndromic Approach & kits available	Lectures 1hr Bedside clinic ,Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Normal and abnormal puberty Number of competencies: (03) Number of procedures that require certification : (NIL)							
OG23.1	Describe and discuss the	Puberty Definition and Morphological Changes Endocrinology of Puberty	Lectures 1hr	6th& 7th	MCQs/SAQs	MCQs/SAQs	

	physiology of puberty, features of abnormal puberty, common problems and their management	Precocious Puberty Definition, types, etiopathogenesis, diagnosis, treatment, prognosis, Delayed Puberty- Definition, types, etiopathogenesis, diagnosis, treatment, prognosis Puberty Menorrhagia - etiopathogenesis, diagnosis treatment	Bedside clinic ,Small group discussion, OPD	term			
OG23.2	Enumerate the causes of delayed puberty. Describe the investigation and management of common causes	HypergonadotrophicHypogonadism- Ovarian Failure, gonadal dysgenesis Hypogonadotrophichypogonadism-primary, kallmann, tumors Eugonadism- Anatomical ; AIS	Lectures 1hr	6th& 7th term	MCQs/SAQs	MCQs/SAQs	
OG23.3	Enumerate the causes of precocious puberty	GnRH dependent- constitutional, intracranial lesions, juvenile primary hypothyroidism; incomplete GnRH independent – Ovarian; adrenal; Liver; iatrogenic	Lectures 1hr	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Abnormal uterine bleeding Number of competencies: (02) Number of procedures that require certification: (NIL)							
OG24.1	Discuss common disorders associated with menstruation like irregular cycle, HMB, intermenstrual bleeding,	Definition of dysmenorrhea clinical Features Types of dismenorrhea& management of dismenorrhea Pre menstrual syndrome Etiology Clinical Features management	Lectures 1hr Bedside clinic ,Small group discussion, OPD	6th term			

	dismenorrhea, PMS, ovulatory pain						
OG24.2	Define, classify and discuss abnormal uterine bleeding, its management	Old terminology- Menorrhagia; Polymenorrhea; Metrorrhagia; Oligomenorrhea; Hypomenorrhea; DUB Oligomenorrhea; Hypomenorrhea; DUB FIGO PALM-COEIN classification Causes and its clinical features Investigations Management	Lectures 1hr Tutorials 1hr Bedside clinic	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Amenorrhea Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG25.1	Describe and discuss the causes of primary and secondary amenorrhea, its investigation and the principles of management.	definition of primary and secondary amenorrhea clinical types of amenorrhea physiological amenorrhea pathological amenorrhea causes of primary and secondary amenorrhea history, clinical examination, when to start investigating investigations panel differential diagnosis of primary and secondary amenorrhea	Lectures 1hr Tutorials 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG25.2	Describe and discuss sexual development and disorders of sexual development	Sexual Development Classification of intersex Disorder Turners Syndrome Klinefilters syndrome	Lectures 1hr OPD	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Genital injuries and fistulae Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG26.1	Describe and discuss the	ENDOMETRIOSIS - definition	Lectures 2hr	8th term	MCQs/SAQs	MCQs/SAQs	Case presentation,

	etiopathogenesis, clinical features; investigation and implications on health and fertility and management of endometriosis and adenomyosis	- prevalence and sites - pathogenesis (theories) - pathology - naked eye and microscopic appearance - ovarian endometrioma - Symptoms and signs - investigations - differential diagnosis - complications - management - expectant /medical / surgical /combined ADENOMYOSIS - definition - causes - pathogenesis - symptoms and signs - investigations - differential diagnosis - management - complications	Tutorials 1hr Bedside clinic, Small group discussion, OPD				End of posting
Topic: Genital infections Number of competencies: (06) Number of procedures that require certification : (NIL)							
OG27.1	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations,	Disscussetiopathogenesis of each STD Describe the clinical features Discuss differential diagnosis of STD Discuss investigations and management of STD Syndromic Approach Discuss long term implications of STD	Lectures 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	management and long term implications of sexually transmitted infections						
OG27.2	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of genital tuberculosis	Describe aetiopathogenesis of genital TB Describe the clinical features Discuss differential diagnosis of genital TB Discuss investigations and management of genital TB Discuss long term implications of genital TB	Lectures 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG27.3	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of	Describe etiopathogenesis of HIV Describe the clinical features of HIV in Gynaecology Discuss differential diagnosis of HIV Discuss investigations and management of HIV Discuss long term implications of HIV	Lectures 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	HIV						
OG27.4	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease	Define PID Describe etiopathogenesis of PID Describe the clinical features of PID Discuss differential diagnosis of acute PID Discuss investigations and management of PID Discuss long term implications of PID	Lectures 1hr Tutorials 1hr Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation
OG27.5	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management of low back ache and chronic pelvic pain	Describe aetiology, clinical features, management of chronic PID Definition of chronic pelvic pain Difference between cyclic and acyclic pelvic pain Non gynaecological causes of pelvic pain Enumerate Different causes of pelvic pain (gynaecological) What is pelvic congestion syndrome and its management What is Cornett sign What is pessary test What is role of laparoscopy in diagnosis of chronic pelvic pain What is LUNA	Lectures 1hr Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG27.	Discuss clinical	What is residual (trapped) ovarian syndrome	Lectures	6th	MCQs/SAQ	MCQs/SAQs	

6	features, differential disgnosis, pathogens and management of Bertholin's abscess	causative organisms pathology fate of infection of bartholin gland clinical features local examination findings treatment recurrenybartholinitis	1hr Small group discussion, OPD	term	s		
Topic: Infertility Number of competencies:(05) Number of procedures that require certification : (NIL)							
OG28.1	Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of infertility – methods of tubal patency, ovulation induction, assisted reproductive techniques	Definition of infertility Enumerate the causes and pathogenesis Clinical features Evaluation of infertile couple, Discuss the principles of management of infertility	Lectures 1hr Tutorials 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
OG28.2	Enumerate the assessment and restoration of tubal patency	Causes for tubal factor in infertility Discuss the investigations to asses tubal patency Enumerate the methods to restore tubal patency	Lectures 1hr Tutorials 1hr	8th term	MCQs/SAQs	MCQs/SAQs	

			Small group discussion, OPD				
OG28.3	Describe the principles of ovulation induction	Discuss ovarian factor leading to infertility Enumerate the investigations for ovarian factor in infertility Discuss the principles and different methods available for ovulation induction	Lectures 1hr Tutorials 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
OG28.4	Enumerate the various Assisted Reproduction Techniques	Define ART Counselling for ART	Lectures 1hr Tutorials 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
OG28.5	Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of	Male Infertility : Discuss Aetiology - Genetic Disorders of Speramatogenesis Disorders of Speram Anatomical defect Sexual dysfunction & explain History to be elicitated	Lectures 1hr Tutorials 1hr Small group discussion, OPD		MCQs/SAQs	MCQs/SAQs	

	male infertility	- To find the probalb causes Investigation - WHO guidness for semen analysis - Testicular biopsy - Immunological test -Chromosomal assay Enumerate ART methods					
Topic: Uterine fibroids Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG29. 1	Describe and discuss the etiology; pathology; clinical features; differential diagnosis; investigations; principles of management, complications of fibroid uterus	Incidence and pathogenesis Risk factors Figo classification of types of fibroid Histological features of fibroid Clinical features Examination Investigations Differential diagnosis Management Asymptotic fibroids: Medical management : Indications Side effects Surgical management : Principles of myomectomy prerequisites Indications Contraindications Endoscopic procedures: Hysteroscopy Laproscopy Uterine artery embolization	Lectures 1hr Tutorials 1hr Small group discussion, OPD, Intra operative	8th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation

		New methods:MRfgus Abdominal hysterectomy					
Topic: PCOS and hirsutism Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG30.1	Describe and discuss the etiopathogenesis; clinical features; differential diagnosis; investigations; management, complications of PCOS	discuss the etiopathogenesis of PCOS Discuss clinical features of PCOS investigations , Diagnostic creteria , Differential diagnosis Treatment Long term complications	Lectures 1hr Tutorials 1hr Small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation
OG30.2	Enumerate the causes and describe the investigations and management of hyperandrogenism	Definition of hirsutism Ovarian causes: Adrenal causes: Others: Clinical features investigations management	Lectures 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
Topic: Uterine prolapse Number of competencies: (01) Number of procedures that require certification :(NIL)							
OG31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations,	Definition of pelvic organ prolapsed Supports of uterus Pathophysiology and causes of prolapse Classification of pelvic organ prolapse Symptoms of prolapse Clinical evaluation including history and examination Differential diagnosis of mass per vaginum	Lectures 1hr Tutorials 1hr Small group discussion ,	8th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation

	principles of management and preventive aspects of prolapse of uterus	investigations Factors determining the choice of treatment in pelvic organ prolapse Management of prolapse: pessary treatment in pelvic organ prolapse preventive aspects of prolapse of uterus	OPD, OT, Bed side clinics				
Topic: Menopause Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG32.1	Describe and discuss the physiology of menopause, symptoms, prevention, management and the role of hormone replacement therapy.	Definition of menopause Physiology of menopause Symptoms and investigations Management and HRT	Lectures 1hr Small group discussion , OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG32.2	Enumerate the causes of postmenopausal bleeding and describe its management	Definition of post menopausal BLEEDING causes investigations management	Lectures 1hr Tutorials 1hr Small group discussion , OPD, minor OT, Bed side clinics	9th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation
Topic: Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix Number of competencies: (04) Number of procedures that require certification : (NIL)							

OG33.1	Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer	Risk factors Clinical features Signs and symptoms Modes of spread investigations Histological types of c a Cervix Staging of Ca cervix-FIGO	Lectures 2hr Tutorials 1hr Small group discussion , OPD	9th term	MCQs/SAQs	MCQs/SAQs	
OG33.2	Describe the principles of management including surgery and radiotherapy of Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix	Benign lesions: Etiopathogenesis Clinical features Symptoms and treatment: preventive and definitive Premalignant lesions of cervix (CIN): Pathogenesis Etiology Symptoms Investigations Treatment od CIN: preventive and definitive Ca cervix: Management of Cervical Cancer according to staging Types of hysterectomy Indications for radiotherapy &Chemotharapy	Lectures 1hr Small group discussion , OPD	9th term	MCQs/SAQs	MCQs/SAQs	
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment	Complications and followup counsel the patient about need for Pap smear Examination take informed consent about the procedure ensure the adequate privacy at examination area keep ready equipment needed for the procedure	Small group discussion, OPD, Skill Lab, DOAP	9th term	MCQs/SAQs	MCQs/SAQs	

		Perform examination under aseptic precaution Document the findings Proper disposal of gloves					
OG33.4	Enumerate the methods to prevent cancer of cervix including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine (VILI), pap smear and colposcopy	Need for screening: Methods: VIA VILI PAP Colposcopy Indications Methods inference	Lectures 1hr Small group discussion, OPD	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce
Topic: Benign and malignant diseases of the uterus and the ovaries Number of competencies: (05) Number of procedures that require certification : (NIL)							
OG34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of	Types of endometrial hyperplasia Incidence, etiology of endometrial cnacer Pathology – gross, microscopic features. Types of endometrial cancer Modes of spread Diagnosis Figo staging Differential diagnosis, investigations Steps of staging laparotomy Chemotherapy and radiotherapy Followup	Lectures 1hr Small group discussion, OPD, intra operative	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation

	endometrial cancer						
OG34.2	Describe and discuss the etiology, pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principal of management including staging laparotomy	Incidence, etiology for ovarian cancer Genetics and ovarian malignancy Pathology Classification of ovarian cancer Modes of spread Clinical features Investigations Diagnosis Figo staging Differential diagnosis Screening Surgical management Chemotherapy Followup Germ cell tumors of ovary Discuss the role of Tumour markers	Lectures 2hr Tutorials 1hr Small group discussion, OPD, intra operative, Bed side clinics	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation
OG34.3	Describe and discuss the etiology, pathology, classification, staging, clinical features, differential diagnosis, investigations and management of	Gestational trophoblastic disease- spectrum WHO based prognostic scoring Incidence Etiology pathology staging Spread, clinical features Investigations, management Surveillance during and after therapy	Lectures 1hr Tutorials 1hr Small group discussion, OPD, Bed side clinics	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation

	gestational trophoblastic disease						
OG34.4	Operative Gynaecology : Understand and describe the technique and complications: Dilatation & Curettage (D&C); EA-ECC; cervical biopsy; abdominal hysterectomy; myomectomy; surgery for ovarian tumours; staging laparotomy; vaginal hysterectomy including pelvic floor repair; Fothergill's operation, Laparoscopy; hysteroscopy; management of postoperative	operative gynaecology: technique and complications Dilatation and curettage: indications, steps, complications Endometrial aspiration – endocervical curettage Cervical biopsy: types, indications, steps, procedures, complications TAH : types, indications, steps, complications Myomectomy : measures to control blood loss during myomectomy, steps, complications Surgery for ovarian tumors Staging laparotomy VH+PFR: steps, complications Fothergill's operation: indications, steps, complications Laparoscopy: advantages, disadvantages, instruments, indications, contraindications, techniques, complications Hysteroscopy: instruments, distending media, anaesthesia, procedures, indications, contraindications, complications	Lectures 2hr Small group discussion, OPD,OT, Minor OT	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation

	complications						
OG34.5	Benign lesions of cervix, ovary	Benign disorders of cervix - cervical erosion - cervical ectropion - cervical polyp Benign disorders of ovary - -Enumerate the conditions of non neoplastic ovarian enlargement - classification of Benign ovarian tumors -complications of Benign ovarian tumors	Lectures 2hr Small group discussion, OPD, Bed side clinics	8th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation
Topic:Obstetrics &Gynecological skills - I Number of competencies: (17) Number of procedures that require certification : (NIL)							
OG35.1	Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (perrectal and per-vaginal)	Obtain a demographic data Chief complaints History of presenting complaints Obstetric and menstrual history Past and family history Treatment history Personal history General physical examination including breast and thyroid, BMI SYSTEMIC EXAMINATION- RS/CVS/CNS ABDOMEN EXAMINATION	Small group discussion, OPD, DOAP	3rd 4th 6th& 8th term			Viva voce End of posting case presetnation
OG35.2	Arrive at a logical provisional diagnosis after examination.	With elicited history and detailed examination arrive at a logical provisional diagnosis	Small group discussion, OPD, DOAP	6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.3	Recognize situations, which	Analysis of clinical situation Identify the risk factors and need for urgent treatment	Small group discussion,	8th& 9th			Viva voce End of

	call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment.	Administer emergency medications Transfer to tertiary care center	OPD, DOAP	term			posting case presetnation
OG35.4	Demonstrate interpersonal and communication skills befitting a physician in order to discuss illness and its outcome with patient and family	Counsel the patient and family members Arrive at a provisional diagnosis Explain the medical condition to family members in a language understood by them Discuss the medical and surgical management, complications, requirement of blood and blood products if needed Explain the prognosis of medical condition	Small group discussion, OPD, DOAP	8th& 9th term			Viva voce End of posting case presetnation
OG35.5	Determine gestational age, EDD and obstetric formula	Address their concerns GA; Menstrual History. Clinical methods Ultrasound examination EDD; Menstrual History Nageles Formula Clinical methods Dating scan No dating scan Then interval Scan	Small group discussion, OPD, DOAP	8th& 9th term			Viva voce End of posting case presetnation

OG35.6	Demonstrate ethical behavior in all aspects of medical practice.	Definition Gravida, Para, Living, Dead and Abortion Autonomy Justice Beneficence	Small group discussion, OPD, DOAP, role play	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.7	Obtain informed consent for any examination / procedure	Non malfeasance For Examination: Informed oral consent For Procedure; informed written consent Signature is must diagnosis of condition name and purpose of procedure benefits, risks, and alternative procedures benefits and risks of each alternative procedures	Small group discussion, OPD, DOAP	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.8	Write a complete case record with all necessary details	Demography Obstetric score with amenorrhea LMP EDD Menstrual history Chief complaint HOPI Present obstetric history, Past obstetric history Past medical and surgical history and personal history General Physical examination with Vitals. Breast and Spine examination Specific Systemic Examination Diagnosis	Small group discussion, DOAP	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.9	Write a proper discharge summary with all relevant information	Contents of discharge summary -name, age, sex, hospital number, address, date of admission &discharge Final diagnosis Name of the operative interventions and intraoperative findings& complications	Small group discussion, DOAP	8th& 9thterm			Viva voce End of posting case presetnation

		Brief history Relevant investigations and Reports Course in the hospital in brief Advice on discharge Warning signs and symptoms relevant to the case to be mentioned Timing of follow up visits					
OG35. 10	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.	Definition of referral letter Patient demographics Registered general Practitioner details Referral Details - Institute - Specialty dept Referring Practitioner details Presenting complaints Past /Family History Assessment and examination Legal information Management to date Reason and urgency for referral	Small group discussion, OPD, DOAP	8th& 9th term			Viva voce End of posting case presetnation
OG35. 11	Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis and counsel patients	Universal Infection Control Precautions Protective Clothing Isolation Facilities Spillage Of Blood And Body Fluids Sterilization And Disinfection Intravenous Procedures Waste Disposal Staff Protection And Immunization	Small group discussion, OPD, DOAP	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.	Obtain a PAP	counsel the patient about need for Pap smear	DOAP	8th&			Viva voce

12	smear in a stimulated environment	Examination ensure the adequate privacy at examination area keep ready equipment needed for the procedure perform examination under aseptic precaution document the findings Proper disposal of gloves	Skill lab	9th term			End of posting case presetnation
OG35. 13	Demonstrate the correct technique to perform artificial rupture of membranes in a simulated / supervised environment	Indications Complications Pelvic examination findings Color of liquor Fetal Heart Assessment Verbal consent	DOAP, Evening labour room posting Skill lab	8th& 9th term			Viva voce End of posting case presetnation
OG35. 14	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment	Define Types Advantages Disadvantages Correct technique Complications – immediate & late	DOAP, Evening labour room posting Skill lab	8th& 9th term			Viva voce End of posting case presetnation
OG35. 15	Demonstrate the correct technique to insert and remove an IUD in a simulated/	Define Types Mechanism of action Advantages Disadvantages Indications and contra indications	Skill lab	8th& 9th term			Viva voce End of posting case presetnation

	supervised environment	Criteria for selection of a client Techniques Uses Complications					
OG35. 16	Diagnose and provide emergency management of antepartum and postpartum hemorrhage in a simulated / guided environment	Symptoms and signs Examination Resuscitation - Airway, breathing, circulation Vitals monitoring Conservative management, medical, balloon tamponade, brace suturing, stepwise devascularization, Emergency hysterectomy.	Small group discussion, drills, Skill lab	8th& 9th term	Skill assessment	Skill assessment	Viva voce End of posting case presetnation
OG35. 17	Demonstrate the correct technique of urinary catheterization in a simulated/ supervised environment	Verbal consent after explaining to the patient Able to recognize and identify external urethral meatus with knowledge of anatomy of urethra Knows importance of aseptic precautions, proper painting and draping of the patient for the procedure Identifies folley's catheter and its parts, urosac Can demonstrate the procedure of catheterization on a manniquin	Skill lab	8th& 9th term	Skill assessment	Skill assessment	Viva voce End of posting case presetnation
Topic: Obstetrics &Gynecological skills - II Number of competencies: (03) Number of procedures that require certification: (NIL)							
OG36. 1	Plan and institute a line of treatment, which is need based, cost effective and appropriate for	History taking to help to arrive at the differential diagnosis Appropriate examination of the patient to elicit signs and narrow the list of differential diagnosis Appropriate investigation to arrive at most probable diagnosis Understanding the specificity and sensitivity of an	Small group discussion, Bed side clinics	8th& 9th term			Viva voce End of posting case presetnation

	common conditions taking into consideration (a) Patient (b) Disease (c) Socio-economic status (d) Institution/ Governmental guidelines.	investigation and its value in arriving at a diagnosis Have idea about cost of investigations so that balance decisions can be taken. Have institutional protocols for common diseases on conditions Understand and cost involved in various treatment options and choses the appropriate treatment based on social economic status					
OG36.2	Organize antenatal, postnatal, well-baby and family welfare clinics	Understands the role of conservative treatment / medical treatment / surgical treatment for various disease conditions Will understand antenatal care and its importance Know the requirements for providing ANC care Will understand the various warning symptoms during antenatal period Knowledge of puerperium Knowledge of assessing the neonatal wellbeing Importance of breast feeding Understand attachment, latching and suckling in breast feeding evaluation Value of organizing postnatal clinics along with paediatrician /neonatologist for comfort and benefit of mother and baby Able to counsel regarding family planning in the postnatal visit	Small group discussion, Bed side clinics	8th& 9th term			Viva voce End of posting case presetnation
OG36.3	Demonstrate the correct	Consent for the procedure Identify the punch biopsy forceps	Small group discussion	8th& 9th			Viva voce End of

	technique of punch biopsy of Cervix in a simulated/ supervised environment	Aseptic precautions, painting and draping for the procedure Visualize the cervix using appropriate instrument Demonstrate the procedure on a maniquin Collect the specimen for histopathological examination	OPD	term			posting case presetnation
Topic: Obstetrics&Gynecological skills - III Number of competencies: (07) Number of procedures that require certification : (NIL)							
OG37.1	Observe and assist in the performance of a Caesarean section	Define caesarean section [CS] Mention the indication for CS Describe preoperative care, investigations, informed consent Appreciate the need to cross match and confirm blood Inform anesthetist, OT staff and neonatologist Observe hand washing, safety check list, instrument counts, type of anesthesia given Enumerate the steps of LSCS List the complications of CS and its management Describe the post-operative care	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG37.2	Observe and assist in the performance of Laparotomy	Appreciate the importance Documentation of all steps, events including new born details Indication for laparotomy Describe the preoperative care and investigations Informed consent, arrange blood and icu bed Lists the steps of laparotomy, need for frozen section. Patient positioning and anesthesia Complications of the procedure Post Operative care	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG37.3	Observe and assist in the performance of	Documentation of all events Indications Assessment for route of surgery	Small group discussion, OT	8th& 9th term			Viva voce End of posting case

	Hysterectomy – abdominal/vaginal	Pre operative preparation Informed consent Anesthesia and patient positioning Steps of Hysterectomy- abdominal/vaginal Complications of the procedure Post Operative care					presetnation
OG37.4	Observe and assist in the performance of Dilatation & Curettage (D&C)	Documentation of all events Indications and contraindications Patient evaluation and pre op preparation Informed consent and anesthesia Steps of procedure Post procedure monitoring Complications of the procedure Documentation of all events	Small group discussion, Minor OT OPD	8th& 9th term			Viva voce End of posting case presetnation
OG37.5	Observe and assist in the performance of Endometrial aspiration - endocervical curettage (EA-ECC)	Discharge advice Know how to take informed consent How to perform per speculum and per vaginal examination Know about instruments used (Pipelle) and aseptic precautions How to take utero cervical length/ cervical length Procedure of EA-ECC Know how to fill the relevant clinical details in HPE /Biopsy form Postop instructions and follow up	Small group discussion, Minor OT OPD	8th& 9th term			Viva voce End of posting case presetnation
OG37.6	Observe and assist in the performance of outlet forceps application	Know how to take informed consent Identify whether there is an appropriate indication for application of outlet forceps/ vacuum/ breech delivery Assess whether all criteria for application of outlet forceps/ vacuum/ breech delivery are met	Small group discussion, Evening labour room	8th& 9th term			Viva voce End of posting case presetnation

	of vacuum and breech delivery	Pre requisites – availability of OT, blood products, Neonatologist, Senior Obstetrician Labour analgesia/ anaesthesia Know how to perform phantom application of outlet forceps/ check equipment of vacuum and choose an appropriate cup/ manouvres for delivery of legs, arms, shoulders and head in assisted breech delivery Perform application of outlet forceps/ vacuum/ breech delivery Know how to give and suture episiotomy and aseptic precautions Identify maternal and neonatal complications Documentation of the procedure	posting				
OG37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion	Counselling the patient regarding the various methods available and complications of each and taking informed consent Look for any contraindications for the method chosen Prescription of first trimester MTP pills Identifying the complications of MTP pills/Incomplete abortion/ Evacuation of retained products Know regarding equipment, instruments and drugs used(Karmans cannula, Suction apparatus) Procedure for Evacuation of retained products in incomplete abortion, under aseptic precautions Check the need for USG and Anti D Know how to fill the relevant clinical details in HPE /Biopsy form Post operative/ post pill instructions and follow up Documentation of the procedure and know which register needs to be filled for intimation to Health	Small group discussion, Minor OT	8th& 9th term			Viva voce End of posting case presetnation

		Department of Government					
Topic: Should observe Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG38.1	Laparoscopy	Indications for laparoscopy Contraindications for laparoscopy Informed consent Anaesthesia under which it is performed and its complications Complications of laparoscopy Postoperative instructions	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG38.2	Hysteroscopy	Definition of Hysteroscopy Steps of Hysteroscopy Indications of Hysteroscopy Diagnostic Hysteroscopy Operative Hysteroscopy Fluid distension Media Post Op care and advice Risks and Complications of Hysteroscopy	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG38.3	Lap sterilization	Sterilization procedure in women Steps of tubal sterilization done laparoscopically Effectiveness of Lap sterilization in prevention of pregnancy Risks associated with Lap tubal sterilization Benefits of Lap tubal sterilization Ideal timing for Lap tubal sterilization Reversal of Lap tubal sterilization procedure	Small group discussion	8th& 9th term			Viva voce End of posting case presetnation
OG38.4	Assess the need for and issue proper medical certificates to patients for	Definition of Medical certificate Medical Certificate certifying illness Medical Certificate certifying fitness Assessing the patient illness and nature of work Responsibility of the issuing doctor	Small group discussion	8th& 9th term			Viva voce End of posting case presetnation

	various purposes	Responsibility of the patient Responsibility of the the third party Certificate Requirements Date of Certificate					

Summary of course content, teaching and learning methods and student assessment for the undergraduate (MBBS) Curriculum

Course content

The course contentbeen 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

	Lectures (hours)	Small group discussion (hours)	Self-directed learning (hours)	Total hours	Clinical postings (weeks)
2nd MBBS	25			25	4weeks First posting in 3-4th terms (15hours/week)
3rd MBBS Part 1	25	35	5	65	4weeks Second posting in 6-7th terms

					(18hours/week)
3rd MBBS Part 2	70	125	15	210	8+4weeks 3rd&4th posting (18hours/week)
Total	120	160	20	300	20weeks (This includes maternity and family welfare and family planning) Two postings of 4 weeks each. and

Time allotted excludes time reserved for internal / University examinations, and vacation.

25% of allotted time (non-clinical time) of third Professional shall be utilized for integrated learning with pre- and para- clinical subjects. This will be included in the assessment of clinical subjects.

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 Obstetrics and Gynecology problems, their management and correlation with function, rehabilitation, and quality of life

Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories. Use of skill lab to train undergraduates in listed skills should be done mandatorily.

The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday)

The clinical postings in the third professional part II shall be 18 hours per week (3 hrs per day from Monday to Saturday)

Newer T-L method like Learner-doctor method (Clinical clerkship) should be mandatorily implemented, from 1st clinical postings in Obstetrics and Gynaecology 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 posting 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 surgeries if any till patient is discharged.

	Curriculum Focus of Learner - Doctor programme
Posting 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness
Posting 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Posting 3	All of the above and choice of investigations, basic procedures and continuity of care
Posting 4	All of the above and decision making, management and outcome

Attitude, Ethics &Communication Module (AETCOM module)

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 which is called the AETCOM module. The purpose is to help the students apply principles of bioethics, systems-based care, apply empathy and other human values in patient care, communicate effectively with patients and relatives and to become a professional who exhibits all these values. This will be a longitudinal programme spread across the continuum of the MBBS programme including internship. MBBS Phase 3 Part 2, has to complete 8 modules of 5hours each. The OBGyne faculty will have the responsibility of conducting 2-3 modules as per the decision and logistics of each institution.

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 Obstetrics and Gynaecology.

75% attendance in AETCOM Module is required for eligibility to appear for final examination in 3rd professional year 3 part 2.

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 four theory internal assessment (One each in 2nd MBBS and 3rd MBBS Part1 and Two in 3rd MBBS Part2) excluding the prelims in Obstetrics and Gynaecology. An end of posting clinical assessment shall be conducted for each of the clinical postings in Obstetrics and Gynecology. There will be one Theory and Clinical preliminary exams before the student is eligible for university exams.

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.

Learners must secure at least 50% marks of the total marks (combined in theory and clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in Ophthalmology in order to be eligible for appearing at the final University examination.

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

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 Obstetrics and Gynaecology logbook entry completed to be eligible for appearing at the final university examination.

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

University examinations

University examinations in Third Professional Part II shall be held at end of 12months of training in the subjects of Medicine, Surgery including Orthopedics, Obstetrics and Gynecology and Pediatrics.

University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him/her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

Marks allotted : theory

Obstetrics and Gynecology	Theory	Clinical examination
Total marks	2 papers of 100 marks each for Obstetrics and Gynecology. The pattern of each question paper is given below	200 marks
	Long answer questions 2X15= 30 marks	
	Short answer questions 10x5=50 marks	
	MCQs 20x1=20marks	

DistributionofMarksforPracticalExaminations:

PracticalExamination	200 marks
Obstetricscase	75
Gynecologycase	75

Viva voice examination	50 marks
X-Rays/Charts	10
Instruments/Drugs	10

Specimens/Fetalskulland dummypelvis	10
Familywelfare	10
OSCE(commonObstetricsandGynecologyscenarios)	10

The theory paper should include different types such as structured essay(direct or case based), Short Answers Questions (SAQ) and MCQs (Multiple Choice Questions). Marks for each part should be indicated separately.

A minimum of **80%** of the marks should be from the **must know** 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.
One main essay question to be of the **modified variety** containing a clinical case scenario. At least 30% of questions should be clinical case scenario based. Questions to be constructed to test higher cognitive levels.
Clinical examinations will be conducted in the hospital wards. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and develop a management plan.

Viva/oral examination should assess approach to patient management, emergencies, attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data, X-rays, instruments, family welfare, identification of specimens, fetal skull and dummy pelvis,ECG, etc. is to be also assessed.

At least one question in each paper of the clinical specialties in the University examination should test knowledge competencies acquired during the professional development programme. Skill competencies acquired during the Professional Development Programme must be tested during the clinical, practical and viva voce.

Pass criteria

Internal Assessment: 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations

University Examination: Mandatory 50% marks separately in theory and clinicals(clinicals = clinical + viva)

SAMPLE FOR A 100-MARK THEORY QUESTION PAPER IN OBSTETRICS

LONG ANSWER QUESTIONS **2X15=30 marks**

1. A 35 year old Gravida 2, Para 1, living 1 has delivered a twins- 1st baby of weight 2.5kgsand 2nd twin 2.7kg 30 mins back. Patient complains of excessive bleeding per vagina with fatigability and giddiness.. Her pulse is 130/m, BP is 70/50mmHg. Uterus is flabby.
    - What is your diagnosis? (4 marks)
    - What are the reasons. (4 marks)
    - Outline the investigations & treatment of the case. (3+4marks)

2. A 28 year old Gravida 2, Abortion 1 with 32 weeks of pregnancy comes to Emergency ward with 2 episodes of vomiting , headache and blurring of vision. Her pulse is 98/m and BP is 180/110mmHg.
    - What is your diagnosis? (5 marks)
    - Outline the investigations and treatment. (5+5 marks)

SHORT ANSWER QUESTIONS **10X5=50 marks**

3. A 18 year old primigravida came with complaints of easy fatigability and swelling of legs since 1 week . Her Hb is 6gms% .How do u treat this patient?
4. Enumerate the investigations, treatment and vaccination for a 25 years old primigravida with 3 months amenorrhoea. (2+3)
5. Describe the mechanism of labour in breech presentation. Enumerate the fetal complications of vaginal breech delivery. (3+2 marks)
6. A 20 yr old G2P1L1 lady has come in with 6wks of unplanned pregnancy. She wants to terminate the pregnancy, what are the legal issues to consider?

7. Describe the differential diagnosis and management of a Primigravida with 32 weeks of gestation who presented to emergency ward with bleeding PV. (2+3 marks)
8. Describe the indications and methods of medical management of ectopic pregnancy. (2+3 marks)
9. Define maternal mortality. Enumerate the causes of maternal deaths. Mention different programs in India. (1+2+2 marks)
10. Describe the screening tests to diagnose Diabetes in pregnancy.
11. What are the steps of active management of third stage of labour.
12. Enumerate the indications & contraindications of Inj.Methylergometrine in obstetrics.(3+2 marks)

SELECT THE SINGLE BEST RESPONSE TO THE MULTIPLE CHOICE QUESTIONS GIVEN BELOW. 20X1=20 marks

13. 20 year old Gravida 2 Para 1 living 1 comes with history of 3 months amenorrhea and pain abdomen. She has had two episodes of spotting per vagina. On vaginal examination, her vitals are stable, uterus corresponds to 12 weeks size and cervical os is closed.
    The most probable diagnosis is
    a) Missed abortion
    b) Threatened abortion
    c) Incomplete abortion
    d) Complete abortion

SAMPLE FOR A 100-MARK THEORY QUESTION PAPER IN GYNECOLOGY

LONG ANSWER QUESTIONS (2 x 15 marks = 30 marks)

1. 38-year-old comes with excessive menstrual bleeding with passage of clots. She is not pregnant.

a. Discuss the PALM COEIN approach to classifying this condition. (4)

b. Describe in detail the conditions – L and M (3+3)

She is investigated and found to have a 8x8 cm leiomyoma.

c. Discuss the principles and steps in the operative management of such a condition. (5)

2. 16-year-old girl is brought by parents with complaints that she has not attained menstruation.

a. What is the condition . Define this condition .(1+1 MARKS)

b. Enumerate the various causes for the condition.(5 MARKS)

c. Describe the clinical and management of imperforate hymen. (4+4 MARKS)

SHORT ANSWER QUESTIONS (10 x 5 marks = 50 marks)

3. Genital tuberculosis. Discuss the clinical features (2 marks). Enumerate the investigations (1 mark). Discuss the management (2 marks).
4. A 24-year-old P1L1 comes with complaints of curdy white discharge per vaginum. Apply the concept of syndromic management of Sexually Transmitted Disease and prepare a treatment plan for such a patient.
5. Discuss the etiological factors (2 marks), clinical features (1 mark) and classification (2 marks) and of uterovaginal prolapse.
6. Define menopause (1). Discuss the clinical features (2) and management options (2) for menopausal transition.
7. A couple married for 4 years comes with complaints of not being able to bear children. Classify the various causes of this condition.

8. A woman with primary infertility is found to have anovulatory cycles. Enumerate the pharmacological agents for ovulation induction (2). Describe the mechanism of action/ method of usage/ complications of any one of the agents (1+1+1)
9. 45-year-old woman has undergone pap smear and the report shows H-SIL. Discuss the options for management (3) and follow up (2) for the condition
10. Classify Ovariantumours (WHO classification).
11. Enumerate tests for tubal patency (2). Discuss in detail the steps in performance of a Hysterosalpingography (3).
12. A 30-year-old came with raised Beta HCG and passage of grape like vesicles per vaginum. Uterus was evacuated.

a. What is the condition likely to be (1 mark).
b. Prepare a management plan(2 marks)
c. Follow-up plan (2 marks) for this patient.

SELECT THE SINGLE BEST RESPONSE TO THE MULTIPLE CHOICE QUESTIONS GIVEN BELOW.

20X1=20 marks

13) A 48 year old women presents with intermenstrual bleeding for two months and episodes of bleeding occurring anytime in the cycle. There is no associated pain. Differential diagnosis for intermenstrual bleeding does not include

a)endocervical polyp

b)cervical malignancy

c)ovarianteratoma

d) atrophic vaginitis

etc…

Department of Paediatrics

ProfessionalYear-I)

Nameof theprogram:MBBS
Name of the subject:Pediatrics
(PE)YearofRevision:2019
Theory Paper Course code:
PAE002PracticalCoursecode:PAE2
03

GOAL

Clinicianwhounderstandsandprovidespreventive,promotive,curative,palliativeandholisticcarewithcompassion.

- Leader andmemberofthehealthcareteamandsystemwithcapabilitiestocollect, analyze,synthesizeandcommunicatehealthdataappropriately.
- Communicatorwithpatients,families,colleaguesandcommunity.
- Lifelonglearnercommittedtocontinuousimprovementofskillsandknowledge.
- Professional,whoiscommittedtoexcellence,isethical,responsiveandaccountabletopatients,communityan dprofession.

The broad goal of the teaching of undergraduate students in Pediatrics is to produce graduates capable ofdeliveringefficientfirstcontactPediatriccare.TheaimofteachingtheundergraduatestudentinPediatrics is to impart such knowledge and skills that may enable him to diagnose and treat commonchildhoodillnessesincludingneonataldisorders.He/sheshallacquirecompetenceforclinicaldiagnosisba sedonhistory,physicalexaminationandrelevantlaboratoryinvestigationsandinstituteappropriatelineofmanagem ent;thiswouldincludediseasescommonintropics(parasitic,bacterialorviralinfections,nutritionaldisorders,includi ngdehydrationandelectrolytedisturbances)andvarioussystemillnesses.

COMPETENCIES

Thestudentmustdemonstrate:

- Abilitytoassessandpromoteoptimalgrowth,developmentandnutritionofchildrenandadolescent sandidentifydeviationsfromnormal,
- AbilitytorecognizeandprovideemergencyandroutineambulatoryandFirstLevelReferralUnitcareforneon ates,infants,childrenandadolescentsandreferasmaybeappropriate,
- Abilitytoperformproceduresasindicatedforchildrenofallagesintheprimarycaresetting,
- Abilitytorecognizechildrenwithspecialneedsandreferappropriately,
- Abilitytopromotehealthandpreventdiseasesinchildren,
- AbilitytoparticipateinNationalProgrammesrelatedtochildhealthandinconformationwiththeIntegratedMa nagementofNeonatalandChildhoodIllnesses(IMNCI)Strategy,
- Abilitytocommunicateappropriatelyandeffectively.

OBJECTIVES

Knowledge

Attheendofthecourse,thestudentshall be ableto

- DemonstrateknowledgeofnationalandregionalhealthcarepoliciesincludingtheNationalHealthMissionthatincorp oratesNationalRuralHealthMission(NRHM)andNationalUrbanHealthMission(NUHM),frameworks,economicsa ndsystemsthatinfluencehealthpromotion,healthcaredelivery,diseaseprevention,effectiveness,responsiveness, qualityandpatientsafety.
- Demonstrateabilityto elicitand record fromthepatient,andotherrelevantsourcesincluding relativesand caregivers, a history that is complete and relevant to disease identification, disease prevention andhealthpromotion.
- Demonstrateabilityto elicitand record fromthepatient,andotherrelevantsourcesincluding relativesandcaregivers,ahistorythatiscontextualtogender,age,vulnerability,socialandeconomicstatus,patientpr eferences,beliefsandvalues.
- Demonstrateabilitytoperformaphysicalexaminationthatiscompleteandrelevanttodiseaseidentification,diseasep reventionandhealthpromotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economicstatus,patientpreferencesandvalues.

- Demonstrateeffective clinical problemsolving, judgmentandability tointerpretandintegrate availabledatainordertoaddresspatientproblems,generatedifferentialdiagnosesanddevelopindividualizedmanagementplansthatincludepreventive,promotiveandtherapeuticgoals.
- Demonstrateabilitytochoosetheappropriatediagnostictestsandinterpretthesetestsbasedonscientificvalidity,cost effectivenessandclinicalcontext.
- Demonstrateabilitytoprescribeandsafelyadministerappropriatetherapiesincludingnutritionalinterventions,pharmacotherapyandinterventionsbasedontheprinciplesofrationaldrugtherapy,scientificvalidity,evidenceandcostthatconformtoestablishednationalandregionalhealthprogrammesandpoliciesforthefollowing:

Demonstrateabilitytoappropriatelyidentifyandreferpatientswhomayrequirespecializedoradvancedtertiarycare.

Skills

- Demonstratethestepsofinserting anIVcannulain amodel.
- DemonstratethestepsofinsertinganinterosseouslineinaMannequin.
- Provideintra-natalcareandconductanormaldeliveryinasimulatedenvironment.
- Demonstratethecorrectadministrationofdifferentvaccinesinamannequin.
- PerformNeonatalresuscitationinamanikin.
- PerformNGtube insertioninamanikin.
- PerformIVcannulationinamodel.
- PerformInterosseousinsertionmodel.
- Demonstratethetechniqueofliverbiopsyina Perform LiverBiopsyin asimulatedenvironment.
- ObservethevariousmethodsofadministeringOxygen.
- Assessairwayandbreathing.Demonstratethemethodofpositioningofaninfant&childtoopenairwayinasimulatedenvironment.
- Assessairwayandbreathing:administeroxygenusingcorrecttechniqueandappropriateflowrate.
- Assessairwayandbreathing:performassistedventilationby Bagandmaskinasimulated environment.
- SecureanIVaccessinasimulatedenvironment.
- ProvideBLSforchildreninmanikin.
- Demonstrateperformanceofbonemarrowaspirationinmanikin.
- Performinamannequinlumbarpuncture.Discusstheindications,contraindicationoftheprocedure.
- ObserveadministrationofNebulisation.

Attitudeandcommunication

- Communicationwithempathytopatients&patient'sattenders.
- Tocounsel&obtaininformedconsentfrompatient&patientsattenders.

Integration

Theteachingshouldbealignedandintegratedhorizontallyandverticallyinordertoprovidecomprehensivecare forneonates,infants, childrenandadolescentsbasedon asoundknowledge ofgrowth,development,diseaseandtheirclinical,social,emotional,psychologicalcorrelatesinthecontextofnational healthpriorities.

SYLLABUS

Reference**:**
MedicalCouncilofIndia,CompetencyBasedUndergraduateCurriculumfortheIndianMedicalGraduate,2018.Volume2;pg150 - 189

TheorySyllabus: Lectures/Small group discussion

Number	Topic1-NormalGrowthandDevelopment
PE1.1	DefinetheterminologiesGrowthanddevelopmentanddiscussthefactorsaffectingnormalgrowthand development
PE1.2	Discussanddescribethepatternsofgrowthininfants,childrenandadolescents
PE1.3	DiscussanddescribethemethodsofassessmentofgrowthincludinguseofWHOandIndiannational standards.Enumeratetheparametersusedforassessmentofphysicalgrowthininfants,childrenandadolescents
PE1.5	Definedevelopmentanddiscussthenormaldevelopmentalmilestoneswithrespecttomotor,behavior, social,adaptiveandlanguage.
PE1.6	Discussthemethodsofassessmentofdevelopment

Number	Topic2-Commonproblemsrelatedtogrowth
PE2.1	Discusstheetio-pathogenesis,clinicalfeatures andmanagementofachildwhofailstothrive
PE2.4	Discusstheetio-pathogenesis,clinicalfeatures andmanagement ofachildwithshortstature
PE2.6	Enumeratethereferralcriteriafor growthrelatedproblems

Number	Topic3-CommonproblemsrelatedtoDevelopment-1(Developmentaldelay,Cerebralpalsy)
PE3.1	Define,enumerateanddiscussthecausesofdevelopmentaldelayanddisabilityincludingintellectual disabilityinchildren
PE3.2	Discusstheapproachtoachildwithdevelopmentaldelay
PE3.5	Discusstheroleofthechilddevelopmentalunitinmanagement ofdevelopmentaldelay
PE3.6	Discussthereferralcriteriaforchildrenwithdevelopmentaldelay
PE3.8	Discusstheetio-pathogenesis,clinicalpresentation andmulti- disciplinaryapproachinthe managementofCerebralpalsy

Number	Topic4-CommonproblemsrelatedtoDevelopment-2(ScholasticbackwardnessLearningDisabilities,Autism,ADHD)
PE4.1	Discussthecausesandapproachto achildwithscholasticbackwardness
PE4.2	Discusstheetiology,clinicalfeatures,diagnosisandmanagementofachildwithLearningDisabilities
PE4.3	Discusstheetiology,clinicalfeatures,diagnosisandmanagementofachildwithAttentionDeficit HyperactivityDisorder(ADHD)
PE4.4	Discusstheetiology,clinicalfeatures,diagnosisandmanagementofachildwithAutism
PE4.5	Discusstheroleofchildguidanceclinicinchildrenwithdevelopmentalproblems

Number	Topic5–Commonproblemsrelatedtobehavior
PE5.1	Describetheclinicalfeatures,diagnosisandmanagementofthumbsucking
PE5.2	Describetheclinicalfeatures,diagnosisandmanagement offeedingproblems
PE5.3	Describetheclinicalfeatures,diagnosisandmanagementofnailbiting
PE5.4	Describetheclinicalfeatures,diagnosisandmanagement ofbreathholdingspells
PE5.5	Describetheclinicalfeatures,diagnosisandmanagementoftempertantrums
PE5.6	Describetheclinicalfeatures,diagnosisandmanagementofpica
PE5.7	Describetheclinicalfeatures,diagnosisandmanagementoffussyinfant
PE5.8	Discusstheetiology,clinicalfeaturesandmanagementofEnuresis
PE5.9	Discusstheetiology,clinicalfeaturesandmanagementofencopresis
PE5.10	Discusstheroleofchildguidanceclinicinchildrenwithbehaviouralproblemsandthereferralcriteria

PE5.11	Visittochildguidanceclinicandobservefunctioning

Number	Topic6–AdolescentHealth&commonproblemsrelatedtoAdolescentHealthNumberofcompetencies
PE6.1	Defineadolescenceandstagesofadolescence
PE6.2	Describethephysical,physiologicalandpsychologicalchangesduringadolescence(Puberty)
PE6.3	Discussthegeneralhealthproblemsduringadolescence
PE6.4	Describeadolescentsexualityandcommonproblemsrelatedtoit
PE6.5	Explainteadolescentnutritionandcommonnutritionalproblems
PE6.6	Discussthecommonadolescenteatingdisorders(AnorexiaNervosa,Bulimia)
PE6.7	Describethecommonmentalhealthproblems duringadolescence
PE6.10	DiscusstheobjectivesandfunctionsofAFHS(Adolescentfriendlyhealthservices)andthereferralcriteria
PE6.12	Enumeratetheimportanceofobesityandother NCDinadolescents
PE6.13	Enumeratetheprevalenceandtheimportanceofrecognitionofsexualdrugabuseinadolescentsandchildren

Number	Topic7-TopromoteandsupportoptimalBreastfeedingforInfants
PE7.1	Awarenessontheculturalbeliefsandpracticesofbreastfeeding
PE7.2	Explainthephysiologyoflactation
PE7.3	Describethecompositionandtypesofbreastmilkanddiscussthedifferencesbetweencow'smilkandHumanmilk
PE7.4	Discussteadvantagesofbreastmilk
PE7.6	Enumeratethebabyfriendlyhospitalinitiatives

Number	Topic8–ComplementaryFeeding
PE8.1	Definethetermcomplementaryfeeding
PE8.2	Discusstheprinciples,theinitiation,attributes,frequency,techniquesandhygienerelatedtoComplementary FeedingincludingIYCF
PE8.3	Enumeratethecommoncomplimentaryfoods

Number	Topic9-Normalnutrition,assessment andmonitoring
PE9.1	Describetheagerelatednutritionalneedsofinfants,childrenandadolescentsincludingmicronutrientsandvitamins
PE9.2	Describethetoolsandmethodsfor assessmentandclassificationofnutritionalstatusofinfants,childrenandadolescents
PE9.3	ExplainsthecalorificvalueofcommonIndianfoods

Number	Topic10- Providenutritionalsupport, assessmentandmonitoringforcommonnutritionalproblems
PE10.1	Define and describe the etio-pathogenesis, classify including WHO classification, clinical features,complicationandmanagementofSevereAcuteMalnourishment(SAM)andModerateAcuteMalnutrition (MAM)
PE10.2	OutlinetheclinicalapproachtoachildwithSAMandMAM
PE10.6	Enumeratetheroleoflocallypreparedtherapeuticdietsandreadytousetherapeuticdiets

Number	Topic11-Obesityinchildren
PE11.1	Describethecommonetiology,clinicalfeatures andmanagementofobesityinchildren
PE11.2	Discusstheriskapproachforobesityanddiscussthepreventionstrategies
PE11.06	Discusscriteriaforreferral

Number	Topic12:MicronutrientsinHealthanddisease-1(VitaminsADEK, BComplex andC)
PE12.1	DiscusstheRDA, dietarysourcesofVitamin AandtheirroleinHealthanddisease
PE12.2	Describethecauses,clinicalfeatures, diagnosisandmanagementofdeficiency/excessofvitaminA
PE12.5	DiscussthevitaminAprophylaxisprogramandtheirrecommendations
PE12.6	DiscusstheRDA,dietarysourcesofvitaminDandtheirroleinhealthanddisease
PE12.7	Describethecauses,clinicalfeatures,diagnosisandmanagementofDeficiency/excessofVitaminD (RicketsandHypervitaminosisD)
PE12.10	Discusstheroleofscreeningforvitamin Ddeficiency
PE12.11	DiscusstheRDA,dietary sourcesofvitaminEandtheirrole inhealthanddisease
PE12.12	Describethecauses,clinicalfeatures,diagnosisandmanagementofdeficiencyofvitaminE
PE12.13	DiscusstheRDA, dietarysourcesofvitamin Kandtheirrole inhealthanddisease
PE12.14	Describethecauses,clinicalfeatures,diagnosismanagementandpreventionofdeficiencyofvitaminK
PE12.15	DiscusstheRDA,dietary sourcesofvitaminBandtheirrole inhealthanddisease
PE12.16	Describethecauses,clinicalfeatures, diagnosisandmanagementofdeficiencyofBcomplexVitamins
PE12.19	DiscusstheRDA,dietarysourcesof VitaminCand theirroleinHealthanddisease
PE12.20	Describethecauses,clinicalfeatures,diagnosisandmanagementof deficiencyofVitaminC(scurvy)

Number	Topic13:MicronutrientsinHealthanddisease-2:Iron,Iodine,Calcium, Magnesium
PE13.1	DiscusstheRDA,dietarysourcesofIronandtheirroleinhealthanddisease
PE13.2	Describethecauses,diagnosisandmanagementofFedeficiency
PE13.6	DiscusstheNationalanaemiacontrolprogramandits recommendations
PE13.7	DiscusstheRDA,dietarysourcesofIodineandtheirroleinHealthanddisease
PE13.8	Describethecauses,diagnosisandmanagementofdeficiencyofIodine
PE13.10	DiscusstheNationalGoiterControlprogramandtheirrecommendations
PE13.11	DiscusstheRDA,dietarysourcesofCalciumandtheirroleinhealthanddisease
PE13.12	Describethecauses, clinicalfeatures,diagnosisandmanagementofCaDeficiency
PE13.13	DiscusstheRDA,dietarysourcesofMagnesiumandtheirroleinhealthanddisease
PE13.14	Describethecauses,clinicalfeatures,diagnosisandmanagementofMagnesiumDeficiency

Number	Topic:14Toxicelementsandfreeradicalsandoxygentoxicity
PE14.1	Discusstheriskfactors,clinicalfeatures,diagnosis andmanagementofLeadPoisoning
PE14.2	Discusstheriskfactors,clinicalfeatures,diagnosis andmanagementofKeroseneingestion
PE14.3	Discusstheriskfactors,clinicalfeatures,diagnosis andmanagementofOrganophosphorouspoisoning
PE14.4	Discusstheriskfactors,clinicalfeatures,diagnosisandmanagementofparacetamolpoisoning
PE14.5	Discusstheriskfactors,clinicalfeatures,diagnosis andmanagementofOxygentoxicity

Number	Topic15:Fluidandelectrolytebalance
PE15.1	Discussthefluidandelectrolyterequirementinhealthanddisease
PE15.2	Discusstheclinicalfeaturesandcomplicationsoffluidandelectrolyteimbalanceandoutlinethe management

Number	Topic16:IntegratedManagementofNeonatal and ChildhoodIllnesses(IMNCI)Guideline
PE16.1	ExplainthecomponentsofIntegratedManagementofNeonatalandChildhoodIllnesses(IMNCI) guidelinesandmethodofRiskstratification

Number	Topic17:TheNationalHealthprograms,NHM

PE17.1	Statethevisionandoutlinethegoals,strategies andplanofactionofNHMandotherimportantnationalprograms pertainingtomaternalandchildhealth includingRMNCHA+,RBSK,RKSK,JSSKmission IndradhanushandICDS
PE17.2	Analyzetheoutcomesandappraisethemonitoringandevaluation ofNHM

Number	Topic18:TheNationalHealthPrograms:RCH
PE18.1	Listandexplainthecomponents,plan,outcomeofReproductiveChildHealth(RCH)programand appraiseitsmonitoringandevaluation
PE18.2	Explainpreventiveinterventionsforchildsurvivalandsafemotherhood

Number	Topic19:NationalPrograms,RCH-UniversalImmunizationsprogram
PE19.1	ExplainthecomponentsoftheUniversalImmunizationProgramandtheNationalImmunizationProgram
PE19.2	ExplaintheepidemiologyofVaccinepreventablediseases
PE19.3	Vaccinedescriptionwithregardto classificationofvaccines,strainused,dose,route,schedule,risks, benefitsandsideeffects,indicationsandcontraindications
PE19.4	Definecoldchainanddiscussthemethodsofsafestorage andhandlingofvaccines
PE19.5	Discuss immunization in special situations – HIV positive children, immunodeficiency, pre-term, organtransplants,thosewhoreceivedbloodandblood products,splenectomisedchildren,adolescents, travellers
PE19.9	Describethecomponents ofsafevaccinepractice–Patienteducation/counselling;adverseevents followingimmunization,safeinjectionpractices,documentationandMedico-legalimplications
PE19.15	ExplainthetermimpliedconsentinImmunizationservices
PE19.16	Enumerateavailablenewervaccinesandtheirindicationsincludingpentavalentpneumococcal,rotavirus, JE,typhoid IPV &HPV

Number	Topic20:CareoftheNormalNewborn,andHighriskNewborn
PE20.2	Explainthecareof anormalneonate
PE20.6	ExplainthefollowupcareforneonatesincludingBreastFeeding,Temperaturemaintenance, immunization,importanceof growthmonitoringandredflags
PE20.7	Discusstheetiology,clinicalfeaturesandmanagementofBirthasphyxia
PE20.8	Discusstheetiology,clinicalfeaturesandmanagementofrespiratorydistressinNewbornincluding meconiumaspirationandtransienttachypnoeaofnewborn
PE20.9	Discusstheetiology,clinicalfeaturesandmanagementofBirthinjuries
PE20.10	Discusstheetiology,clinicalfeaturesandmanagementofHemorrhagicdiseaseofNewborn
PE20.11	Discusstheclinicalcharacteristics,complicationsandmanagementofLow birth weight(pretermand Smallforgestation)
PE20.12	Discussthetemperatureregulationinneonates,clinicalfeaturesandmanagementofNeonatal Hypothermia
PE20.13	Discussthetemperatureregulationinneonates,clinicalfeatures andmanagementofNeonatal Hypoglycemia
PE20.14	Discusstheetiology,clinicalfeaturesandmanagementofNeonatalhypocalcemia
PE20.15	Discusstheetiology,clinicalfeaturesandmanagementofNeonatalseizures
PE20.16	Discusstheetiology,clinicalfeaturesandmanagementofNeonatalSepsis
PE20.17	Discusstheetiology,clinicalfeaturesandmanagementofPerinatalinfections
PE20.19	Discusstheetiology,clinicalfeaturesandmanagementofNeonatalhyperbilirubinemia
PE20.20	Identifyclinicalpresentationsofcommonsurgicalconditionsinthenewborn includingTEF,esophageal atresia,analatresia,cleftlipandpalate,congenitaldiaphragmaticherniaandcausesofacuteabdomen

Number	Topic21:Genito-Urinarysystem
PE21.1	Enumeratetheetio-pathogenesis,clinicalfeatures,complicationsandmanagementofUrinaryTract infectioninchildren

PE21.2	Enumeratetheetio-pathogenesis,clinicalfeatures,complicationsandmanagementofacutepost-streptococcalGlomerularNephritisinchildren
PE21.3	DiscusstheapproachandreferralcriteriatoachildwithProteinuria
PE21.4	Discusstheapproach andreferralcriteria toachildwithHematuria
PE21.5	Enumeratetheetio-pathogenesis,clinicalfeatures,complicationsandmanagementofAcuteRenal Failureinchildren
PE21.6	Enumeratetheetio-pathogenesis,clinicalfeatures,complicationsandmanagementofChronicRenal FailureinChildren
PE21.7	Enumeratetheetio-pathogenesis,clinicalfeatures,complicationsandmanagementofWilmsTumor
PE21.17	Describetheetiopathogenesis,grading,clinicalfeaturesandmanagementofhypertensionin children

Number	**Topic22:Approachtoandrecognitionof achildwithpossibleRheumatologicproblem**
PE22.1	EnumeratethecommonRheumatologicalproblemsinchildren.Discusstheclinicalapproachto recognitionandreferralofachildwithRheumatologicalproblem
PE22.3	DescribethediagnosisandmanagementofcommonvasculiticdisordersincludingHenochSchonlein
	Purpura,KawasakiDisease,SLE,JIA

Number	**Topic23:Cardiovascularsystem-HeartDiseases**
PE23.1	DiscusstheHemodynamicchanges,clinicalpresentation,complicationsandmanagementofAcyanotic HeartDiseases–VSD,ASDand PDA
PE23.2	DiscusstheHemodynamic changes,clinicalpresentation,complicationsandmanagementofCyanotic HeartDiseases–Fallot'sPhysiology
PE23.3	Discusstheetio-pathogenesis,clinicalpresentationandmanagementofcardiacfailure in infantandchildren
PE23.4	Discusstheetio-pathogenesis,clinicalpresentationandmanagementofAcuteRheumaticFever in children
PE23.5	Discusstheclinicalfeatures,complications,diagnosis,managementandpreventionofAcuteRheumatic Fever
PE23.6	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofInfectiveendocarditisinchildren
PE23.16	DiscusstheindicationsandlimitationsofCardiaccatheterization
PE23.17	EnumeratesomecommoncardiacsurgerieslikeBTshunt,PottsandWaterston'sandcorrective surgeries

Number	**Topic24:DiarrhoealdiseasesandDehydration**
PE24.1	Discusstheetio-pathogenesis,classification,clinicalpresentationandmanagementofdiarrhealdiseases inchildren
PE24.2	Discusstheclassificationandclinicalpresentationofvarioustypesofdiarrhealdehydration
PE24.3	DiscussthephysiologicalbasisofORT,typesofORS andthecompositionofvarioustypesof ORS
PE24.4	Discussthetypes offluidusedinPaediatric diarrhealdiseasesandtheircomposition
PE24.5	Discusstheroleofantibiotics,antispasmodics,anti-secretorydrugs,probiotics,anti-emeticsinacute diarrhealdiseases
PE24.6	Discussthecauses,clinicalpresentationandmanagementofpersistentdiarrhoeainchildren
PE24.7	Discussthecauses,clinicalpresentationandmanagementofchronicdiarrhoeainchildren
PE24.8	Discussthecauses,clinical presentationandmanagementofdysenteryinchildren

Number	**Topic25:Malabsorption**
PE25.1	Discusstheetio-pathogenesis,clinicalpresentationandmanagementofMalabsorptioninChildrenandits causesincludingceliacdisease

Number	**Topic26:Acute andchronicliverdisorders**
PE26.1	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofacutehepatitisinchildren

PE26.2	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofFulminantHepaticFailure inchildren
PE26.3	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofchronicliver diseases inchildren
PE26.4	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofPortalHypertensioninchildren
PE26.11	EnumeratetheindicationsforUpperGIendoscopy
PE26.12	DiscussthepreventionofHepB infection–UniversalprecautionsandImmunisation

Number	Topic27:PediatricEmergencies–CommonPediatricEmergencies
PE27.1	Listthecommoncausesofmorbidityandmortalityintheunderfivechildren
PE27.2	Describetheetio-pathogenesis,clinicalapproachandmanagementofcardiorespiratoryarrestinchildren
PE27.3	Describetheetio-pathogenesisofrespiratorydistressinchildren
PE27.4	Describetheclinicalapproachandmanagementofrespiratorydistressinchildren
PE27.5	Describetheetio-pathogenesis,clinicalapproachand managementofShockinchildren
PE27.6	Describetheetio-pathogenesis,clinicalapproachand managementofStatusepilepticus
PE27.7	Describetheetio-pathogenesis,clinicalapproachandmanagementofanunconsciouschild
PE27.8	Discussthecommontypes,clinicalpresentationsandmanagementofpoisoninginchildren
PE27.9	Discussoxygentherapy,inPediatricemergenciesandmodesofadministration
PE27.11	Explainthe needand processoftriageofsickchildren broughtto healthfacility
PE27.12	Enumerateemergencysignsandprioritysigns
PE27.13	Listthesequentialapproachofassessmentofemergencyandprioritysigns
PE27.24	Monitoringandmaintainingtemperature:definehypothermia.Describetheclinicalfeatures,complications andmanagementofHypothermia
PE27.25	Describetheadvantagesandcorrectmethodofkeepinganinfantwarmbyskintoskincontact
PE27.26	Describetheenvironmentalmeasurestomaintaintemperature
PE.27.29	Discussthecommoncauses,clinicalpresentation, medico-legalimplicationsofabuse

Number	Topic28:Respiratorysystem
PE28.1	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofNasopharyngitis
PE28.2	DiscusstheetiofPharyngoTonsillitis
PE28.3	DiscusstheclinicalfeaturesandmanagementofPharyngoTonsillitis
PE28.4	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofAcuteOtitis Media(AOM)
PE28.5	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofEpiglottitis
PE28.6	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofAcutelaryngo-trachea-bronchitis
PE28.7	Discusstheetiology,clinicalfeaturesandmanagementofStridorinchildren
PE28.8	Discussthetypes,clinicalpresentation,andmanagementofforeignbodyaspirationininfantsand children

Number	Topic29:AnemiaandotherHemato-oncologicdisordersinchildren
PE29.1	Discusstheetio-pathogenesis,clinicalfeatures,classificationandapproachtoachildwithanaemia
PE29.2	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofIronDeficiencyanaemia
PE29.3	DiscusstheetiopathogenesisclinicalfeaturesandmanagementofVITB12,Folatedeficiencyanaemia
PE29.4	Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, ThalassemiaMajor,Sicklecellanaemia,Hereditaryspherocytosis,Auto-immunehemolyticanaemiaandhemolytic uremicsyndrome
PE29.5	DiscusstheNationalAnaemiaControlProgram
PE29.6	Discussthecauseofthrombocytopeniainchildren:describetheclinicalfeaturesandmanagementof IdiopathicThrombocytopenicPurpura(ITP)
PE29.7	Discusstheetiology,classification,pathogenesisandclinicalfeaturesofHemophiliainchildren
PE29.8	Discusstheetiology,clinicalpresentationandmanagementof AcuteLymphoblasticLeukemiainchildren

PE29.9	Discusstheetiology,clinicalpresentationandmanagement oflymphomainchildren
PE29.16	Discusstheindicationsfor Hemoglobinelectrophoresisandinterpretreport
PE29.20	Enumeratetheindicationsforsplenectomyandprecautions

Number	Topic30:SystemicPediatrics-CentralNervoussystem
PE30.1	Discusstheetio-pathogenesis,clinicalfeatures,complications,managementandpreventionofmeningitis inchildren
PE30.2	Distinguishbacterial,viralandtuberculousmeningitis
PE30.3	Discusstheetio-pathogenesis,classification,clinicalfeatures,complicationandmanagementof Hydrocephalusinchildren
PE30.4	Discusstheetio-pathogenesis,classification,clinicalfeatures,andmanagementofMicrocephalyin children
PE30.5	EnumeratetheNeuraltubedefects.Discussthecauses,clinicalfeatures,types, andmanagementof NeuralTubedefect
PE30.6	Discusstheetio-pathogenesis,clinicalfeatures,andmanagementofInfantilehemiplegia
PE30.7	Discusstheetio-pathogenesis,clinicalfeatures,complicationsandmanagementofFebrileseizuresin
	children
PE30.8	Defineepilepsy.Discussthepathogenesis,clinicaltypes,presentationandmanagementofEpilepsyin children
PE30.9	DefinestatusEpilepticus.Discusstheclinicalpresentationandmanagement
PE30.10	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofMentalretardationinchildren
PE30.11	Discusstheetio-pathogenesis,clinicalfeatures andmanagementofchildrenwith cerebralpalsy
PE30.12	Enumeratethecausesoffloppinessinaninfantanddiscusstheclinicalfeatures,differentialdiagnosisand management
PE30.13	Discusstheetio-pathogenesis,clinical features,managementandpreventionofPoliomyelitisinchildren
PE30.14	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofDuchenemusculardystrophy
PE30.15	Discusstheetio-pathogenesis,clinicalfeaturesandmanagementofAtaxiainchildren
PE30.16	Discusstheapproachto andmanagementofachildwithheadache
PE30.21	Enumeratetheindicationanddiscussthelimitationsof EEG,CT,MRI

Number	Topic31:AllergicRhinitis,AtopicDermatitis,BronchialAsthma ,UrticariaAngioedema
PE31.1	Describetheetio-pathogenesis,managementandpreventionofAllergicRhinitisinChildren
PE31.3	Describetheetio-pathogenesis,clinicalfeaturesandmanagementofAtopicdermatitisinChildren
PE31.5	Discusstheetio-pathogenesis,clinicaltypes,presentations,managementandpreventionofchildhood Asthma
PE31.8	Enumeratecriteriaforreferral
PE31.10	EnumeratetheindicationsforPFT
PE31.12	Discusstheetio-pathogenesis,clinicalfeaturesand complicationsandmanagementofUrticaria Angioedema

Number	Topic32:ChromosomalAbnormalities
PE32.1	Discussthegeneticbasis,riskfactors,complications,prenataldiagnosis,managementandgenetic counselinginDown'sSyndrome
PE32.4	DiscussthereferralcriteriaandMultidisciplinaryapproachtomanagement
PE32.6	Discussthegeneticbasis,riskfactors,clinicalfeatures,complications,prenataldiagnosis,management andgeneticcounselinginTurner'sSyndrome
PE32.9	DiscussthereferralcriteriaandmultidisciplinaryapproachtomanagementofTurnerSyndrome
PE32.11	Discussthegeneticbasis,riskfactors,complications,prenataldiagnosis,managementandgenetic counselinginKlineferlterSyndrome

Number	Topic33:Endocrinology

PE33.1	Describetheetio-pathogenesisclinicalfeatures,managementofHypothyroidisminchildren
PE33.4	Discusstheetio-pathogenesis,clinicaltypes,presentations,complicationandmanagementofDiabetes mellitusinchildren
PE33.8	DefineprecociousanddelayedPuberty

Number	**Topic34:VaccinepreventableDiseases-Tuberculosis**
PE34.1	Discusstheepidemiology,clinicalfeatures,clinicaltypes,complicationsofTuberculosis inChildrenand Adolescents
PE34.2	Discussthevariousdiagnostictoolsforchildhoodtuberculosis
PE34.3	DiscussthevariousregimensformanagementofTuberculosisas perNationalGuidelines
PE34.4	DiscussthepreventivestrategiesadoptedandtheobjectivesandoutcomeoftheNational Tuberculosis ControlProgram
PE34.10	Discussthevarioussamplesfordemonstratingtheorganisme.g.GastricAspirate,Sputum,CSF,FNAC
PE34.12	Enumeratetheindicationsanddiscussthelimitations ofmethodsofculturingM.Tuberculii
PE34.13	EnumeratethenewerdiagnostictoolsforTuberculosisincludingBACTECCBNAATandtheir indications
PE34.14	Enumeratethecommoncausesoffever anddiscusstheetiopathogenesis,clinicalfeatures, complicationsandmanagementoffeverinchildren
PE34.15	Enumeratethecommoncausesoffever anddiscusstheetiopathogenesis,clinicalfeatures,complications andmanagementofchildwithexanthematous illnesseslikeMeasles,Mumps,Rubella&Chickenpox
PE34.16	Enumeratethecommoncausesoffever anddiscusstheetiopathogenesis,clinicalfeatures, complicationsandmanagementofchildwithDiphtheria,Pertussis,Tetanus.
PE34.17	Enumeratethecommoncausesoffever anddiscusstheetiopathogenesis,clinicalfeatures, complicationsandmanagementofchildwithTyphoid
PE34.18	Enumeratethecommoncausesoffever anddiscusstheetiopathogenesis,clinicalfeatures, complicationsandmanagementofchildwithDengue,Chikungunyaandothervectorborndiseases
PE34.19	Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features,complicationsandmanagementofchildrenwithCommonParasiticinfections,malaria,leishmanias is, filariasis,helminthicinfestations,amebiasis,giardiasis
PE34.20	Enumeratethecommoncausesoffever anddiscusstheetiopathogenesis,clinicalfeatures, complicationsandmanagementofchildwithRicketsialdiseases

Number	**Topic35:The roleofthephysicianinthecommunity**
PE35.1	Identify,discussanddefendmedicolegal,socio-culturalandethicalissuesastheypertaintohealthcare inchildren(includingparentalrightsandrighttorefusetreatment)

SVIMS- SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN, TIRUPATI

VENUE: COUNCIL HALL, SVIMS-SPMCW Date:21.04.2022

Sub: 2nd Bos for 3rd MBBS (Part I & II) Time:9.30 AM

SL.NO.	NAME	Members	Signature
1	Dr Alladi Mohan DEAN, SVIMS	Chairman	21/4/22
2	Dr K V Sreedhar Babu REGISTRAR, SVIMS	Member	21/4/2022
3	Dr Sharan B Singh.M PRINCIPAL, SVIMS-SPMCW	Member Secretary	21/4/22
	Dr.Aparna R Bitla, Vice Principal (Pre-clinical), SVIMS-SPMCW	Member	21/4/2022
4	Dr Vanajakshamma Controller of Examinations, SVIMS	Member	For D Manohara Supt.,
5	Dr K.Nagaraj Professor & HoD, Dept. of Community Medicine, SVIMS-SPMCW,Tirupati	Member	K.Nagaraj 21/4/22
6	Dr G.Ravi Prabhu Professor & Head, Community Medicine, S.V.Medical College, Tirupati	External Member (Offline)	21-04-2022
7	Dr Pankaj Shaw Professor & HoD, Community Medicine, Sree Ramachandra Institute of Medical	External Member (Online)	ONLINE K.Nagaraj 21/4/22
8	Dr Prerana Anthwal Assistant Professor & i/c, HoD, Dept. of ENT,	Member	21/4/2022
9	Dr G. Srinivas Assistant Professor, Dept. of ENT, Govt.Medical College, Cuddapah.	External Member (Online)	ONLINE 21/4/22
10	Dr.GSN MURTHY Professor of ENT, Govt ENT Hospital, Visakhapatnam	External Member (Online)	ONLINE 21/4/2022
11	Dr Prabhanjan Assistant Professor & HoD i/c, Dept. of Opthalmology, SVIMS-SPMCW	Member	21/4/22
12	Dr B.S.Naik Professor , Dept.of Opthalmology, Kurnool Medical College, Kurnool	External Member (Online)	ONLINE
13	Dr Suhas Prabhakar Professor & HoD, Dept. of Opthalmology, Sri Ramachandra Medical College, Porur,	External Member (Online)	ONLINE
14	Dr K.Bhaskar Reddy Professor & Head, Dept of Forensic Medicine,	Member	21.4.22

15	Dr T.T.K. Reddy HoD Department of Forensic Medicine, S.V.Medical College, Tirupati	External Member (Offline)	21/4/2022
16	Dr Jagadeesh Professor of Forensic Medicine, Vydehi Medical College, Marthanahalli, Bangalore	External Member (Offline)	21/4/22.
17	Dr Katyaramal Professor, Dept. of Medicine & 3rd Year MBBS coordinator	3rd Year MBBS co-ordinator	21/4/22
18	Dr K. Ravi Professor & Head, Bangalore Medical College and Research Institute, Bangalore	External Member (Online)	ONLINE
19	Dr V.A.Kothiwale Professor, Department of Medicine, Registrar, KLE Academy of Higher Eduation and Research Belgavi-590010.	External Member (Online)	ONLINE
20	Department of TB&RD	Member	A-Anutha
21	Department of Psychiatry	Member	
22	Department of DVL	Member	
23	Department of Emergency Medicine	Member	K. Rohith Gupta 21/4/2022
24	Dr Y.Mutheeswaraiah Professor & HoD, Dept. of General Surgery, SVIMS-SPMCW, Tirupati	Member	21.4.2022
25	Dr Srinivas N.M Dept of General Surgery, Bangalore, Bangalore Medical College and Research Institute	External Member (Online)	ONLINE
26	Dr S.Nagamunaiah Professor, Dept of General Surgery, Nellore, ACSR Govt. Medical College	External Member (Online)	ONLINE
27	Department of Anaesthesia Dr. Alok Sarmukaddam	Member	ONLINE 21-4-22
28	Department of Radiology	Member	
29	Department of Dental Surgery	Member	21/4/22

30	Dr J.Malathi Associate Professor & i/c HoD, Dept.of OBG, SVIMS-SPMCW	Member	Malathi
31	Dr T.Bharathi Professor, Dept. of OBG, SVMC, Tirupati	External Member (Offline)	
32	Dr Dharma Vijay Prof & HoD, Dept. of OBG, MVJ Medical College, HOSKOTE	External Member (Online)	
33	Dr N.Punith Patak Associate Professor & i/c HoD Dept. of Paediatrics, SVIMS-SPMCW	Member	N.P.
34	Dr Manohar Professor of Paediatrics, ACSR Medical College, Nellore	External Member (Online)	ONLINE
35	Dr Vinayaka.G Professor & HoD, Paediatrics, Subbaiah Institute of Medical College, Karnataka	External Member (Online)	ONLINE
36	Dr Venugopal Associate Professor, Dept. of Orthopaedics, SVIMS-SPMCW	Member	
37	Dr S Hari Babu, Professor, Dept. of Orthopaedics, S.V.Medical Collge, Tirupati	External Member (Offline)	
38	Dr.Arun, Professor & HoD, Dept. of Orthopaedics, Sri Devaraj Urs Medical	External Member (Online)	ONLINE

Submitted :.

As per orders of Director by regarding, of obg, HODIC, the External Members are changed : as follows : (copy Enclosed)

31.	Dr. Indira. Professor, ACSR, Nellore.	External Member (Offline)	✓
32.	Dr. Rajiv Saxena Professor & HoD, Oxford Medical College, Bangalore.	External Member (online)	ONLINE Malathi

SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN

TIRUPATI – 517 507

MBBS COURSE

Agenda of
2nd BOARD OF STUDIES MEETING
for 3rd Part-II MBBS COURSE
As per MCI/NMC Regulations on Graduate Medical Education as amended up to 2019
(Applicable for students admitted to First MBBS from Academic Year 2019-20 Onwards)

SVIMS UNIVERSITY
(A University established by an Act of A.P State Legislature)
TIRUPATI

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN

TIRUPATI

MBBS COURSE

2nd Board of Studies Meeting held on **21.04.2022**
for 3rd Part-II MBBS Students

INDEX

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES,
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN TIRUPATI
MBBS COURSE

Members for BOS

1. Dr.Alladi Mohan, - Chairman
   DEAN,
   SVIMS

2. Dr. K. V. Sreedhar Babu, - Member
   REGISTRAR,
   SVIMS

3. Dr.Sharan B Singh.M, - Member
   PRINCIPAL,
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4. Dr. V. Vanajakshamma, - Member
   Controller of Examinations,
   SVIMS.

Department of General Medicine:

5. Dr.Alladi Mohan, - Member
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   Department of Medicine
   SVIMS-SPMCW.

6. Dr K. Ravi, - External Export
   Professor & Head,
   Bangalore Medical College and Research Institute,
   Bangalore.

7. Dr.V.A.Kothiwale, - External Export
   Professor, Department of Medicine,
   Registrar, KLE Academy of Higher Eduation and Research
   Belgavi.

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18. Dr.Arun, - External Export
    Professor & HoD, Dept. of Orthopaedics,
    Sri Devaraj Urs Medical Collge, Tamaka,
    Kolar, Karnataka.

19. Dr. Hari Babu - External Export
    Professor & HoD, Dept. of Orthopaedics,
    SVMC, Tirupati.

PREAMBLE

The undergraduate medical curriculum of the Medical Council of India/NMC is created to ensure that the medical doctor who emerges from the MBBS training program is capable of assisting the nation to achieve its goal of health for all. In addition, it aspires to ensure that the "graduate" meets or exceeds global bench-mark in knowledge, attitude, skills and communication. This intent is at the core of the Graduate Medical Regulations, 2019.

The Graduate Medical Regulations, 2019 represents the first major revision to the medical curriculum since 1997 and hence incorporates changes in science and thought over two decades. A significant advance is the development of global competencies and subject-wise outcomes that define the roles of the "Indian Medical Graduate". Learning and assessment strategies have been outlined that will allow the student to achieve these competencies/outcomes. Effective appropriate and empathetic communication, skill acquisition, student-doctor method of learning, aligned and integrated learning and assessment are features that have been given additional emphasis in the revised curriculum.

The revised curriculum is to be implemented by all medical colleges under the ambit of Medical Council of India/NMC from August 2019. The roll out will be progressive over the duration of the MBBS course.

This document represents a compilation of the resource material that was used in the Curricular Implementation Support Program (CISP) and has attempted to provide a stepwise and comprehensive approach to implement the curriculum. It details the philosophy and the steps required in a simple and richly illustrated manner. Teaching slide decks, faculty guides and online resource material supplement this document. The document is to be used in conjunction with the Competency document, AETCOM module and the GMR document.

This draft syllabus has been created from the list of competencies mentioned in the Competency Based Curriculum (CBC) developed by the Medical Council of India /NMC for the First MBBS Batch of 2019-20.

The content to be covered under each topic has been mentioned as bulleted points. For each topic, competency numbers have been mentioned as per the competency list mentioned above. The content that is related to non-core competencies (these competencies need not be assessed in the summative examination) have been marked by an asterisk (*).

Guidelines have been suggested for the various teaching and learning (TL) methods along with the time allotted for them in the curriculum. Relevant information has also been provided about the recent additions in the CBC, namely integration, early clinical exposure (ECE), self directed learning (SDL), the AETCOM (attitude ethics and communication skills) modules and electives. Regardless of the TL methods that are used, it is expected that they follow adult learning principles. The regulations related to the internal examination and university examination have been mentioned along with detailed suggestions for the conduct of the theory, practical and viva voce examinations. The document ends with a list of learning resources that both the students and teachers can utilize.

NEW REGULATIONS FOR MBBS DEGREE COURSE

SECTION I

Introduction to CBME based curriculum:

The Medical Council of India /NMC has revised the undergraduate medical education curriculum so that the Indian Medical Graduate is able to recognize ″health for all″ as a national goal and should be able to fulfil her societal obligations. The revised curriculum has attempted to enunciate the competencies the student must be imparted and should have learnt, with clearly defined teaching learning strategies and effective methods of assessment. Communicating effectively and sympathetically with patients and their relatives has been visualized as a core area of the revised curriculum. These and other goals identified in the curriculum are to be implemented in all medical colleges under the ambit of Medical Council of India/ NMC from August 2019 and to smoothen this process Guidelines have been prepared for its effective implementation. In response to the need for a seamless introduction of the curriculum into the Undergraduate system, all medical colleges need to upgrade the teaching-learning skills of their faculty. Earlier experience with implementation of curricular changes suggests that a carefully managed, sustainable approach is necessary to ensure that every college has access to the new skills and knowledge enunciated in the new curriculum. Faculty training and development thus assumes a key role in the effective implementation and sustenance of the envisaged curricular reforms.

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 student 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 her social obligations towards realization of this goal.

b. Learn every aspect of National policies on health and devote her 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 her position as a member of the health team at the primary, secondary or tertiary levels, using her clinical skills based on history, physical examination and relevant investigations.

B. Be competent to practice preventive, promotive, curative, palliative and rehabilitative medicine in respect to the commonly encountered health problems.

C. Appreciate rationale for different therapeutic modalities; be familiar with the administration of "essential medicines" and their common adverse effects.

D. Be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

E. Possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

F. Be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:

I. Family Welfare and Maternal and Child Health (MCH)
II. Sanitation and water supply
III. Prevention and control of communicable and non-communicable diseases
IV. Immunization
V. Health Education
VI. Indian Public Health Standards (IPHS), at various levels of service delivery
VII. Bio-medical waste disposal
VIII. Organizational and/or institutional arrangements.

G. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, hospital management, inventory skills and counseling.

H. Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.

I. Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

J. Be competent to work in a variety of health care settings. 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.

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

Goals and Roles for the Student:

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

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

compassion.

- Leader and member of the health care team and system with capabilities to collect analyze, synthesize and communicate health data appropriately.
- Communicator with patients, families, colleagues and community.
- Lifelong student committed to continuous improvement of skills and knowledge.
- 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 as listed in clause 2, 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, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral 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 frame works.
- 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:
    I. Disease prevention,

II. Health promotion and cure,
III. Pain and distress alleviation, and
IV. 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 outcomes.
- Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- 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 student 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 listed in sub-clause 2 and 3 above:

- There shall be a "Foundation Course" to orient medical students to MBBS programme, and provide them with requisite knowledge, 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 student's interest and eliminate redundancy and overlap.
- Teaching-learning methods shall be student 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 student 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.

INTEGRATION

Integration is a learning experience that allows the student to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application. It is recommended that the principles of integration be applied to such an extent that the curriculum retains the strengths of subject based education and assessment, while also providing experiences that will allow students to integrate concepts. Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). As far as possible, it is desirable that teaching/learning occurs in each phase through study of organ systems or disease blocks in order to align the learning process. Clinical cases must be used to integrate and link learning across disciplines.

Alignment implies the teaching of subject material that occurs under a particular organ system / disease concept from the same phase in the same time frame i.e., temporally. It is recommended that alignment be the

major method to be followed, allowing similar topics in different subjects to be learnt separately but during the same time frame.

Integration implies that concepts in a topic / organ system that are similar, overlapping or redundant are merged into a single teaching session in which subject based demarcations are removed. For the purpose of this document, topics from other phases that are brought into a particular phase for the purpose of reinforcement or introduction will also be considered as integrated topics. A linker is a session that allows the student to link the concepts presented in an aligned topic. In a small proportion (not to exceed 20% of the total curriculum) an attempt can be made to share topics or correlate topics by using an integration or linker session. The integration session most preferred will be a case-based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed.

Care must be taken to ensure that achievement of phase-based objectives is given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary. As much as possible, the necessary correlates from other phases must also be introduced while discussing a topic in a given subject. Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year. Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the student has internalized and integrated the concept and its application.

In summary:

Horizontal integration can be facilitated by the following methods.

- Alignment of timetables of the three first year subjects wherever possible
- Consciously connecting what is learned in one subject with the other subjects during teaching and learning activities
- Joint sessions by all the three departments which may be in the form of lectures, case-based learning or seminars.

Vertical integration can be facilitated by the following methods.

- Discussing relevant clinical case scenarios during teaching and learning sessions
- Guest lectures by clinicians or para-clinical faculty
- Hospital visits to see relevant patient presentations, radiological imaging and operative procedures.

AETCOM MODULE:

The overall goal of undergraduate medical education program as envisaged in the revised Graduate Medical Education Regulations - 2019 is 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. In order to fulfil this goal, the IMG must be able to function appropriately, ethically and effectively in her roles as clinician, leader and member of the health care team and system, communicator, lifelong student and as a professional. In order to effectively fulfil the above-mentioned roles, the IMG must obtain a set of competencies at the time of graduation. In order to ensure that training is in alignment with the goals and competencies, Medical Council of India /NMC has proposed new teaching learning approaches including a structured longitudinal programme on attitude, ethics and communication

Nine AETCOM modules will be taught in Third phase-II and the following departments will be responsible for implementation and assessment of these modules.

- **MODULE 4.1 - Orthopaedics**
- **MODULE 4.2 - General Surgery**
- **MODULE 4.3 - General Surgery**
- **MODULE 4.4 - Paediatrics**

- **MODULE 4.5 - General Medicine**
- **MODULE 4.6 - General Medicine**
- **MODULE 4.7 - OBG**
- **MODULE 4.8 - General Medicine**
- **MODULE 4.9 - OBG**

GUIDELINES: Reflection writing to be recorded in practical record/log book in each subject.

ELECTIVES

An elective can be defined as a brief course made available to the student during her undergraduate study period, where she can choose from the available options depending upon their interest and career preferences. Introduction of electives in undergraduate medical curriculum is an important step for providing flexible choices in student's areas of interest, direct individual experience and this will help in developing self- directed learning skills. The range of electives that can be offered to the students will depend upon the local logistics and resources available for the medical institutions (within or nearby). These can be in a wide range that can include electives from educational, community and research-project related, directly or indirectly with health care, super- specialty clinical electives and specific laboratory electives.

To ensure that there is an immersive learning experience and greater attention to the learner, each preceptor identified must be tagged with only a minimum number of students. Therefore, it is important to identify a sufficient number of preceptors, laboratory positions, and existing research projects (for Block 1) and specialties and community clinics, for Block 2. Input from both faculty and students can be sourced to identify electives that are feasible and desired.

If required and feasible, collaboration with external resources including central and private research institutes and laboratories, hospitals and clinics can be done ensuring that the quality and principles outlined in section 1 are maintained. Student-initiated external rotations may be permitted as long as they do not violate institutional rules and conform with the broad principles outlined. Rotations outside the city will require prior permission from the Medical Council of India. Examples (neither exhaustive nor comprehensive) of block 1 and block 2 electives are provided in the table.

Block 1	Block 2
Laboratory Experience:	**Clinical Specialty Experience:**
Pathology	Emergency room
Microbiology	CICU (Dept. of Cardiology)
Biochemistry	Psychiatry
Endocrinology lab	Dermatology
Pharmaco-vigilance and clinical pharmacology	Oncology
Rural Community Health center	Endocrinology and Diabetes
Research	Nephrology
Student initiated research	Neurosurgery
Participation in faculty research	Cardiology / Cardiac Surgery
Community and epidemiologic surveys	GI surgery
Virology	Neurology
Blood Bank	Primary Health Center

The list of available learning experiences for each block and the names of preceptors for each should be available to students on the institutional notice board at least three months before the commencement of the electives. A process for submitting applications for both blocks with choices should be made available to the students. Written information on each learning experience must be available for students to examine and make an informed choice.

Method:

- Two months are allotted for elective rotations after completion of the exam at end of the third MBBS Part I examination and before commencement of third MBBS Part II.
- It is compulsory for students to do an elective. The protected time for electives should not be used to make up for missed clinical postings, shortage of attendance or any other purpose.
- The student shall rotate through two elective blocks of 04 weeks each.
- Block 1 shall be done in a pre-selected preclinical or para-clinical or other basic sciences laboratory OR under a faculty researcher in an ongoing research project. During the electives regular clinical postings shall continue.
- Block 2 shall be done in a clinical department (including specialties, super-specialties, ICUs, blood bank and casualty) from a list of electives developed and available in the institution OR as a supervised learning experience at a rural or urban community clinic.
- Institutions will determine the number and nature of electives beforehand, names of the supervisors, and the number of students in each elective based on the local logistics, available resources and faculty.
- Each institution will develop its own mechanism for allocation of electives.
- It is preferable that electives are made available to the students in the beginning of the academic year.
- The student must submit a learning logbook based on both blocks of the elective.
- 75% attendance in the electives and submission of logbook maintained during elective is mandatory for eligibility to appear in the final MBBS examination.
- Students will be assessed in between and at the end of each elective posting.
- Feedback, comments and /or grades about the student's performance by the faculty mentor can be documented with the help of a checklist where both professional and academic attributes can be included.
- The performance of the students in the electives will also contribute towards internal marks.
- Student's feedback about the elective also needs to be documented in a structured format. This will help in gathering student's perceptions about various aspects of elective posting and help in program evaluation.
- Institutions may use part of this time for strengthening basic skill certification. The list of electives offered by the institution must be displayed for students.
- Each elective should have well defined objectives, expected outcomes, expectations from the students, their assessment mechanism and faculty guide or mentors.
- A faculty mentor should guide the student, monitor their learning activities and assess the students' performance with regular feedback.

Examples of general electives include bioinformatics, tissue engineering / processing, computer and computer applications, genetics, human nutrition, laboratory sciences, research methodology, ethics and medical education.

SECTION II

REGULATIONS GOVERNING MBBS DEGREE COURSE
[Eligibility for Admission, Duration, Attendance and Scheme of Examination]

1. **ELIGIBILITY**
   As per guidelines of Medical Council of India / NMC.

2. **DURATION OF THE COURSE:**
   The duration of the MBBS course shall be 4 ½ academic years followed by one year compulsory rotating internship. Normally the MBBS course shall commence on the 1st Oct of an academic year.

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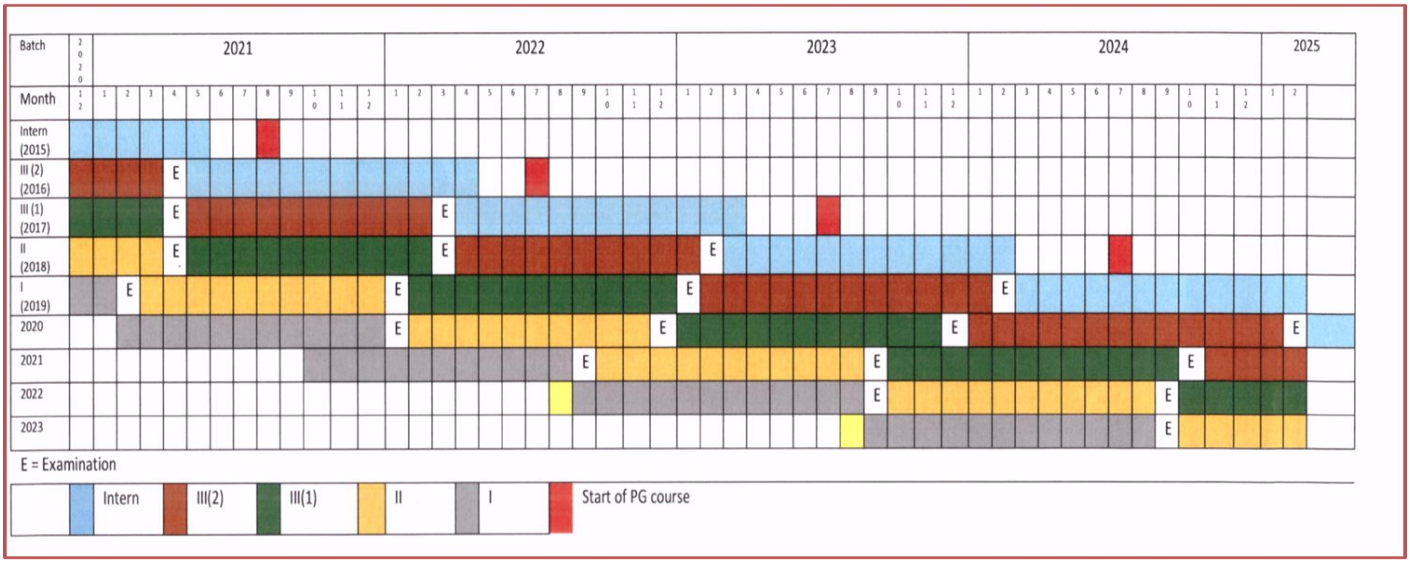

MONTH-WISE SCHEDULE FOR NEW CBME COURSE FOR MBBS BATCH 2021-22 JOINED IN FEB-MAR 2022

MBBS	1	2	3	4	5	6	7	8	9	10	11	12
2022	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	months	14TH-1	2	3	4	5	6	7	8	9	10	11
2023	12	Exam, Results	2ND PROF-1	2	3	4	5	6	7	8	9	10
2024	11	12	Exam, Results	3RD 1ST-1	2	3	4	5	6	7	8	9
2025	10-exam in 2nd half	11-Electives	12	13	14	15	16	17	18	19	20	21
2026	22	23	24	25- NEXT & Univ. final practical, Results	INTERNSHIP-1	2	3	4	5	6	7	8
2027	9	10	11	12	NEXT, counselling	counselling	PG					

ACADEMIC CALENDER FOR MBBS BATCH(2021-22) ADMITTED IN FEB-MAR 2022

Professional year	Time frame	Months available (Teaching + Exam)	Comparison with GMER 2019
1st	14th Feb '22 to 31st Jan '23, Exam - Feb.	11.5 months (incl. F.C.) Exam , Result = 1 month	14 months (incl. one month FC)
2nd	1st March,'23 to 29th Feb,'24 Exam- March, '24	12 months Exam , Result = 1 month	12 months
3rd(III-part-1)	1st April,'24 to 15th Jan,'25, Exam – till 31th Jan, '25	9.5 months Exam - 15 days (FMT, Community Med)	13 months
Electives + results	Block A–(first half) Feb, '25 Block B–(second half) Feb, '25	1 month	2 months
4th(III-part-2)	1st March,'25 to 31st March, '26	13 months NeXT (theory) – April, '26 Univ. (practical) – April, '26	13 months
Internship	1st May, '26 to 30th April '27,	12 months	12 months
NeXT & Counselling	May, June, '27	Counselling before 15th June	1 month
PG	July, '27		

DISTRIBUTION OF SUBJECTS BY PROFESSONAL PHASE

Phase and Year of MBBS Training	Subjects and new teaching elements	Duration	University examination
First professional MBBS	Foundation course (1month) Human Anatomy, Physiology& Biochemistry Introduction of Community Medicine, Humanities Early Clinical Exposure Attitude. Ethics and Communication Module (AETCOM)	1+13 months	**First professional MBBS**
Second professional MBBS	Pathology, Microbiology, Pharmacology, Forensic Medicine And Toxicology Introduction to clinical subjects including community Medicine Clinical postings AETCOM	12 months	**Second professional MBBS**
Third professional MBBS-part I	General Medicine ,General Surgery, OBG, Paediatrics, Orthopaedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory Medicine, Radiodiagnosis & Radiotherapy, Anaesthesiology Clinical Subjects /postings AETCOM	12 months	**Third professional MBBS-part I**
Electives	Electives ,skills and assessment	2 months	
Third professional MBBS-part II	General Medicine ,Paediatrics, General Surgery, Orthopaedics, Obstetrics and Gynaecology, including Family welfare and allied Specialties Clinical Postings /subjects AETCOM	13 months	**Third professional MBBS-part II**

3. ATTENDANCE:

Every candidate should have attendance not less than 75% of the total classes conducted in theory and not less than 80% of the classes conducted in practical in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examination. 75% attendance in Professional Development Programme (AETCOM Module) is required for eligibility to appear for final examination in each professional year (vide Medical Council of India/NMC Notification on Graduate Medical Education (Amendment) Regulations 2019, published in the Gazette of India Part III, Section 4, Extraordinary issued on 4th November 2019).

- In subjects that are taught in more than one phase – the student 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 e.g., General Surgery and allied branches), the candidate must have 75% attendance in each subject and 80% attendance in each clinical posting.
- Students who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination.

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

2. TEACHING HOURS:

3rd Professional Part-II teaching hours

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

* 25% of allotted time of third professional shall be utilized for integrated learning with pre-clinical and para-clinical subjects and shall be assessed during the clinical subjects examination. This allotted time will be utilized as integrated teaching by para-clinical subjects with clinical subjects (as Clinical Pathology, Clinical Pharmacology and Clinical Microbiology).

** The clinical postings in the third professional part II shall be 18 hours per week (3 hrs per day from Monday to Saturday).

***Hours from clinical postings can also be used for AETCOM modules.

Clinical Postings Hours:

3rd Professional MBBS Part-II Clinical postings:

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

*In four of the eight weeks of electives, regular clinical postings shall be accommodated.

Clinical postings may be adjusted within the time framework.

1 This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I).

2 This includes maternity training and family welfare (including Family Planning).

3This posting includes Physical Medicine and Rehabilitation.

4 This posting includes Radiotherapy, wherever available.

5. RE-ADMISSION AFTER DISCONTINUATION OF STUDY:

Every student shall attend her classes (theory, practical and clinical) on all working days unless the leave of absence is sanctioned by the principal/dean. If a student absents continuously for a period of 91 days or more, before one year after discontinuation and seeks permission to attend the course, her application shall be addressed to the dean of the college and shall be forwarded to the registrar while permitting the student to rejoin. The vice-chancellor may grant leave of absence applying such conditions as deemed necessary. Candidates who are absent for continuous period of one year or more without permission shall be deemed to have forfeited the admission and her studentship shall stand cancelled without any further notice.

6. MIGRATION / TRANSFER OF CANDIDATES:

As per MCI/NMC Guidelines

7. VACATION:

The vacation for the students shall be 30 days in each academic year which includes 15 days during summer, one week during Sankranthi and one week during Dussehra, subject to update from NMC.

SCHEME OF EXAMINATION

8. INTERNAL ASSESSMENT:

General guidelines:

- Regular periodic examinations shall be conducted throughout the course. There shall be minimum three internal assessment examinations in each Para-clinical subject and no less than two examinations in each clinical subject in a professional year.
- At end of posting, clinical assessment shall be conducted for each clinical posting, in each professional year
- The third internal examination should be conducted on the lines of the university examination.
- When subjects are taught in more than one phase, the internal assessment must be done in each phase and must contribute proportionately to final assessment. For example, General Medicine must be assessed in second Professional, third Professional Part I and third Professional Part II, independently.
- Out of three internal exams conducted, the marks secured in the Pre-final exams shall be taken into account along with the best among the other internal assessment. Average of these two marks should be calculated and submitted to the university.

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		Formative assessment	
(Part completion tests/	5	Record	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2; 75-79%-1;

Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Example for calculation of internal assessment marks:

Theory:

1st Internal (100)	2nd Internals (100)	Pre-final (100+100)
70	60	70+70
70/100 x 40 (to convert out of 40)=28/40		140/200 x 40(to convert out of 40)=28/40

Among the 1st and 2nd internal assessment marks, best of the two is taken and Pre-final marks is compulsorily taken into account.

28+28/2=28/40 (average of 1st internal assessment marks and pre-final marks)
28+8 (Part completion test + attendance) =36/50
36/ 50(72% - minimum 40% required for eligibility in theory)

Practicals: 22/ 30
Viva: 8/10
Practicals + viva: 22+8= 30/40

30+8 (logbook + Record) = 38/50 (76% - minimum 40% required for eligibility in practicals)
Theory + practical= 36+38 =74/100 (74% - minimum 50%, theory + practical, required for eligibility to appear in University exam)

- Students must secure not less than 40 % marks in theory and practical separately and not less than 50% marks of the total marks (combined in theory and practical) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
- A candidate who has not secured requisite aggregate in the internal assessment may be subjected to remedial measures by the institution. If she successfully completes the remediation measures, she is eligible to appear for University Examination. Remedial measures shall be completed before submitting the internal assessment marks online to the university.
- Internal assessment marks will reflect under separate head in the marks card of the university examination. The internal assessment marks (theory/practical) will not be added to the marks secured (theory/practical) in the university examination for consideration of pass criteria.
- The results of Internal Assessment should be displayed on the notice board within a 1-2 weeks of the test.
- Students must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

9. UNIVERSITY EXAMINATION

Examination schedule

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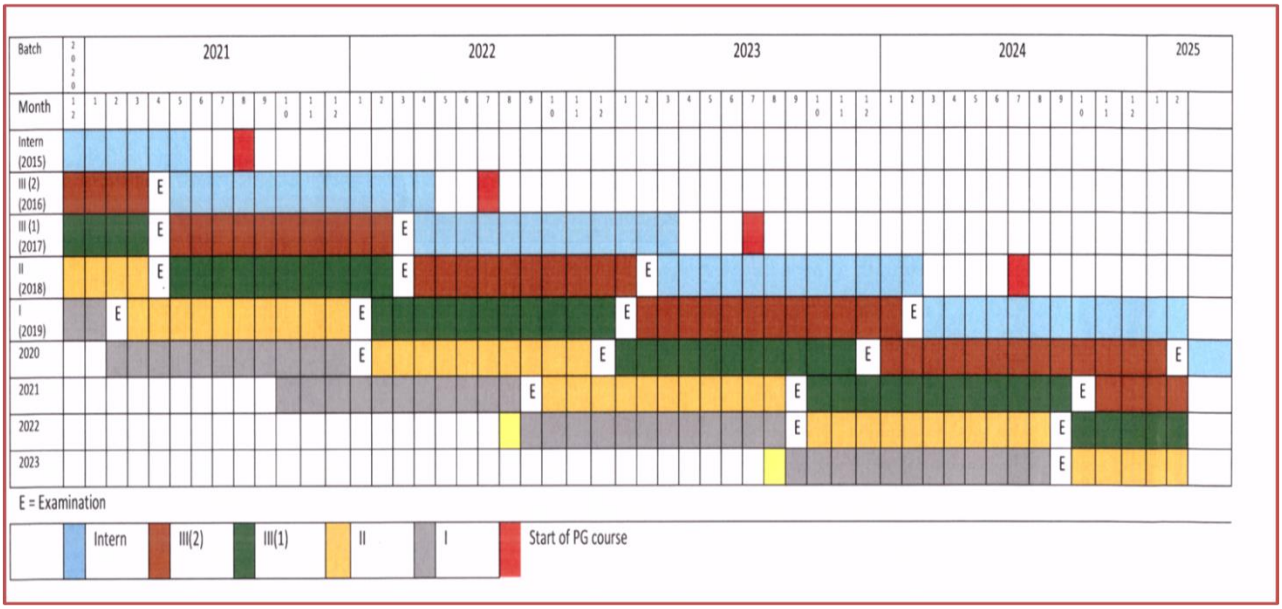

General guidelines:

- University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

- Nature of questions will include different types such as structured essays (Long Answer Questions - LAQ), Short Essays and Short Answers Questions (SAQ) and objective type questions (e.g. Multiple Choice Questions-MCQ). Marks for each part should be indicated separately. MCQs shall be accorded a weight age of not more than 20% of the total theory marks. In subjects that have two papers, the student must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass. There are no negative mark for wrong answer.

- Practical/clinical examinations will be conducted in the laboratories/ hospital wards. The objective will be to assess proficiency and skills to conduct experiments, clinical examination, interpret data and form logical conclusion, wherever applicable.

- There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.

- **A student shall not be entitled to graduate after *10 years of her joining of the first part of the MBBS course.**

- **A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial attendance at any University examination shall be counted as an availed attempt.**

- **3rd PROFESSIONAL MBBS Part-II EXAMINATION:**

  The 3rd professional MBBS Part-II examination shall be held at the end of 3rd professional MBBS Part-II training (13 months), in the subjects of General Medicine, General Surgery, OBG, Paediatrics & Orthopaedics.

Phase II

Table: Examination components, Subjects and Distribution of Marks

THEORY	Medicine	General Surgery (Orthopedics)	OBG	Pediatrics
Written Paper				
No. of Papers & Maximum Marks for each paper.	**2×100=200**	**2×100=200**	**2×100=200**	**1x100=100**
Total theory	**200**	**200**	**200**	**100**
PRACTICAL				
1. Practical exam	**80**	**80**	**80**	**80**
2. Viva-voce	**20**	**20**	**20**	**20**
Total practical	**100**	**100**	**100**	**100**

Internal assessment*			
Theory (maximum marks)	**Marks**	**Practicals**	**Marks**
Theory paper	40	Practical exam (30 marks) and viva- voce(10 marks)	40
Formative assessment		Formative assessment	
(Part completion tests/	5	Record	5
Attendance	5	Log Book	5
Total	**50**		**50**

Grading for attendance - 95-100%-5; 90-94%-4; 85-89%-3; 80-84%-2 83-75%-1 Proposal

*** Internal assessment marks will reflect under separate head in the marks card of the university examination.**

Type number of questions and distribution of marks for written paper

TYPES OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
Long essay	**2**	**15**
Short essay	**10**	**5**
MCQs	**20**	**1**

10. SUBMISSION OF LABORATORY/ CLINICAL RECORD.

At the time of Practical Examination each candidate shall submit to the Examiners her laboratory record duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

11. ELIGIBILITY TO APPEAR FOR PROFESSIONAL EXAMINATIONS.

The following criteria to be met by the students to be eligible for the university exams:

a. Shall have undergone satisfactorily the approved course of study in the subject/subjects for the prescribed duration.
b. Shall have attended not less than 75% of the total classes conducted in theory and not less than 80% of the total classes conducted in practical separately to become eligible to appear for examination in that subject/subjects.
c. Minimum of 40% marks to be obtained **separately** in theory and practical and atleast 50% marks of the total marks **combined** in theory and practical assigned for internal assessment is to be obtained in a particular subject to appear for university exam.
d. Students must have completed the required certifiable competencies for that phase of training and completed the logbook appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

12. Appointment of Examiners:

- Person appointed as an examiner in the particular subject must have at least five years of total teaching experience from the date of joining as assistant professor after obtaining postgraduate degree in the subject in a college affiliated to a recognized/approved/permitted medical college.
- For the Practical/ Clinical examinations, there shall be at least four examiners for 100 students, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner will act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained. Where candidates appearing are more than 100, two additional examiners (one external & one internal) for every additional 50 or part there of candidates appearing, be appointed.
- In case of non-availability of medical teachers, approved teachers without a medical degree (engaged in the teaching of MBBS students as whole-time teachers in a recognized medical college), may be appointed examiners in their concerned subjects provided they possess requisite doctorate qualifications and four years teaching experience (as assistant professors) of MBBS students. Provided further that the 50% of the examiners (Internal & External) are from the medical qualification stream.
- External examiners may not be from the same University.
- The internal examiner in a subject shall not accept external examinership for a college from which external examiner is appointed in her subject.
- A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college.
- External examiners shall rotate at an interval of 2 years.
- There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.
- All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.
- All theory paper assessment should be done as central assessment program (CAP) of concerned university.
- Internal examiners should be appointed from same institution for unitary examination in same institution.

For pooled examinations at one center approved internal examiners from same university may be appointed.

- The grace marks up to a maximum of five marks may be awarded at the discretion of the University to a student for clearing the examination as a whole but not for clearing a subject resulting in exemption.

13. CRITERIA FOR PASS.

For declaration of pass in any subject in the University examination, a candidate shall pass both in Theory and Practical examination components separately as stipulated below:

- The Theory component consists of marks obtained in University Written papers only. For a pass in theory, a candidate must secure at least 40% marks in each of the two papers with minimum 50% of marks in aggregate (both papers together).
- For a pass in practical examination, a candidate shall secure not less than 50% marks in aggregate, i.e., marks obtained in university practical examination and viva voce added together.
- **Internal assessment marks will reflect as a separate head of passing at the university examination.**

A candidate not securing 50% marks in aggregate in Theory or Practical examination + viva in a subject shall be declared to have failed in that subject and is required to appear for both Theory and Practical again in the subsequent examination in that subject.

14. DECLARATION OF CLASS

a. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of **grand total marks (university examination)** prescribed will be declared to have passed the examination with distinction.

b. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in First Class.

c. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of **grand total marks (university examination)** prescribed will be declared to have passed the examination in Pass Class.

d. A candidate passing a university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by her in the examination.

Note: Please note fraction of marks will not be rounded off for clauses (a), (b) and (c)

15. AWARD OF DEGREE:

The university on satisfactory completion of the compulsory internship shall award the degree.

Department of General Medicine

The broad goal of undergraduate training in General Medicine is to impart basic knowledge, skill and behavioral attitudes to the students to function effectively as the first contact primary care physician.

Respiratory medicine

- To impart comprehensive knowledge, skills, attitude and communication to the undergraduate medical students in Respiratory medicine.
- To identify respiratory health issues and to manage or refer at appropriate time.
- To create respiratory health awareness and to reduce the stigma associated with chronic respiratory illness
- To nurture students and mould them as an ideal Indian Medical Graduate who should be a good clinician, communicator, lifelong learner, professional, leader and member of health care team,

Psychiatry

- To impart comprehensive knowledge, skills, attitude and communication to the undergraduate medical students in psychiatry.
- To identify mental health issues and to manage or refer at appropriate time.
- To create mental health awareness and to reduce the stigma associated with mental illness
- To nurture students and mould them as an ideal Indian Medical Graduate who should be a good clinician, communicator, lifelong learner, professional, leader and member of health care team,

Dermatology, Venereology and Leprosy

The broad goal of the teaching of Undergraduate students in Dermatology, Venereology and Leprosy is to produce graduates capable of independently diagnosing and clinically evaluating basic skin lesions and further investigating them

The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practice of Dermatology, Venereology & Leprosy, as a part of General Medicine through exposure to general and auto immune skin disorders.

The student must appreciate the medical management and basic foundations underlying the care of patients with dermatological complaints

COMPETENCIES

GENERAL MEDICINE

- The student must demonstrate ability to do the following in relation to common Medical problems of the adult in the community: Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
- Competently interview and examine an adult patient and make a clinical diagnosis,
- Appropriately order and interpret laboratory tests,
- Initiate appropriate cost-effective treatment based on an understanding of the rational drug Prescriptions,

medical interventions required and preventive measures,

- Follow up of patients with medical problems and refer whenever required,
- Communicate effectively, educate and counsel the patient and family,
- Manage common medical emergencies and refer when required,
- Independently perform common medical procedures safely and understand patient safety issues.

Respiratory Medicine

The student must demonstrate:

- Knowledge of common chest diseases, their clinical manifestations, diagnosis and management,
- Ability to recognize, diagnose and manage pulmonary tuberculosis as contemplated in National
- Tuberculosis Control programme,
- Ability to manage common respiratory emergencies in primary care setting and refer appropriately.

Psychiatry

The undergraduate must demonstrate: (from MCI regulations amended up to 2019)

- History taking in patients with common mental disorders
- Mental status examination in patients with common mental disorders
- Approach to diagnosis in patients with common mental disorders

- Treatment or referral plan in patients with common mental disorders
- Integration: The teaching should be aligned and integrated horizontally and vertically in understanding the mental disorders with physiology, pharmacology, forensic medicine, community medicine, general medicine, obstetrics and pediatrics.

Dermatology, **Venereology & Leprosy**

The undergraduate student must demonstrate:

- Understanding of the principles of diagnosis of diseases of the skin, hair, nail and mucosa,
- Ability to recognize, diagnose, order appropriate investigations and treat common diseases of the
- skin including leprosy in the primary care setting and refer as appropriate,
- A syndrome approach to the recognition, diagnosis, prevention, counseling, testing and
- ManagementofcommonsexuallytransmitteddiseasesincludingHIVbasedonnationalhealth priorities,
- Ability to recognize and treat emergencies including drug reactions and refer as appropriate.

OBJECTIVES

General Medicine

Knowledge:

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

- Diagnose common medical disorders with special reference to infectious diseases, nutritional disorders and environmental disorders.
- Manage various clinical disorders including therapy with medications, with the sound knowledge of their dosage, side effects, toxicity, interactions, indications and contraindications.
- Order proper diagnostic and investigative procedures and able to interpret them and apply to the clinical problem solving.
- Provide first level management of acute medical emergencies promptly and efficiently and decide the timing and level of referral if necessary.
- Recognize geriatric disorders and their management.
- Recognize women's health and adolescent health problems and treat them.
- Understand and take part in National Health Programs in prevention and management of various medical diseases.

Skill

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

- Acquire clinical skills (history taking, clinical examination and laboratory data interpretation) to diagnose common medical disorders and acute medical emergencies;
- Refer a patient to secondary and / or tertiary level of health care after having given primary care;
- Perform simple laboratory tests like hemogram, stool, urine, sputum, and biological fluid examination.
- Assist common bedside procedures like pleural tap, lumbar puncture, bone marrow aspiration and biopsy, liver biopsy etc.
- Develop communication skills for counseling.

Attitude and Communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

- With community medicine to take part in the implementation of important current National Health Programmes and also to view and treat the patient in his/her total physical, social and economic millieu :
- With other relevant academic inputs which provide scientific basis of clinical medicine e.g. anatomy, physiology, biochemistry, microbiology, pathology and pharmacology.

Respiratory Medicine

At the end of the undergraduate medical student will be able to:

Knowledge

- To understand the basics of clinical assessment, diagnosis and treatment of Tuberculosis including MDR,

XDR TB patients.

- To know about the prevalence of common respiratory diseases
- To know the theoretical basis of diagnosis and management of obstructive airway diseases
- To know the theoretical basis of respiratory manifestations of General medical conditions
- To know the theoretical basis of Pharmacology of drugs used in respiratory medicine

Skills

- To elicit detailed history from patients and informants
- To perform Respiratory examination in patients with Respiratory disorders

Attitude and communication

- To establish rapport with patients and their family members
- To establish therapeutic alliance with patients
- To exhibit competencies in verbal, nonverbal and written communication
- Attitude to be a lifelong leaner.

Integration

- At the end of the integrated teaching the student shall acquire an integrated knowledge of Respiratory disorders and its management
- To search the medical literature, including electronic databases, for enhancing the knowledge and skills in Respiratory medicine

Psychiatry

Knowledge:

At the end of the undergraduate medical student will be able to:

- To know about the classification of psychiatric disorders
- To understand the symptoms of common mental disorders in psychiatry
- To know the theoretical basis of differentiating psychiatric disorders from organicity
- To know the theoretical basis of psychiatric manifestations of General medical conditions
- To know the theoretical basis of Substance use disorders
- To know about psychological, pharmacological and somatic interventions.

Skills

- To elicit detailed psychiatric history of common mental disorders from patients and informants
- To perform mental status examination in patients with common mental disorders

Attitude and communication

- To establish rapport with patients and their family members
- To exhibit competencies in verbal, non verbal and written communication
- Attitude to be a lifelong leaner.

Integration

- At the end of the integrated teaching the student shall acquire an integrated knowledge of mental disorders and its management
- To search the medical literature, including electronic databases, for enhancing the knowledge and skills in Psychiatry

Dermatology, **Venereology & leprosy**

Skills

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

- Explain the basic skin lesions clinically and Bed side investigations for the same.
- Clinical Evaluations and bedside Demonstration for Laboratory diagnosis-
  - KOH MOUNT for Fungus
  - Gram stain
  - Scraping and mounting for infestations
- Clinical evaluations of lesions and nerve examinations for Hansens Disease with SSS (slit skin smear) and skin biopsy.
- Describe the various cutaneous findings and clinical aspects of conditions like systemic lupus erythematosus, Scleroderma, Dermatomyositis etc.

Attitude and Communication

- Communication with empathy to patients & patient's attenders.
- To counsel & obtain informed consent from patient & patients attenders.

Integration

The teaching should be aligned and integrated horizontally and vertically in order to emphasize the basis of diseases of the skin, sexually transmitted diseases and leprosy and to provide an understanding that skin diseases may be a manifestation of systemic disease.

Theory Syllabus: Topic and the competencies
General Medicine

Number	Unit 1 - Heart Failure
IM1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory
IM1.2	Describe and discuss the genetic basis of some forms of heart failure
IM1.3	Describe and discuss the aetiology microbiology pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis
IM1.4	Stage heart failure
IM1.5	Describe discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure
IM1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations
IM1.7	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia arrhythmias, anemia, thyrotoxicosis, dietary factors drugs etc.
IM1.8	Describe and discuss the pathogenesis and development of common arrythmias involved in heart failure particularly atrial fibrillation

IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever
IM1.16	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis
IM1.17	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures
IM1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy
IM1.24	Describe and discuss the pharmacology of drugs including indications, contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides
IM1.25	Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease
IM1.28	Enumerate the causes of adult presentations of congenital heart disease and describe the distinguishing features between cyanotic and acyanotic heart disease
IM1.29	Elicit document and present an appropriate history, demonstrate correctly general examination, relevant clinical findings and formulate document and present a management plan for an adult patient presenting with a common form of congenital heart disease

Number	**Unit 2 - Acute Myocardial Infarction/ IHD**
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease
IM2.2	Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD
IM2.3	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis
IM2.4	Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD
IM2.5	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes
IM2.13	Discuss and enumerate the indications for and findings on echocardiogram, stress testing and coronary angiogram
IM2.14	Discuss and describe the indications for admission to a coronary care unit and supportive therapy for a patient with acute coronary syndrome
IM2.15	Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation
IM2.16	Discuss and describe the indications for acute thrombolysis, PTCA and CABG
IM2.17	Discuss and describe the indications and methods of cardiac rehabilitation
IM2.18	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia
IM2.19	Discuss and describe the pathogenesis, recognition and management of complications of acute coronary syndromes including arrhythmias, shock, LV dysfunction, papillary muscle rupture and pericarditis
IM2.20	Discuss and describe the assessment and relief of pain in acute coronary syndromes
IM2.23	Describe and discuss the indications for nitrates, anti platelet agents, gpIIb IIIa inhibitors, beta blockers, ACE inhibitors etc in the management of coronary syndromes

Number	**Unit 3 - Pneumonia**
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia
IM3.2	Discuss and describe the aetiologies of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia
IM3.15	Describe and enumerate the indications for hospitalisation in patients with pneumonia
IM3.16	Describe and enumerate the indications for isolation and barrier nursing in patients with pneumonia
IM3.17	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and indications for ventilation

Number	**Unit 4 - Fever and febrile syndromes**

IM4.1	Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile response
IM4.2	Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g.Dengue, Chikungunya, Typhus)
IM4.4	Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies
IM4.6	Discuss and describe the pathophysiology and manifestations of malaria
IM4.7	Discuss and describe the pathophysiology and manifestations of the sepsis syndrome
IM4.8	Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host, neutropenic host, nosocomial host and a host with HIV disease
IM4.11	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC
IM4.16	Enumerate the indications and describe the findings in tests of inflammation and specific rheumatologic tests, serologic testing for pathogens including HIV, bone marrow aspiration and biopsy
IM4.18	Enumerate the indications for use of imaging in the diagnosis of febrile syndromes
IM4.21	Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner
IM4.22	Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance

Number	**Unit 5 - Liver disease**
IM5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia
IM5.2	Describe and discuss the aetiology and pathophysiology of liver injury
IM5.3	Describe and discuss the pathologic changes in various forms of liver disease
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis
IM5.5	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease
IM5.6	Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury
IM5.8	Describe and discuss the pathophysiology, clinical evolution and complications cholelithiasis and cholecystitis
IM5.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom
IM5.13	Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease
IM5.16	Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy
IM5.18	Enumerate the indications for hepatic transplantation

Number	**Unit 6 - HIV**
IM6.1	Describe and discuss the symptoms and signs of acute HIV seroconversion
IM6.2	Define and classify HIV AIDS based on the CDC criteria
IM6.3	Describe and discuss the relationship between CDC count and the risk of opportunistic infections

IM6.4	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections
IM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies
IM6.6	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions
IM6.9	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC
IM6.11	Enumerate the indications and describe the findings for CT of the chest and brain and MRI
IM6.12	Enumerate the indications for and interpret the results of: pulse oximetry, ABG, Chest Radiograph
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea
IM6.16	Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions
IM6.17	Discuss and describe the principles and regimens used in post exposure prophylaxis

Number	**Unit 7 - Rheumatologic problems**
IM7.1	Describe the pathophysiology of autoimmune disease
IM7.2	Describe the genetic basis of autoimmune disease
IM7.3	Classify cause of joint pain based on the pathophysiology
IM7.4	Develop a systematic clinical approach to joint pain based on the pathophysiology
IM7.5	Describe and discriminate acute, subacute and chronic causes of joint pain
IM7.6	Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain
IM7.7	Discriminate, describe and discuss distinguishing articular from periarticular complaints
IM7.8	Determine the potential causes of join pain based on the presenting features of joint involvement
IM7.9	Describe the common signs and symptoms of articular and periarticular diseases
IM7.10	Describe the systemic manifestations of rheumatologic disease
IM7.14	Describe the appropriate diagnostic work up based on the presumed aetiology
IM7.15	Enumerate the indications for and interpret the results of : CBC, anti- CCP, RA, ANA, DNA and other tests of autoimmunity
IM7.16	Enumerate the indications for arthrocentesis
IM7.17	Enumerate the indications and interpret plain radiographs of joints
IM7.19	Develop an appropriate treatment plan for patients with rheumatologic diseases
IM7.23	Describe the basis for biologic and disease modifying therapy in rheumatologic diseases
IM7.27	Determine the need for specialist consultation

Number	**UNIT 8 - Hypertension**
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension
IM8.2	Describe and discuss the pathophysiology of hypertension
IM8.3	Describe and discuss the genetic basis of hypertension
IM8.4	Define and classify hypertension
IM8.5	Describe and discuss the differences between primary and secondary hypertension
IM8.6	Define, describe and discuss and recognise hypertensive urgency and emergency
IM8.7	Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension
IM8.8	Describe, discuss and identify target organ damage due to hypertension
IM8.9	Elicit document and present a medical history that includes: duration and levels, symptoms, comorbidities, lifestyle, risk factors, family history, psychosocial and environmental factors, dietary assessment, previous and concomitant therapy
IM8.12	Describe the appropriate diagnostic work up based on the presumed aetiology

IM8.13	Enumerate the indications for and interpret the results of : CBC, Urine routine, BUN, Cr, Electrolytes, Uric acid, ECG
IM8.14	Develop an appropriate treatment plan for essential hypertension
IM8.20	Determine the need for specialist consultation

Number	**Unit 9 - Anemia**
IM9.1	Define, describe and classify anemia based on red blood cell size and reticulocyte count
IM9.2	Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia
IM9.7	Describe and discuss the meaning and utility of various components of the hemogram
IM9.8	Describe and discuss the various tests for iron deficiency
IM9.11	Describe the indications and interpret the results of a bone marrow aspirations and biopsy
IM9.12	Describe, develop a diagnostic plan to determine the aetiology of anemia
IM9.14	Describe the national programs for anemia prevention
IM9.17	Describe the indications for blood transfusion and the appropriate use of blood components
IM9.18	Describe the precautions required necessary when performing a blood transfusion
IM9.21	Determine the need for specialist consultation

Number	**Unit 10 - Acute Kidney Injury and Chronic renal failure**
IM10.1	Define, describe and differentiate between acute and chronic renal failure
IM10.2	Classify, describe and differentiate the pathophysiologic causes of acute renal failure
IM10.3	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF
IM10.4	Describe the evolution, natural history and treatment of ARF
IM10.5	Describe and discuss the aetiology of CRF
IM10.6	Stage Chronic Kidney Disease
IM10.7	Describe and discuss the pathophysiology and clinical findings of uraemia
IM10.8	Classify, describe and discuss the significance of proteinuria in CKD
IM10.9	Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD
IM10.10	Describe and discuss the association between CKD glycemia and hypertension
IM10.11	Describe and discuss the relationship between CAD risk factors and CKD and in dialysis
IM10.14	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM10.15	Describe the appropriate diagnostic work up based on the presumed aetiology
IM10.16	Enumerate the indications for and interpret the results of : renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap
IM10.19	Enumerate the indications and describe the findings in renal ultrasound
IM10.24	Counsel patients on a renal diet
IM10.26	Describe and discuss supportive therapy in CKD including diet, anti hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and secondary hyperparathyroidism

Number	**Unit 11 - Diabetes Mellitus**
IM11.1	Define and classify diabetes
IM11.2	Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes
IM11.3	Describe and discuss the epidemiology and pathogenesis and risk factors economic impact and clinical evolution of type 2 diabetes
IM11.4	Describe and discuss the genetic background and the influence of the environment on diabetes
IM11.5	Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes
IM11.6	Describe and discuss the pathogenesis and precipitating factors, recognition and management of diabetic emergencies

IM11.9	Describe and recognise the clinical features of patients who present with a diabetic emergency
IM11.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM11.14	Recognise the presentation of hypoglycaemia and outline the principles on its therapy
IM11.15	Recognise the presentation of diabetic emergencies and outline the principles of therapy
IM11.16	Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions
IM11.17	Outline a therapeutic approach to therapy of T2Diabetes based on presentation, severity and complications in a cost effective manner
IM11.18	Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease
IM11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment
IM11.23	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of diabetic ketoacidosis
IM11.24	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of Hyperosmolar non ketotic state

Number	**Unit 12 - Thyroid dysfunction**
IM12.1	Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease
IM12.2	Describe and discuss the genetic basis of some forms of thyroid dysfunction
IM12.3	Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function
IM12.4	Describe and discuss the principles of radio iodine uptake in the diagnosis of thyroid disorders
IM12.8	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis
IM12.12	Describe and discuss the iodisation programs of the government of India
IM12.13	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs
IM12.15	Describe and discuss the indications of thionamide therapy, radio iodine therapy and surgery in the management of thyrotoxicosis

Number	**Unit 13 - Common malignancies**
IM13.1	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India
IM13.2	Describe the genetic basis of selected cancers
IM13.3	Describe the relationship between infection and cancers
IM13.4	Describe the natural history, presentation, course, complications and cause of death for common cancers
IM13.5	Describe the common issues encountered in patients at the end of life and principles of management
IM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer
IM13.12	Describe the indications and interpret the results of Chest X Ray, mammogram, skin and tissue biopsies and tumor markers used in common cancers
IM13.13	Describe and assess pain and suffering objectively in a patient with cancer
IM13.14	Describe the indications for surgery, radiation and chemotherapy for common malignancies
IM13.15	Describe the need, tests involved, their utility in the prevention of common malignancies
IM13.17	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer
IM13.18	Describe and discuss the ethical and the medico legal issues involved in end of life care
IM13.19	Describe the therapies used in alleviating suffering in patients at the end of life

Number	**Unit 14 - Obesity**
IM14.1	Define and measure obesity as it relates to the Indian population

IM14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes
IM14.3	Describe and discuss the monogenic forms of obesity
IM14.4	Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity
IM14.5	Describe and discuss the natural history of obesity and its complications
IM14.10	Describe the indications and interpret the results of tests for secondary causes of obesity
IM14.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity
IM14.14	Describe and enumerate the indications and side effects of bariatric surgery
IM14.15	Describe and enumerate and educate patients, health care workers and the public on measures to prevent obesity and promote a healthy lifestyle

Number	**Unit 15 - GI bleeding**
IM15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding
IM15.3	Describe and discuss the physiologic effects of acute blood and volume loss
IM15.10	Enumerate the indications for endoscopy, colonoscopy and other imaging procedures in the investigation of Upper GI bleeding
IM15.12	Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion
IM15.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori
IM15.16	Enumerate the indications for endoscopic interventions and Surgery

Number	**Unit 16 - Diarrheal disorder**
IM16.1	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non infectious causes
IM16.2	Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance
IM16.3	Describe and discuss the chronic effects of diarrhea including malabsorption
IM16.11	Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea
IM16.12	Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea
IM16.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea
IM16.16	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy
IM16.17	Describe and enumerate the indications for surgery in inflammatory bowel disease
Number	**Unit 17 - Headache**
IM17.1	Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache
IM17.3	Classify migraine and describe the distinguishing features between classical and non classical forms of migraine
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis
IM17.10	Enumerate the indications for emergency care admission and immediate supportive care in patients with headache
IM17.11	Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine
IM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine
IM17.13	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis

Number	Unit 18 - Cerebrovascular accident
IM18.1	Describe the functional and the vascular anatomy of the brain
IM18.2	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke
IM18.4	Identify the nature of the cerebrovascular accident based on the temporal evolution and resolution of the illness
IM18.8	Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in CNS disease
IM18.11	Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)
IM18.12	Enumerate the indications for and describe acute therapy of non hemorrhagic stroke including the use of thrombolytic agents
IM18.13	Enumerate the indications for and describe the role of anti platelet agents in non hemorrhagic stroke
IM18.14	Describe the initial management of a hemorrhagic stroke
IM18.15	Enumerate the indications for surgery in a hemorrhagic stroke

Number	Unit 19 - Movement disorders
IM19.1	Describe the functional anatomy of the locomotor system of the brain
IM19.2	Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors
IM19.8	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome
IM19.9	Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders

Number	Unit 20 - Envenomation
IM20.1	Enumerate the local poisonous snakes and describe the distinguishing marks of each
IM20.3	Describe the initial approach to the stabilisation of the patient who presents with snake bite
IM20.7	Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti snake venom
IM20.8	Describe the diagnosis, initial approach stabilisation and therapy of scorpion envenomation
IM20.9	Describe the diagnosis initial approach stabilisation and therapy of bee sting allergy

Number	Unit 21 - Poisoning
IM21.1	Describe the initial approach to the stabilization of the patient who presents with poisoning
IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification
IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy
IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features,
	prognosis and approach to therapy
IM21.8	Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture

Number	Unit 22 - Mineral, Fluid Electrolyte and Acid base Disorder
IM22.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia
IM22.2	Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism
IM22.3	Describe the approach to the management of hypercalcemia
IM22.4	Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome

IM22.5	Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management of the patient with hyponatremia
IM22.6	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyponatremia
IM22.7	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hypokalemia
IM22.8	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyperkalemia
IM22.9	Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis
IM22.10	Enumerate the causes of describe the clinical and laboratory features of metabolic alkalosis
IM22.11	Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis
IM22.12	Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis

Number	**Unit 23 - Nutritional and Vitamin Deficiencies**
IM23.1	Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses
IM23.2	Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital
IM23.3	Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies
IM23.4	Enumerate the indications for enteral and parenteral nutrition in critically ill patients

Number	**Unit 24 - Geriatrics**
IM24.1	Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly
IM24.3	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of acute confusional states
IM24.4	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vascular events in the elderly
IM24 5	Describe and discuss the aetiopathogenesis clinical presentation identification, functional changes, acute care, stabilization, management and rehabilitation of depression in the elderly
IM24.6	Describe and discuss the aetiopathogenesis causes, clinical presentation, difference in discussion presentation identification, functional changes, acute care, stabilization, management and rehabilitation of dementia in the elderly
IM24.7	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the elderly
IM24.8	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of osteoporosis in the elderly
IM24.9	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of CVA in the elderly
IM24.10	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly
IM24.11	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery
IM24.12	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of degenerative joint disease
IM24.13	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly
IM24.14	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of common fractures in the elderly
IM24.15	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly
IM24.16	Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly

IM24.17	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly
IM24.18	Describe the impact of the demographic changes in ageing on the population
IM24.19	Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on health.
IM24.20	Enumerate and describe social interventions in the care of elderly including domiciliary discussion services, rehabilitation facilities, old age homes and state interventions
IM24.21	Enumerate and describe ethical issues in the care of the elderly
IM24.22	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly

Number	**Unit 25 - Miscellaneous Infections**
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis, Rabies) and non-febrile infectious disease (e.g. Tetanus)
IM25.2	Discuss and describe the common causes, pathophysiology and manifestations of these diseases
IM25.3	Describe and discuss the pathophysiology and manifestations of these diseases
IM25.6	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes
IM25.7	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC
IM25.8	Enumerate the indications for use of newer techniques in the diagnosis of these infections
IM25.10	Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner

Number	**Unit 26 - The role of the physician in the community**
IM26.1	Enumerate and describe professional qualities and roles of a physician
IM26.2	Describe and discuss the commitment to lifelong learning as an important part of physician growth
IM26.3	Describe and discuss the role of non maleficence as a guiding principle in patient care
IM26.4	Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care
IM26.5	Describe and discuss the role of beneficence of a guiding principle in patient care
IM26.6	Describe and discuss the role of a physician in health care system
IM26.7	Describe and discuss the role of justice as a guiding principle in patient care
IM26.8	Identify discuss medicolegal, socioeconomic and ethical issues as it pertains to organ donation
IM26.9	Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care
IM26.10	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care
IM26.11	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to patient autonomy, patient rights and shared responsibility in health care
IM26.12	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in health care including advanced directives and surrogate decision making
IM26.13	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in emergency care including situations where patients do not have the capability or capacity to give consent
IM26.14	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects
IM26.15	Identify, discuss and defend, medicolegal,socio-cultural and ethical issues as they pertain to consent for surgical procedures
IM26.16	Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)
IM26.17	Identify, discuss physician's role and responsibility to society and the community that she/ he serves

IM26.18	Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues in physician- industry relationships
IM26.43	Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as they pertain to in vitro fertilisation donor insemination and surrogate motherhood
IM26.44	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to medical negligence
IM26.45	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to malpractice
IM26.46	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues in dealing with impaired physicians
IM26.47	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support

Respiratory Medicine

Number	**Unit 1 - Tuberculosis**
CT1.1	Describe and discuss the epidemiology of tuberculosis and its impact on the work, life and economy of India
CT1.2	Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS)
CT1.3	Discuss and describe the impact of co-infection with HIV and other co-morbid conditions. Like diabetes on the natural history of tuberculosis
CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs
CT1.5	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations
CT1.6	Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes a a) general examination, b) examination of the chest and lung including loss of volume, mediastinal shift, percussion and auscultation (including DOAP session of lung sounds and added sounds) c) examination of the lymphatic system and d) relevant CNS examination
CT1.7	Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test
CT1.8	Generate a differential diagnosis based on the clinical history and evolution of the disease that prioritises the most likely diagnosis
CT1.9	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing
CT1.10	Perform and interpret an AFB stain
CT1.11	Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration
CT1.12	Enumerate the indications for tests including: serology, special cultures and polymerase chain reaction and sensitivity testing
CT1.13	Describe and discuss the origin, indications, technique of administration, efficacy and complications of the BCG vaccine
CT1.14	Describe and discuss the pharmacology of various anti-tuberculous agents, their indications, contraindications, interactions and adverse reactions
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and comorbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)
CT1.16	Describe the appropriate precautions, screening, testing and indications for chemoprophylaxis for contacts and exposed health care workers
CT1.17	Define criteria for the cure of Tuberculosis; describe and recognise the features of drug resistant tuberculosis, prevention and therapeutic regimens
CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program
CT1.19	Communicate with patients and family in an empathetic manner about the diagnosis, therapy
Number	**Unit 2: Obstructive airway disease**
CT2.1	Define and classify obstructive airway disease

CT2.2	Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease
CT2.3	Enumerate and describe the causes of acute episodes in patients with obstructive airway disease
CT2.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapneia
CT2.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema
CT2.6	Describe the role of the environment in the cause and exacerbation of obstructive airway disease
CT2.7	Describe and discuss allergic and non-allergic precipitants of obstructive airway disease
CT2.8	Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants
CT2.9	Perform a systematic examination that establishes the diagnosis and severity that includes measurement of respiratory rate, level of respiratory distress, effort tolerance, breath sounds, added sounds, identification of signs of consolidation pleural effusion and Pneumothorax
CT2.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
CT2.11	Describe, discuss and interpret pulmonary function tests
CT2.12	Perform and interpret peak expiratory flow rate
CT2.13	Describe the appropriate diagnostic work up based on the presumed aetiology
CT2.14	Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph
CT2.15	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
CT2.16	Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilisers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy
CT2.17	Describe and discuss the indications for vaccinations in OAD
CT2.18	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids
CT2.19	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy
CT2.20	Describe and discuss the principles and use of oxygen therapy in the hospital and at home
CT2.21	Describe discuss and counsel patients appropriately on smoking cessation
CT2.22	Demonstrate and counsel patient on the correct use of inhalers
CT2.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients
CT2.24	Recognize the impact of OAD on patient's quality of life, well being, work and family
CT2.25	Discuss and describe the impact of OAD on the society and workplace
CT2.26	Discuss and describe preventive measures to reduce OAD in workplaces
CT2.27	Demonstrate an understanding of patient's inability to change working, living and environmental factors that influence progression of airway disease

Psychiatry

Number	**Unit 1 - Doctor patient relationship**
PS1.1	Establish rapport and empathy with patients
PS1.2	Describe the components of communication
PS1.3	Demonstrate breaking of bad news in a simulated environment
PS1.4	Describe and demonstrate the importance of confidentiality in patient encounters

Number	**Unit 2 - Mental health**
PS2.1	Define stress and describe its components and causes
PS2.2	Describe the role of time management, study skills, balanced diet and sleep wake habits in stress avoidance
PS2.3	Define and describe the principles and components of learning memory and emotions
PS2.4	Describe the principles of personality development and motivation
PS2.5	Define and distinguish normality and abnormality
Number	**Unit 3 - Introduction to psychiatry**

PS3.1	Describe the growth of psychiatry as a medical specialty, its history and contribution to society
PS3.2	Enumerate, describe and discuss important signs & symptoms of common mental disorders
PS3.3	Elicit, present and document a history in patients presenting with a mental disorder
PS3.4	Describe the importance of establishing rapport with patients
PS3.5	Perform, demonstrate and document a mini mental examination
PS3.6	Describe and discuss biological, psychological & social factors & their interactions in the causation of mental disorders
PS3.7	Enumerate and describe common organic psychiatric disorders, magnitude, etiology and clinical features
PS3.8	Enumerate and describe the essential investigations in patients with organic psychiatric disorders
PS3.9	Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders
PS3.10	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders
PS3.11	Enumerate the appropriate conditions for specialist referral in patients with psychiatric disorders
PS3.12	Describe, discuss and distinguish psychotic & non-psychotic (Mood, Anxiety, Stress related) disorders

Number	**Unit 4 -Substance use disorders**
PS4.1	Describe the magnitude and etiology of alcohol and substance use disorders
PS4.2	Elicit, describe and document clinical features of alcohol and substance use disorders
PS4.3	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders
PS4.4	Describe the treatment of alcohol and substance abuse disorders including behavioral and pharmacologic therapy
PS4.5	Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment
PS4.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse
PS4.7	Enumerate the appropriate conditions for specialist referral in patients with alcohol and substance abuse disorders

Number	**Unit 5 - Psychotic disorders**
PS5.1	Classify and describe the magnitude and etiology of schizophrenia & other psychotic disorders
PS5.2	Enumerate, elicit, describe and document clinical features, positive and negative symptoms of schizophrenia
PS5.3	Describe the treatment of schizophrenia including behavioural and pharmacologic therapy
PS5.4	Demonstrate family education in a patient with schizophrenia in a simulated environment
PS5.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia
PS5.6	Enumerate the appropriate conditions for specialist referral in patients with psychotic disorders

Number	**Unit 6 - Mood disorder**
PS6.1	Classify and describe the magnitude and etiology of depression
PS6.2	Enumerate, elicit, describe and document clinical features in patients with depression
PS6.3	Enumerate and describe the indications and interpret laboratory and other tests used in depression
PS6.4	Describe the treatment of depression including behavioural and pharmacologic therapy
PS6.5	Demonstrate family education in a patient with depression in a simulated environment
PS6.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in depression
PS6.7	Enumerate the appropriate conditions for specialist referral in patients with depression

Number	**Unit 7 - Bipolar disorder**
PS7.1	Classify and describe the magnitude and etiology of bipolar disorders
PS7.2	Enumerate, elicit, describe and document clinical features in patients with bipolar disorders

PS7.3	Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders
PS7.4	Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy
PS7.5	Demonstrate family education in a patient with bipolar disorders in a simulated environment
PS7.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders
PS7.7	Enumerate the appropriate conditions for specialist referral in patients with bipolar disorders

Number	**Unit 8 - Anxiety disorders**
PS8.1	Enumerate and describe the magnitude and etiology of anxiety disorders
PS8.2	Enumerate, elicit, describe and document clinical features in patients with anxiety disorders
PS8.3	Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders
PS8.4	Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy
PS8.5	Demonstrate family education in a patient with anxiety disorders in a simulated environment.
PS8.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders
PS8.7	Enumerate the appropriate conditions for specialist referral in anxiety disorders

Number	**Unit 9 - Stress related disorders**
PS9.1	Enumerate and describe the magnitude and etiology of stress related disorders
PS9.2	Enumerate, elicit, describe and document clinical features in patients with stress related disorders
PS9.3	Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders
PS9.4	Describe the treatment of stress related disorders including behavioural and psychosocial therapy
PS9.5	Demonstrate family education in a patient with stress related disorders in a simulated environment
PS9.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in stress related disorders
PS9.7	Enumerate the appropriate conditions for specialist referral in stress disorders

Number	**Unit 10 - Somatoform disorders**
PS10.1	Enumerate and describe the magnitude and etiology of somatoform, dissociative and conversion disorders
PS10.2	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders
PS10.3	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders
PS10.4	Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy
PS10.5	Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a simulated environment
PS10.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders;
PS10.7	Enumerate the appropriate conditions for specialist referral in patients with somato form dissociative and conversion disorders

Number	**Unit 11 - Personality disorders**
PS11.1	Enumerate and describe the magnitude and etiology of personality disorders
PS11.2	Enumerate, elicit, describe and document clinical features in patients with personality disorders
PS11.3	Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders
PS11.4	Describe the treatment of personality disorders including behavioural, psychosocial and pharmacologic therapy
PS11.5	Demonstrate family education in a patient with personality disorders in a simulated environment
PS11.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders
PS11.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 12 - Psychosomatic disorders
PS12.1	Enumerate and describe the magnitude and etiology of psychosomatic disorders
PS12.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders
PS12.3	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders
PS12.4	Describe the treatment of **psychosomatic** disorders including behavioural, psychosocial and pharmacologictherapy
PS12.5	Demonstrate family education in a patient with psychosomatic disorders in a simulated environment
PS12.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders
PS12.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 13 - Psychosexual and gender identity disorders
PS13.1	Enumerate and describe the magnitude and etiology of psychosexual and gender identity disorders
PS13.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders
PS13.3	Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual andgender identity disorders
PS13.4	Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial andpharmacologic therapy
PS13.5	Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment
PS13.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosexual and genderidentity disorders
PS13.7	Enumerate the appropriate conditions for specialist referral

Number	Unit 14 - Psychiatric disorders in childhood and adolescence
PS14.1	Enumerate and describe the magnitude and etiology of psychiatric disorders occurring in childhood and adolescence
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring inchildhood and adolescence
PS14.3	Describe the treatment of stress related disorders including behavioural, psychosocial and pharmacologic therapy
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescencein a simulated environment
PS14.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychiatric disorders occurring in childhood and adolescence
PS14.6	Enumerate the appropriate conditions for specialist referral in children and adolescents with psychiatric disorders

Number	Unit 15 - Mental retardation
PS15.1	Describe the aetiology and magnitude of mental retardation
PS15.2	Describe and discuss intelligence quotient and its measurement
PS15.3	Elicit and document a history and clinical examination and choose appropriate investigations in a patient withmental retardation
PS15.4	Describe the psychosocial interventions and treatment used in mental retardation

Numbe	Unit 16 - Psychiatric disorders in the elderly

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PS16.1	Enumerate and describe common psychiatric disorders in the elderly including dementia, depression and psychosis
PS16.2	Describe the aetiology and magnitude of psychiatric illness in the elderly
PS16.3	Describe the therapy of psychiatric illness in elderly including psychosocial and behavioural therapy
PS16.4	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment
PS16.5	Enumerate the appropriate conditions for specialist referral in psychiatric disorders in the elderly

Numbe r	Unit 17 - Psychiatric disorders in childhood and adolescence
PS17.1	Enumerate and describe the recognition and clinical presentation of psychiatric emergencies (Suicide, Deliberate Self Harm, Violent behaviour)
PS17.2	Describe the initial stabilisation and management of psychiatric emergencies
PS17.3	Enumerate the appropriate conditions for specialist referral in patients with psychiatric emergencies

Number	Unit 18 - Therapeutics
PS18.1	Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs
	in psychiatric disorders
PS18.2	Enumerate the indications for modified electroconvulsive therapy
PS18.3	Enumerate and describe the principles and role of psychosocial interventions in psychiatric illness includingpsychotherapy, behavioural therapy and rehabilitation

Number	Unit 19 - Miscellaneous
PS19.1	Describe the relevance, role and status of community psychiatry
PS19.2	Describe the objectives strategies and contents of the National Mental Health Programme
PS19.3	Describe and discuss the basic legal and ethical issues in psychiatry
PS19.4	Enumerate and describe the salient features of the prevalent mental health laws in India
PS19.5	Describe the concept and principles of preventive psychiatry and mental health promotion (positive mentalhealth); and community education
PS19.6	Enumerate and describe the identifying features and the principles of participatory management of mentalillness occurring during and after disasters

Dermatology, Venereology & leprosy

Number	Unit 1 - Acne, (Etio pathogenesis & Management)
DR1.1	Enumerate the causative and risk factors of acne
DR1.3	Describe the treatment and preventive measures for various kinds of acne

Number	Unit 2 - Vitiligo vulgaris
DR2.2	Describe the treatment of vitiligo

Number	Unit 3 - Papulosquamous disorders
DR3.1	Identify and distinguish psoriatic lesions from other causes
DR3.3	Enumerate the indications for and describe the various modalities of treatment of psoriasis.

Number	Unit 4 - Lichen Planus
DR4.2	Enumerate and describe the treatment modalities for lichen planus

Number	Unit 5 -Scabies
DR5.1	Describe the etiology, microbiology, pathogenesis, natural history, clinical features, presentations and complications of scabies in adults and children
DR5.3	Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies forscabies

Number	Unit 6 - Pediculosis
DR6.1	Describe the etiology pathogenesis and diagnostic features of pediculosis in adults and children

Number	Unit 7 - Dermatophytosis
DR7.1	Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of dermatophytosis in adults and children
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects ofantifungal therapy

Number	Unit 8 - Viral infections
DR8.1	Describe the etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin in adults and children
DR8.7	Enumerate the indications and describe the pharmacology,administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin

Number	Unit 9 - Leprosy
DR9.1	Classify, describe the epidemiology, etiology, microbiology, pathogenesis, clinical presentations and diagnostic features of Leprosy
DR9.4	Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions
DR9.5	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines
DR9.6	Describe the treatment of Leprosy based on the current guidelines
DR9.7	Enumerate and describe the complications of leprosy and its Management.

Number	Unit 10 - Sexually Transmitted Diseases
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis
DR10.4	Describe the prevention of congenital syphilis
DR10.6	Describe the etiology, diagnostic and clinical features of nonsyphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the nonsyphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)
DR10.9	Describe the syndromic approach to ulcerative sexually transmitted disease.
DR10.10	Describe the etiology, diagnostic and clinical features and management of gonococcal and non-gonococcal urethritis.
DR10.11	Describe the etiology, diagnostic and clinical features and management of vaginal discharge.

Number	Unit 11 - HIV
DR11.1	Describe the etiology, pathogenesis and clinical features of thedermatologic manifestations of HIV
DR11.3	Enumerate the indications and describe the pharmacology,administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV

Number	Unit 12 - Dermatitis and Eczema
DR12.1	Describe the aetiopathogenesis of eczema
DR12.3	Classify and grade eczema

DR12.4	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the treatment of eczema

Number	**Unit 14 - Urticaria Angioedema**
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema.
DR14.5	Enumerate the indications and describe the pharmacology indications and adverse reaction of drugs used in the urticaria and angioedema

Number	**Unit 15 - Pyoderma**
DR15.3	Enumerate the indications and describe the pharmacology,indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma

Number	**Unit 17 - Nutritional Deficiencies and Skin**
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency
DR17.2	Enumerate and describe the various skin changes in Vitamin B complex deficiency
DR17.3	Enumerate and describe the various changes in Vitamin C deficiency K
DR17.4	Enumerate and describe the various changes in Zinc deficiency

Number	**Unit 18 - Systemic diseases and the skin**
DR18.1	Enumerate the cutaneous features of Type 2 diabetes
DR18.2	Enumerate the cutaneous features of hypo/hyper-thyroidism

Practical Syllabus: Topic and the competencies
General Medicine

Number	Unit 1 - Heart Failure
IM1.10	Elicit document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including: presenting complaints, precipitating and exacerbating factors, risk factors exercise tolerance, changes in sleep patterns, features suggestive of infective endocarditis
IM1.11	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation
IM1.12	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure
IM1.13	Measure the blood pressure accurately, recognise and discuss alterations in blood pressure in valvular heart disease and other causes of heart failure and cardiac tamponade
IM1.14	Demonstrate and measure jugular venous distension
IM1.15	Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations
IM1.18	Perform and interpret a 12 lead ECG
IM1.19	Enumerate the indications for and describe the findings of heart failure with the following conditions including: 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture
IM1.26	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient

Number	Unit 2 - Acute Myocardial Infarction/ IHD
IM2.6	Elicit document and present an appropriate history that includes onset evolution, presentation risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes
IM2.7	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation
IM2.8	Generate document and present a differential diagnosis based on the clinical presentation and prioritise based on “cannot miss”, most likely diagnosis and severity
IM2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the clinical presentation
IM2.10	Order, perform and interpret an ECG
IM2.11	Order and interpret a Chest X-ray and markers of acute myocardial infarction
IM2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context
IM2.21	Observe and participate in a controlled environment an ACLS program
IM2.22	Perform and demonstrate in a mannequin BLS

Number	Unit 3 - Pneumonia
IM3.4	Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk
IM3.5	Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of disease
IM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation
IM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG
IM3.8	Demonstrate in a mannequin and interpret results of an arterial blood gas examination
IM3.9	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration

IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialized testing
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum.
IM3.14	Perform and interpret a sputum gram stain and AFB

Number	**Unit 4 - Fever and febrile syndromes**
IM4.9	Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use
IM4.10	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)
IM4.13	Perform and interpret a sputum gram stain
IM4.14	Perform and interpret a sputum AFB
IM4.15	Perform and interpret a malarial smear
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment
IM4.19	Assist in the collection of blood and wound cultures
IM4.20	Interpret a PPD (Mantoux)
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs

Number	**Unit 5 - Liver disease**
IM5.9	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history
IM5.10	Perform a systematic examination that establishes the diagnosis and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of portosystemic hypertension and hepatic encephalopathy
IM5.12	Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases.
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology
IM5.15	Assist in the performance and interpret the findings of an ascitic fluid analysis

Number	**Unit 6 - HIV**
IM6.7	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status
IM6.8	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose opportunistic infections including CBC, sputum examination and cultures, blood cultures, stool analysis, CSF analysis and Chest radiographs
IM6.14	Perform and interpret AFB sputum
IM6.15	Demonstrate in a model the correct technique to perform a lumbar puncture

Number	**Unit 7 - Rheumatologic problems:**
IM7.11	Elicit document and present a medical history that will differentiate the aetiologies of disease
IM7.12	Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease

Number	Unit 8 - Hypertension
IM8.10	Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart
IM8.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM8.15	Recognise, prioritise and manage hypertensive emergencies
IM8.17	Perform and interpret a 12 lead ECG

Number	Unit 9 - Anemia
IM9.3	Elicit document and present a medical history that includes symptoms, risk factors including GI bleeding, prior history, medications, menstrual history, and family history
IM9.4	Perform a systematic examination that includes : general examination for pallor, oral examination, DOAP session of hyper dynamic circulation, lymph node and splenic examination
IM9.5	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology
IM9.6	Describe the appropriate diagnostic work up based on the presumed aetiology
IM9.9	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate
IM9.10	Describe, perform and interpret a peripheral smear and stool occult blood
IM9.13	Prescribe replacement therapy with iron, B12, folate
IM9.19	Assist in a blood transfusion

Number	Unit 10 - Acute Kidney Injury and Chronic renal failure
IM10.12	Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes
IM10.13	Perform a systematic examination that establishes the diagnosis and severity including determination of volume status, presence of edema and heart failure, features of uraemia and associated systemic disease
IM10.17	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)
IM10.18	Identify the ECG findings in hyperkalemia
IM10.20	Describe and discuss the indications to perform arterial blood gas analysis: interpret the data
IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter
IM10.22	Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter

Number	Unit 11 - Diabetes Mellitus
IM11.7	Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease
IM11.8	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)
IM11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile
IM11.12	Perform and interpret a capillary blood glucose test
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick

Number	Unit 12 - Thyroid dysfunction
IM12.5	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity
IM12.6	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings
IM12.7	Demonstrate the correct technique to palpate the thyroid

IM12.9	Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan
IM12.10	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG
IM12.11	Interpret thyroid function tests in hypo and hyperthyroidism

Number	**Unit 13 - Common malignancies**
IM13.7	Elicit document and present a history that will help establish the aetiology of cancer and includes the appropriate risk factors, duration and evolution
IM13.8	Perform and demonstrate a physical examination that includes an appropriate general and local examination that excludes the diagnosis, extent spread and complications of cancer
IM13.9	Demonstrate in a mannequin the correct technique for performing breast exam, rectal examination and cervical examination and pap smear
IM13.10	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis
IM13.11	Order and interpret diagnostic testing based on the clinical diagnosis including CBC and stool occult blood and prostate specific antigen

Number	**Unit 14 - Obesity**
IM14.6	Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history, clues for secondary causes and motivation to lose weight
IM14.7	Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities
IM14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis
IM14.9	Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.

Number	**Unit 15 - GI bleeding**
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed
IM15.4	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors
IM15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination
IM15.6	Distinguish between upper and lower gastrointestinal bleeding based on the clinical features
IM15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent
IM15.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis
IM15.9	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test.
IM15.11	Develop, document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion, and specific therapy for arresting blood loss
IM15.13	Observe cross matching and blood / blood component transfusion
IM15.17	Determine appropriate level of specialist consultation
IM15.18	Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options

Number	**Unit 16 - Diarrheal disorder**
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses
IM16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination
IM16.6	Distinguish between diarrhea and dysentery based on clinical features
IM16.7	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis

IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen
IM16.10	Identify vibrio cholera in a hanging drop specimen
IM16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis

Number	**Unit 17 - Headache**
IM17.2	Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches
IM17.4	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis
IM17.5	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation
IM17.6	Choose and interpret diagnostic testing based on the clinical diagnosis including imaging
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis

Number	**Unit 18 - Cerebrovascular accident**
IM18.3	Elicit and document and present an appropriate history including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident
IM18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history
IM18.9	Choose and interpret the appropriate diagnostic and imaging test that will delineate the anatomy and underlying cause of the lesion
IM18.10	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)
IM18.16	Enumerate the indications describe and observe the multidisciplinary rehabilitation of patients with a CVA

Number	**Unit 19 - Movement disorders**
IM19.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the movement disorders
IM19.4	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales
IM19.5	Generate document and present a differential diagnosis and prioritise based on the history and physical examination
IM19.6	Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings
IM19.7	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders

Number	**Unit 20 - Envenomation**
IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient with a snake bite in the field
IM20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite
IM20.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination
IM20.6	Choose and interpret the appropriate diagnostic testing in patients with snake bites

Number	**Unit 21 - Poisoning**
IM21.5	Observe and describe the functions and role of a poison center in suspected poisoning
IM21.6	Describe the medico legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico legal report on a suspected poisoning

Number	Unit 22 - Mineral, Fluid Electrolyte and Acid base Disorder
IM22.13	Identify the underlying acid based disorder based on an ABG report and clinical situation

Number	Unit 23 - Nutritional and Vitamin Deficiencies
IM23.5	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet

Number	Unit 24 - Geriatrics
IM24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components

Number	Unit 25 - Miscellaneous Infections
IM25.4	Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel
IM25.5	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin, mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)
IM25.9	Assist in the collection of blood and other specimen cultures

Number	Unit 26 - The role of the physician in the community
IM26.19	Demonstrate ability to work in a team of peers and superiors
IM26.20	Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgementaland empathetic manner
IM26.21	Demonstrate respect to patient privacy
IM26.22	Demonstrate ability to maintain confidentiality in patient care
IM26.23	Demonstrate a commitment to continued learning
IM26.24	Demonstrate respect in relationship with patients, fellow team members, superiors and other health careworkers
IM26.25	Demonstrate responsibility and work ethics while working in the health care team
IM26.26	Demonstrate ability to maintain required documentation in health care (including correct use of medicalrecords)
IM26.27	Demonstrate personal grooming that is adequate and appropriate for health care responsibilities
IM26.28	Demonstrate adequate knowledge and use of information technology that permits appropriate patient careand continued learning
IM26.29	Communicate diagnostic and therapeutic opitons to patient and family in a simulated environment
IM26.30	Communicate care opitons to patient and family with a terminal illness in a simulated environment
IM26.31	Demonstrate awareness of limitations and seeks help and consultations appropriately
IM26.32	Demonstrate appropriate respect to colleagues in the profession
IM26.33	Demonstrate an understanding of the implications and the appropriate procedures and response to befollowed in the event of medical errors
IM26.34	Identify conflicts of interest in patient care and professional relationships and describe the correct responseto these conflicts
IM26.35	Demonstrate empathy in patient encounters
IM26.36	Demonstrate ability to balance personal and professional priorities
IM26.37	Demonstrate ability to manage time appropriately
IM26.38	Demonstrate ability to form and function in appropriate professional networks
IM26.39	Demonstrate ability to pursue and seek career advancement
IM26.40	Demonstrate ability to follow risk management and medical error reduction practices where appropriate
IM26.41	Demonstrate ability to work in a mentoring relationship with junior colleagues
IM26.42	Demonstrate commitment to learning and scholarship
IM26.48	Demonstrate altruism

IM26.49	Administer informed consent and approriately adress patient queries to a patient being enrolled in aresearch protocol in a simulated environment

Dermatology

Number	Topic
DR1.2	Identify and grade the various common types of acne
DR2.1	Identify and differentiate vitiligo from other causes of hypopigmented lesions
DR3.2	Demonstrate the grattage test
DR4.1	Identify and distinguish lichen planus lesions from other causes
DR5.2	Identify and differentiate scabies from other lesions in adults and children
DR6.2	Identify and differentiate pediculosis from other skin lesions in adults and children
DR7.2	Identify Candida species in fungal scrapings and KOH mount
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions
DR8.4	Identify and distinguish viral warts from other skin lesions
DR8.5	Identify and distinguish molluscum contagiosum from other skin lesions
DR8.6	Enumerate the indications, describe the procedure and perform a Tzanck smear
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologicexamination
DR9.3	Enumerate the indications and observe the performance of a slit skin smear in patients with leprosy
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations
DR10.2	Identify spirochete in a dark ground microscopy
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases(chancroid, donovanosis and LGV)
DR11.2	Identify and distinguish the dermatologic manifestations of HIV, its complications, opportunistic infectionsand adverse reactions of Therapy.
DR12.2	Identify eczema and differentiate it from lichenification and changes of aging
DR12.5	Define erythroderma. Enumerate and identify the causes of erythroderma. Discuss the treatment
DR12.6	Identify and distinguish exfoliative dermatitis from other skin lesions
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions
DR13.1	Distinguish bulla from vesicles
DR13.2	Demonstrate the Tzanck test, nikolsky sign and bulla spread sign
DR13.3	Calculate the body surface area of involvement of vesiculobullous lesions
DR14.2	Identify and distinguish urticarial from other skin lesions
DR14.3	Demonstrate dermographism
DR14.4	Identify and distinguish angioedema from other skin lesions
DR15.1	Identify and distinguish folliculitis impetigo and carbuncle from other skin lesions
DR15.2	Identify staphylococcus on a gram stain
DR15.4	Enumerate the indications for surgical referral
DR16.1	Identify and distinguish skin lesions of SLE
DR16.2	Identify and distinguish Raynaud's phenomenon
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency

ASSESSMENT

General MedicineReference:

Medical Council of India, Competency Based Assessment Module for Undergraduate Medical EducationTraining Program, Volume II 2019.

Internal assessmentTheory IA:

- 7 Internal assessment exams in General Medicine (one in II MBBS, one in III MBBS – Part I, Five in III MBBS –Part II; Respiratory Medicine, Psychiatry, Dermatology syllabus will included in General medicine internal assessment).
- Formative assessment will include day to day assessment, AETCOM, AITO, Assignments, quiz and tutorials.

Practical IA:

- 4 Internal assessment exams (one in II MBBS, one in III MBBS – Part I, Two in III MBBS – Part II) will beconducted.
- Formative assessments will include day to day assessment Record book / Logbook, AETCOM.

Note: As per new guidelines under Assessment module mentioned above, Internal Assessment marks willnot be added to Final Summative University Examination but will be shown as a separate head under the Subject.

Eligibility to appear for University Examination

Attendance Eligibility	75% in theory and 80% in practical in each subject and in each professional year
Internal Assessment	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)

University examination

Theory Examination
Theory examination consists of two papers (Paper I & II). Each Theory paper will have 100 marks
Question paper pattern -Paper-I

Theory question paper pattern for 100 marks for a duration of 3 hours

MCQ (15 Direct & 5 Case Based):	20 X 1	= 20 marks
Long Answer Question: Direct/Case Based Essay:	2 X 15	= 30 marks
Short Answer Question (SAQ):	10 X 5	= 50 marks

Question paper pattern - Paper-II

Theory question paper pattern for 100 marks for a duration of 3 hours

MCQ (15 Direct & 5 Case Based):	20 X 1	= 20 marks
Section A (General Medicine) Long Answer Question: Direct/Case Based Essay Short Answer Question (SAQ)	 1 X 15 5 X 5	 = 15 marks = 25 marks
Section B (Psychiatry, Dermatology, Venereology & Leprosy, Respiratory Medicine) Long Answer Question: Direct/Case Based Essay Short Answer Question (SAQ)	 1 X 15 5 X 5	 = 15 marks = 25 marks

Syllabus for Paper I & II:

General Medicine Paper I

Unit	Topic
Unit 1, Unit 2, Unit 8	Cardiology
Unit 10	Renal system
Unit 3, Unit 4, Unit 6, Unit 25	Infectious disease and HIV miscellaneous infections
Unit 5, Unit 15, Unit 16	GIT & hepatology
Unit 20, Unit 21,	Toxicology
Unit 23, Unit 14	Nutrition & obesity
Unit 22	Critical care, fluid electrolite and acid based disorders

General Medicine Paper II

Unit	Topic
Unit 17, Unit 18, Unit 19	CNS
Unit 7	Musculoskeletal
Unit 9	Haematology
Unit 11, Unit 12	Endocrinology & diabetes
Unit 13	Oncology
Unit 24, Unit 26	Geriatrics & medical ethics

Psychiatry, Dermatology, Venereology & Leprosy, Respiratory Medicine

Unit	Topic
Unit 1, Unit 2 (CT)	Respiratory System
Unit 1 -19 (PS)	Psychiatry
Unit 1 – 18 (DR)	Dermatology, Venereology & Leprosy

Topics and marks distribution matrix for PAPER - I

General Medicine – 100 Per Paper (200 Marks) (20 MCQ, 2 Essay, 10 Short Notes)

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightage in %	LAQ	SAQ
1.	Cardiology	IM 1.1 TO IM1.19, IM 1.16,1.17, 1.21, 1.24,1.25,1.28,1.29 IM 2.1 TO 2.5, IM 2.13 TO 2.20, 2.23, IM 8.1 TO 8.9, 8.12, 8.13, 8.14, 8.20	3	15 to 18	✓	✓
2.	Renal system	IM 10.1 TO 10.11, 10.14, 10.15,10.16,10.19,10.24,10.26	3	15 to 18	✓	✓
3.	Infectious disease and HIV, Miscellaneous Infections	IM 4.1 TO 4.8, 4.11,4.12,4.16,4.18, 4.21,4.22, IM 6.1 TO 6.9,6.11,6.12,6.13, 6.16,6.17, IM 25.1 TO 25.3, 25.6,25.7,25.8,25,10 IM 3.1 TO 3.3, 3.15 TO 3.17	3	15 to 18	✓	✓

4.	GIT & Hepatology	IM 5.1 TO 5.8, IM 5.11,5.13,5.16,5.18, IM 15.1,15.3,15.10,15.12,5.14,5.15 ,5.16, IM 16.1 TO 16.3. 16.11 TO 16.14,16.16,16.17	3	15 to 18	✓	✓
5.	Toxicology	IM 20.1,20.3,20.7,20.8, 20.9, IM 21.1 TO 21.4, 21.8	3	7 to 10		✓
6.	Nutrition & Obesity	IM 23.1 TO 23.4, IM 14.1 TO 14.5, IM 14.10 ,4.13,14.14,14.15	2	6 to 9		✓
7.	Critical care, fluid electrolite and acid based disorders	IM 22.1 TO 22.12	3	6 to 9		✓

Topics and marks distribution matrix for PAPER II

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightage in %	LAQ	SAQ
1	CNS	IM 17.1,17.3,17.7,17.10 TO 17.13, IM 18.1,18.2,18.4,18.8,18.11 TO 18.15, IM 19.1 ,19.2, 19.8,19.9	3	15 to 18	✓	✓
2	Respiratory Medicine	CT 1.1 TO 1.19, CT 2.1 TO 2.27	3	20	✓	✓
3	Psychiatry	PS 1.1 -1.4, PS 2.1 -2.5, PS 3.1 TO 3.12, 4.1 TO 4.7,PS 5.1 TO 5.5, PS 6.1 TO 6.7, PS 7.1 TO 7.7, PS 8.1 TO 8.7, PS 9.1 TO 9.7, PS 10.1 TO 10.7, PS 11.1 TO 11.7, PS 12.1 TO 12.7, PS 13.1 TO 13.7, PS 14.1 TO 14.6, PS 15.1 TO 15.4, PS 16.1 TO 16.5, PS 17.1 TO 17.3, PS 18.1 TO 18.3 , PS 19.1 TO 19.6	3	15	✓	✓
4	Dermatology, Venereology & Leprosy	DR1.1 to 1.3, 3.1, 3.3, 4.2, 5.1, 5.3,6.1,7.1,7.3,8.1, 8.7, 9.1, 9.4, to DR9.7, 10.3,10.4, 10.6,10.8 to DR11.1, 11.3, 12.1, 12.3, 12.4, 14.1, 14.5, 15.3, 17.1 to DR18.2	3	15	✓	✓
5	Musculoskeletal	IM 7.1 TO 7.10, 7.14 TO 7.17,7.19,7.23,7.27	1	3 to 5		✓
6	Haematology	IM 9.1, 9.2,9.7,9.8,9.11,9.12,9.14,9.17, 9.18,9.21	2	5 to 8		✓
7	Endocrinology & diabetes	IM 12.1 TO 12.4, 12.8, 12.12,12.13,12.15, IM 11.1 TO 11.6, 11.9,11.10,11.14 TO 11.18,11.22 TO 11.24	3	5 to 9		✓
8	Oncology	IM 13.1 TO 13.6, 13.12 TO 13.15,13.17 ,13.18,13.19	1	3 to 5		✓
9	Geriatrics & medical ethics	IM 24.1, 24.3 TO 24.22. IM 26.1 TO 26.8, 26.43 TO 26.47	1	3 to 5		✓

Practical Syllabus

LONG CASE	SHORT CASE

CVA	CVA- Motor system examination
CVS AS,AR,MS,MR,ASD,VSD,Heart Failure	Facial Palsy
Pulmonology COPD, Asthma, Fibro cavity / Fibrosis, Pneumonia, Pleural effusion, Bronchectasis	Pulmonology COPD, Asthma, Fibro cavity / Fibrosis, Pneumonia,Pleural effusion, Bronchectasis
Abdomen Cirrohosis / PHT, Hepato Splenomegaly, Ascites, Hepatomegaly, Splenomegaly	Abdomen Cirrohosis / PHT, Hepato Splenomegaly, Ascites,Hepatomegaly, Splenomegaly
Spotters	
Anemia Pedal Edema Clubbing Cyanosis Psoriasis Tenia versiocolar	Vitiligo Hypo / Hyper thyroidism Rheumatoid Arthritis Hansen's disease

Distribution of Marks for Practical Examinations: Practical examination will be conducted under headsof Practical examination and Viva Voce.

1.	Practical Examination	(160marks)
	LONG CASE	80
	SHORT CASE	50
	SPOTTERS	30
2	Viva –Voce Examination	(40 marks)
	IMAGING	8
	CHARTS	8
	INSTRUMENT	8
	THERAPEUTICS	8
	OSCE	8
	TOTAL MARKS	200 MARKS

	Maximum Marks	**Passing minimum in each component**	**Passing Criteria (Theory & Practical)**
Theory (Paper I & Paper II)	200	100 (40% marks in each of the papers with minimum 50% of marks in aggregate both papers together)	200 [Mandatory 50% marks in theory and practical (practical = practical/ clinical + viva) [theory=theory paper(s) only]
Practical's + viva	200 (160+40)	100 (Minimum 50 % in practical / Viva)	

RECOMMENDED BOOKS:

General MedicineTextbooks:

S. No	**Name of Book**	**Edition**	**Author/Editor**	**Publisher**
1.	Davidson's Principles And Practice of Medicine	23th Edition	Stuart H.Ralston	Elsevier
2.	Kumar & Clark Clinical Medicine	9th Edition	Parveen Kumar, Michael Clark	Elsevier

3.	Hutchinson‘s Clinical Methods	23th Edition	Michael Glynn	Elsevier
4.	Macleod’S Clinical Examination	14th Edition	J.Alastair Innes	Elsevier

Respiratory Medicine

S. No	Title	Author/Editor	Publisher	Edition/Year
1	Harrison’s principles of Internal Medicine	Jameson/ fauci / Kasper/ Hauser/ Longo Loscalzo	Mcgraw Hill	20th Edition
2	Crofton and Douglas Respiratory diseases	Anthony Seaton / Douglas Seaton / A. Gordon Leitch	Blackwell science	5th Edition
3	Toman’s Tuberculosis Case detection, Treatment and Monitoring	Frieden	WHO	2nd Edition

Psychiatry

S. No	Title	Author/Editor	Publisher	Edition/Year
1	Kaplan and Sadock's Synopsis ofPsychiatry	Sadock	Wolters Kluwer	11th Edition
2	International Classification of Diseases– 10	**WHO**	WHO	1994
3	Diagnostic and Statistical Manual ofMental Disorders 5	American Psychiatric Association	American Psychiatric Association	2013
4	Short textbook of Ahuja	Neeraj Ahuja	Jaypee	7th Edition

Dermatology, Venereology & Leprosy

S. No	Name of Book	Author(s)	Edition	Publisher
1	Roxburg Text Book of Dermatology	RonaldMarks,Richard Motley	18th edition	Caroline Makpeace, Jaypee
2	IADVL Concise Textbook Of Dermatology	Vishalakshi Viswanath	4th Edition	Jaypee
3	Andrews' Diseases of the Skin,International Edition: Clinical Dermatology	WilliamJames	12th Edition	Elsevier
4	Thappa Textbook of Dermatology	Devinder Mohan Thappa	4th Edition	Elsevier
5	**Tuberculosis**	S.K Sharma, Alladi Mohan	3rd Edition	Jaypee

Department of General Surgery

Professional Year (Part – II)

Name of the program: MBBS
Name of the subject: General Surgery (SU)
Year of revision: 2019
Paper I Course code: GES003
Paper II Course code: GES004
Practical's Course code: GES205

Orthopaedics – **OR**
Anaesthesiology – **AS**
Dentistry – **DE**
Radio Diagnosis – **RD**
Radiotherapy – **RT**

GOAL

General Surgery

The broad goal of the teaching of undergraduate students in Surgery is to produce graduates capable of delivering efficient first contact surgical care. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practice of general surgery through exposure to general surgical disorders. The student must appreciate the medical management and basic foundations underlying the care of surgical patients.

Orthopedics

The aim of teaching the undergraduate student in Orthopedics and Physical Medicine and Rehabilitation is to impart such knowledge and skills that may enable him/her to diagnose and treat common ailments. He/she shall have ability to diagnose and suspect presence of fracture, dislocation, actual osteomyelitis, acute poliomyelitis and common congenital deformities such as Congenital Talipes Equino Varus (CTEV) and Congenital dislocation of hip (CDH).

Anesthesiology

The broad goal of the teaching of undergraduate students in anesthesia is to produce graduates capable of delivering efficient basic anesthetic and cardiopulmonary resuscitation skills. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the perioperative anesthetic care of a surgical patient. The student should appreciate the basics of airway management and cardiopulmonary resuscitation

Radio diagnosis

The aim of teaching the undergraduate student in radio diagnosis is to impart such knowledge and skills that may enable him to understand principles of image ology and recognize risk and complications of radiologic procedures and the need for protective techniques.

Radiotherapy

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

Dentistry

The aim of teaching the undergraduate student in dentistry is to impart such knowledge and skills that may enable him to understand principles of dentistry and recognize common dental diseases. The student should be able to develop the clinical skills, professional attitudes and knowledge base for the practice of dentistry through exposure to common dental disorders.

COMPETENCIES

General surgery

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 appropriately 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 utilities of antibiotics and universal precautions in surgical practice,
- Knowledge of common malignancies in India and their prevention, early detection and therapy,
- Ability to perform common diagnostic and surgical procedures at the primary care level,
- Ability to recognize, resuscitates, stabilize and provide Basic & Advanced Life Support to patients following trauma,
- Ability to administer informed consent and counsel patient prior to surgical procedures,
- Commitment to advancement of quality and patient safety in surgical practice.

Orthopedics (including Trauma)

The student must demonstrate:

- Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral,
- Knowledge of the medico-legal aspects of trauma,
- Ability to recognize and manage common infections of bone and joints in the primary care setting,
- Ability to recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone diseases and refer appropriately,
- Ability to perform simple orthopedic techniques as applicable to a primary care setting,
- Abilitytorecommendrehabilitativeservicesforcommonorthopedicproblemsacrossall ages.

Anesthesiology

The student must demonstrate ability to:

- Describe and discuss the pre-operative evaluation, assessing fitness for surgery and the modifications in medications in relation to anesthesia /surgery,
- Describe and discuss the roles of Anesthesiologist as a peri-operative physician including pre-medication, endotracheal intubation, general anesthesia and recovery (including variations in recovery from anesthesia and anesthetic complications),
- Describeanddiscussthemanagementofacuteandchronicpain,includinglabouranalgesia,
- Demonstrate awareness about the maintenance of airway in children and adults in various situations,
- Demonstrate the awareness about the indications, selection of cases and execution of cardio-pulmonary resuscitation in emergencies and in the intensive care and high dependency units,
- Choose cases for local / regional anesthesia and demonstrate the ability to administer the same,
- Discuss the implications and obtain informed consent for various procedures and to maintain the documents.

Radio diagnosis

The student must demonstrate:

- Understanding of indications for various radiological investigations in common clinical practice,
- Awareness of the ill effects of radiation and various radiation protective measures to be employed,
- Ability to identify abnormalities in common radiological investigations.

Radiotherapy

The student must demonstrate understanding of:

- Clinical presentations of various cancers,
- Appropriate treatment modalities for various types of malignancies,
- Principles of radiotherapy and techniques.

Dentistry

The student must demonstrate:

- Understanding of the structural and functional basis, principles of diagnosis and management of common problems in dentistry
- Understanding of etiology of dental infections and loss of teeth and their sequelae
- Understanding of malignancy in oral cavity.
- Understanding of Periodontology
- Ability to identify dental diseases.
- Ability to obtain informs consent and counsel patients for dental procedure.

OBJECTIVES

General Surgery

Knowledge:

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

- Describe aetiology, pathophysiology, principles of diagnosis and management of common surgicalproblems including emergencies, in adults and children.
- Define indications and methods for fluid and electrolyte replacement therapy including blood transfusion.
- Define asepsis, disinfection and sterilization and recommend judicious use of antibiotics;
- Describe common malignancies in the country and their management including prevention.
- Enumerate different types of anesthetic agents, their indications mode of administration,
- Contraindications and side effects.

Skills

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

- Perform clinical examination for various surgical conditions.
- Diagnose common surgical conditions both acute and chronic, in adult and children :
- Plan various laboratory tests for surgical conditions and interpret the results:
- Identify and manage patients of hemorrhagic, septicemia and other types of shock;
- Be able to maintain patient air-way and resuscitate; a critically injured patient;
- Monitor patients of head, chest, spinal and abdominal injuries, both in adults and children
- Provide primary care for a patient of burns;
- Acquire principles of operative surgery, including pre-operative, operative and post operative care and monitoring;
- Treat open wounds including preventive measures against tetanus and gas gangrene :
- Diagnose neonatal and pediatric surgical emergencies and provide sound primary care before referring the patient to secondary/tertiary centre
- Identify congenital anomalies and refer them for appropriate management.

In addition to the skills referred above in items (1) to (11), he shall have observed/assisted/performed the Following:

- Incision and drainage of abscess in a simulated environment:
- Suturing in a simulated environment
- Observe blood transfusion in a simulated environment
- Demonstrate techniques of asepsis in a simulated environment
- Observe common surgical procedures emergency & life-saving procedures.

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

The undergraduate teaching in surgery shall 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.

Orthopedics

Knowledge

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

- Acquire a broad - based knowledge of injuries and disorders affecting the musculoskeletal system and its relevance in the overall treatment and rehabilitation programme.
- Recognize fractures, dislocations, injuries to ligaments, muscles and peripheral nerves.
- Recognize life threatening and limb threatening injuries and plan their primary management.
- Identify congenital anomalies involving the musculoskeletal system their genetic back ground, prognosis and broad principles of management.
- Evolve a clear understanding of the nature of infections involving bone and joints - to appreciate the importance of their early recognition and treatment.
- Recognize metabolic bone disease and endocrinological anomalies as it applies to the musculo skeletal system.
- Recognize the nature, principles of investigations and management of degenerative diseases and rheumatologic conditions. Broad principles of rehabilitation and reconstructive surgery shall be introduced during the lectures.
- Recognize neoplasms involving the musculo-skeletal system, their behavior, prognosis and current methods or treatment.
- Develop a sound understanding of widely prevalent conditions in the community such as tuberculosis, poliomyelitis and leprosy and their impact in orthopedic practice.
- Develop understanding of the imaging modalities available today; their indications, advantages and disadvantages.

Skills:

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

- Perform correct application of bandages.
- Perform application of different types of splints for fractures, sprains and other painful affections.
- Perform application of plaster casts and slabs.
- Perform aseptic and non - touch techniques of dressing of wounds.
- Perform application of skin traction.
- Provide proper Care of an acutely injured patient, resuscitation methods and first - aid measures.

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

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

Anesthesiology

Knowledge:

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

- Describe the evolution of Anesthesiology as a modern specialty
- Describe the roles of Anesthesiologist in the medical profession
- Understand the stepwise algorithm approach of BLS and ACLS
- Describe the principles of preoperative evaluation
- Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia
- Describe and discuss the pharmacology of drugs used in induction and maintenance of general anesthesia
- Describe the principles of fluid therapy in the preoperative period
- Describe the principles of monitoring and resuscitation in the recovery room
- Enumerate and describe the criteria for admission and discharge of a patient to an ICU
- Describe principles of providing post-operative pain relief and management of chronic pain

Skills

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

- Observe Pre-anesthetic checkup and prescribe pre-anesthetic medications
- Demonstrate Venepuncture and set up intravenous drip in a simulated environment
- Observe Laryngoscopy and endotracheal intubation,
- Observe Lumbar puncture, spinal anaesthesia and simple nerve blocks
- Demonstrate Simple general anaesthetic procedures under supervision in a simulated environment
- Observe monitoring of patients during anaesthesia and in the post-operative period
- Observe maintenance of anaesthetic records
- Observe cardio-pulmonary resuscitation including recognition of cardiac arrest.
- Demonstrate Counseling and advise regarding various methods of anesthesia in a simulated environment
- Observe Anesthesia for major and minor surgical and other procedures

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration:

The undergraduate teaching in Anesthesia shall 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.

Radio diagnosis

Knowledge

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

- Define radiation and the interaction of radiation and importance of radiation protection.
- Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments
- Describe preparation of patient for common imaging procedures.
- Describe the role of Interventional Radiology in common clinical conditions
- Describe the effects of radiation in pregnancy and the methods of prevention/ minimization of radiation exposure
- Describe the components of the PC & PNDT Act and its medicolegal implications

Skills

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

- Describe the evolution of Radio diagnosis. Identify various radiological equipment in the current era.
- Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder of
    - ENT.
    - Obstetrics & Gynecology.
    - Internal medicine.
    - Surgery.
    - Pediatrics.
    - Common malignancies.

Attitude and communication

- Communication with empathy to patients & patient's attenders.
- To obtain the relevant and essential clinical data to aid in image interpretation.
- To counsel & obtain informed consent from patient & patients attenders

Integration

Horizontal and vertical integration to understand the fundamental principles of radiologic imaging, anatomic correlation and their application in diagnosis.

Radiotherapy

Knowledge

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

- Identify symptoms and signs of various cancers and their steps of investigations and management.
- Explain the effect of radiation therapy on human beings and the basic principles involved in it.
- Know about radio-active isotopes and their physical properties
- Be aware of the advances made in radiotherapy in cancer management and knowledge of various radio therapeutic equipment while treating a patient.

Skill

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

- Take a detailed clinical history of the case suspected of having a malignant disease.
- Assist various specialists in administration of anticancer drugs and in application and use of various radio the rapeutic equipment, while treating a patient.

Attitude and communication

- Communication with empathy to patients & patient's attenders.
- To obtain the relevant and essential clinical data to aid in image interpretation.
- To counsel & obtain informed consent from patient & patients attenders
    - INTEGRATION: Horizontal and vertical integration to enable basic understanding of fundamental principles of radio-the rapeutic procedures

Integration:

Horizontal and vertical integration to enable basic understanding of fundamental principles of radio-therapeutic procedures

Dentistry

Knowledge

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

- Describe the structural and functional basis, principles of diagnosis and management of common problems in dentistry
- Describe the etiology pathophysiology of dental caries and their sequelae
- Describe the etiology pathophysiology of loss of teeth and associated structures , its sequelae and management
- Describe the pathophysiology impact and malocclusion
- Describe the common malignancy in oral cavity and their management including prevention.
- Describe the pataphysiology of Periodontal diseases and management

Skills

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

- Identify common dental diseases – dental caries, missing teeth, malocclusion
- Pre-cancerous and cancerous lesions and periodontal diseases.
- Obtain inform consent and counsel patients for dental hygiene and dental procedure.

Attitude and communication

- Communication with empathy to patients & patient's attenders
- To counsel & obtain informed consent from patient & patients attenders

Integration

The undergraduate teaching in dentistry shall be aligned and integrated horizontally and vertically in order to provide a sound biological basis and holistic approach to the care of the patient with dental disorder.

SYLLABUS

Reference:

Medical Council of India, Competency Based Undergraduate Curriculum for the Indian Medical Graduate, 2018. Volume 3 ; General Surgery Pg 41-55 , OrthopedicsPg130-137 ; AnaesthesiaPg145-151 ; Dentistry

Pg 163-164; Radio Therapy Pg 160-161;Radio Diagnosis Pg 154-155;

Theory Syllabus:

Topic and the competenciesGeneral Surgery

Number	Unit 28 - Abdomen
SU28.1	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias
SU28.3	Describe causes, clinical features, complications and principles of mangament of peritonitis
SU28.4	Describe pathophysiology, clinical features, investigations and principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors
SU28.5	Describe the applied Anatomy and physiology of esophagus
SU28.6	Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus
SU28.7	Describe the applied anatomy and physiology of stomach
SU28.8	Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach
SU28.10	Describe the applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumors of the liver
SU28.11	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis - prophylaxis
SU28.12	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system
SU28.13	Describe the applied anatomy of small and large intestine
SU28.14	Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome
SU28.15	Describe the clinical features, investigations and principles of management of diseases of Appendix including appendicitis and its complications.
SU28.16	Describe applied anatomy including congenital anomalies of the rectum and anal canal
SU28.17	Describe the clinical features, investigations and principles of management of common anorectal diseases

Number	Unit 29 - Urinary System
SU29.1	Describe the causes, investigations and principles of management of Hematuria
SU29.2	Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system
SU29.3	Describe the Clinical features, Investigations and principles of management of urinary tract infections
SU29.4	Describe the clinical features, investigations and principles of management of hydronephrosis
SU29.5	Describe the clinical features, investigations and principles of management of renal calculi
SU29.6	Describe the clinical features, investigations and principles of management of renal tumours
SU29.7	Describe the principles of management of acute and chronic retention of urine
SU29.8	Describe the clinical features, investigations and principles of management of bladder cancer
SU29.9	Describe the clinical features, investigations and principles of management of disorders of prostate
SU29.11	Describe clinical features, investigations and management of urethral strictures

Number	Unit 30 - Penis, Testis and scrotum
SU30.1	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis and carcinoma penis.
SU30.2	Describe the applied anatomy clinical features, investigations and principles of management of undescended testis.

SU30.3	Describe the applied anatomy clinical features, investigations and principles of management of epidydimo-orchitis
SU30.4	Describe the applied anatomy clinical features, investigations and principles of management of varicocele
SU30.5	Describe the applied anatomy, clinical features, investigations and principles of management of Hydrocele
SU30.6	Describe classification, clinical features, investigations and principles of management of tumours of testis

Orthopedics

Number	Topic: Orthopedics
OR1.1	Describe and discuss the principles of pre-hospital care and causality management of a trauma victim including principles of triage
OR1.2	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock
OR1.3	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries
OR1.4	Describe and discuss the principles of management of soft tissue injuries
OR1.5	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip
OR1.6	Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation
OR2.1	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle
OR2.2	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus
OR2.3	Select, prescribe and communicate appropriate medications for relief of joint pain
OR2.4	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovasular deficit
OR2.5	Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury
OR2.6	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius
OR2.7	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability
OR2.8	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient
OR2.9	Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture
OR2.10	Describe and discuss the aetiopathogenesis, mechanism of injury,clinical features, investigations and principles of management of fractures of proximal femur
OR2.11	Describe and discuss the aetiopathogenesis, mechanism of injury,clinical features, investigations and principles of management of (a) Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome
OR2.12	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of
	fat embolism as a complication
OR2.13	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: (a) Fracture both bones leg, (b) Calcaneus,(c) Small bones of foot
OR2.14	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures
OR2.15	Plan and interpret the investigations to diagnose complications of fractures like mal union, non-union, infection, compartmental syndrome

OR2.16	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis
OR3.2	Participate as a member in team for aspiration of joints under supervision
OR3.3	Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy
OR4.1	Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine
OR5.1	Describe and discuss the aetiopathogenesis, clinical features,investigations and principles of management of various inflammatory disorder of joints
OR6.1	Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine(Cervical Spondylosis, Lumbar Spondylosis, PID)
OR7.1	Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease
OR8.1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post Polio Residual Paralysis
OR9.1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient
OR10.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign and malignant bone tumours and pathological fractures
OR11.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves
OR12.1	Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of: a. limbs and spine - Scoliosis and spinal bifida b. Congenital dislocation of Hip, Torticollis,c. congenital talipes equino varus
OR14.1	Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like a. fractures with disabilities b. fractures that require prolonged bed stay c. bone tumours d. congenital disabilities
OR14.2	Demonstrate the ability to counsel patients to obtain consent for various orthopedic procedures like limp amputation, permanent fixations etc..
OR14.3	Demonstrate the ability to convince the patient for referral to a higher centre in various orthopedic illnesses, based on the detection of warning signals and need for sophisticated management.

Anesthesiology

Number	Topic: Anesthesiology
AS1.1	Describe the evolution of Anesthesiology as a modern specialty
AS1.2	Describe the roles of Anesthesiologist 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)
AS1.3	Enumerate and describe the principle of ethics as it relates to Anesthesiology
AS1.4	Describe the prospects of Anesthesiology as a career
AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Basic Life Support in adults, children and neonates

AS3.1	Describe the principles of preoperative evaluation
AS4.1	Describe and discuss the pharmacology of drugs used in induction and maintenance of general anesthesia (including intravenous and inhalation induction agents, opiate and non-opiate analgesics, depolarizing and non-depolarizing muscle relaxants, anticholinesterases)
AS4.2	Describe the anatomy of the airway and its implications for general anesthesia
AS5.1	Enumerate the indications for and describe the principles of regional anesthesia (including spinal, epidural and combined)
AS5.2	Describe the correlative anatomy of the brachial plexus, subarachnoid and epidural spaces
AS6.3	Describe the common complications encountered by patients in the recovery room, their recognition and principles of management
AS8.1	Describe the anatomical correlates and physiologic principles of pain
AS8.3	Describe the pharmacology and use of drugs in the management of pain
AS8.4	Describe the principles of pain management in palliative care
AS8.5	Describe the principles of pain management in the terminally ill
AS9.3	Describe the principles of fluid therapy in the preoperative period
AS9.4	Enumerate blood products and describe the use of blood products in the preoperative period
AS10.1	Enumerate the hazards of incorrect patient positioning
AS10.2	Enumerate the hazards encountered in the perioperative period and steps/techniques taken to prevent them
AS10.3	Describe the role of communication in patient safety
AS10.4	Define and describe common medical and medication errors in anaesthesia

Radio diagnosis

Number	Topic: Radio diagnosis
RD1.1	Define radiation and the interaction of radiation and importance of radiation protection
RD1.3	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder of ENT
RD1.4	Enumerate indications for various common radiological investigations, choose the most appropriate and cost-effective method and interpret findings in common conditions pertaining to disorder in Obstetrics & Gynecology
RD1.5	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in internal medicine
RD1.6	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorderls in surgery
RD1.7	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in Pediatrics
RD1.8	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to common malignancies
RD1.9	Describe the role of Interventional Radiology in common clinical conditions
RD1.10	Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments
RD1.11	Describe preparation of patient for common imaging procedures
RD1.12	Describe the effects of radiation in pregnancy and the methods of prevention/ minimization of radiation exposure
RD1.13	Describe the components of the PC & PNDT Act and its medicolegal implications

Radiotherapy

Number	Topic: Radiotherapy
RT1.1	Describe and discuss definition of radiation, mechanism of action of radiation, types of radiation
RT1.2	Describe and discuss interaction of radiation with matter & measurement of radiation
RT1.3	Enumerate, describe and discuss classification and staging of cancer (AJCC, FIGO etc.)
RT2.1	Describe and discuss radiation protection and personnel monitoring during radiation treatment
RT3.1	Describe and discuss cell cycle and cell survival curve, principles of radiobiology
RT3.2	Describe and discuss synergism of radiation and chemotherapy
RT4.1	Describe and discuss teletherapy machine (Co60/LINAC)
RT4.2	Enumerate, describe and discuss types of treatment plan, basic workflow of D/3DCRT/IMRT/IGRT
RT4.3	Describe and discuss Brachytherapy machine (remote after loading)
RT4.4	Describe and discuss different radioactive isotopes and their use in cancer patients
RT4.5	Describe and discuss role of radiation in management of common malignancies in India (region specific)
RT4.6	Describe and discuss radiotherapy for benign disease
RT4.7	Counsel patients regarding acute and late effects of radiation and supportive care
RT4.8	Describe oncological emergencies and palliative care
RT5.1	Describe and discuss cancer prevention, screening, vaccination, cancer registry

Dentistry

Number	Topic: Dentistry
DE1.1	Enumerate the parts of the tooth
DE1.2	Discuss the role of causative microorganisms in the aetio- pathogenesis of dental caries
DE1.4	Discuss the role of dental caries as a focus of sepsis
DE2.1	Discuss the various causes for partial /complete loss of teeth and associated structures
DE2.2	Discuss the local and systemic sequelae of the above
DE2.4	Enumerate common ways of restoring the edentulous state
DE3.1	Aware of malocclusion and the tissues that cause it
DE3.2	Enumerate the impact of malocclusion on aesthetics, health
DE4.1	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity
DE4.2	Discuss the role of etiological factors in the formation of precancerous /cancerous lesions
DE5.1	Enumerate the parts of the tooth and supporting structures
DE5.2	Enumerate the common diseases that affect the periodontium and identify local and systemic causative factors
DE5.4	Discuss the role of Periodontal disease as a focus of sepsis

Practical Syllabus: Topic and the competencies

GENERAL SURGERY

Number	Topic
SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care
SU3.2	Observe blood transfusions.
SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.
SU4.4	Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.
SU5.2	Elicit, document and present a history in a patient presenting with wounds.
SU8.2	Demonstrate Professionalism and empathy to the patient undergoing General Surgery

SU8.3	Discuss Medico-legal issues in surgical practice
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient
SU9.2	Biological basis for early detection of cancer and multidisciplinary approach in management of cancer
SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately
SU10.2	Describe the steps and obtain informed consent in a simulated environment
SU10.3	Observe common surgical procedures and assist in minor surgical procedures; Observe emergency lifesaving 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
SU13.4	Counsel patients and relatives on organ donation in a simulated environment
SU14.4	Demonstrate the techniques of asepsis and suturing in a simulated environment
SU17.1	Describe the Principles of FIRST AID
SU17.2	Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment
SU17.10	Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment.
SU18.3	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.
SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and 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 investigation of vascular disease
SU27.8	Demonstrate the correct examination of the lymphatic system
SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.
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

ORTHOPAEDICS

Number	Topic
OR1.1	Describe and discuss the Principles of pre-hospital care and Causality management of a trauma victim including principles of triage
OR1.2	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock
OR1.6	Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation
OR2.1	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle
OR2.4	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovasular deficit
OR2.10	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur
OR2.14	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures

OR2.15	Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis
OR3.2	Participate as a member in team for aspiration of joints under supervision
OR3.3	Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy
OR13.1	Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following: i. Above elbow plaster ii. Below knee plaster iii. Above knee plaster iv. Thomas splint v. splinting for long bone fractures vi. Strapping for shoulder and clavicle trauma
OR13.2	Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following : (a) I.V. access central - peripheral (b) Bladder catheterization (c) Endotracheal intubation (d) Splintage
OR14.1	Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like a. fractures with disabilities b. fractures that require prolonged bed stay c. bone tumours d. congenital disabilities
OR14.2	Demonstrate the ability to counsel patients to obtain consent for various orthopedic procedures like limp amputation, permanent fixations etc..
OR14.3	Demonstrate the ability to convince the patient for referral to a higher centre in various orthopedic illnesses, based on the detection of warning signals and need for sophisticated management.

Anesthesiology

Number	Topic
AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Advanced Life Support in adults and children
AS3.2	Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation
AS3.3	Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery
AS3.4	Choose and interpret appropriate testing for patients undergoing Surgery
AS3.5	Determine the readiness for General Surgery in a patient based on the preoperative evaluation
AS3.6	Choose and write a prescription for appropriate premedications for patients undergoing surgery
AS4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia
AS4.4	Observe and describe the principles and the steps/ techniques in maintenance of vital organ functions in patients undergoing surgical procedures

AS4.5	Observe and describe the principles and the steps/ techniques in monitoring patients during anaesthesia
AS4.6	Observe and describe the principles and the steps/ techniques involved in day care anesthesia
AS4.7	Observe and describe the principles and the steps/ techniques involved in anaesthesia outside the operating room
AS5.3	Observe and describe the principles and steps/ techniques involved in peripheral nerve blocks
AS5.4	Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anesthesia
AS5.5	Observe and describe the principles and steps/ techniques involved in caudal epidural in adults and children
AS5.6	Observe and describe the principles and steps/ techniquesinvolved in common blocks used in surgery (including brachial plexus blocks)
AS6.1	Describe the principles of monitoring and resuscitation in the recovery room
AS6.2	Observe and enumerate the contents of the crash cart and describe the equipment used in the recovery room
AS7.1	Visit, enumerate and describe the functions of an Intensive Care Unit
AS7.2	Enumerate and describe the criteria for admission and discharge of a patient to an ICU
AS7.3	Observe and describe the management of an unconscious patient
AS7.4	Observe and describe the basic setup process of a ventilator
AS7.5	Observe and describe the principles of monitoring in an ICU
AS8.2	Elicit and determine the level, quality and quantity of pain and its tolerance in patient or surrogate
AS9.1	Establish intravenous access in a simulated environment
AS9.2	Establish central venous access in a simulated environment

Radio diagnosis

Number	Topic: Radio diagnosis
RD1.2	Describe the evolution of Radiodiagnosis. Identify various radiological equipments In the current era
RD1.3	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder of ENT
RD1.4	Enumerate indications for various common radiological investigations, choose the most appropriate and cost-effective method and interpret findings in common conditions pertaining to disorder in Obstetrics & Gynecology
RD1.5	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in internal medicine
RD1.6	Enumerate indications for various common radiological investigations, choose the most appropriate and cost-effective method and interpret findings in common conditions pertaining to disorders in surgery
RD1.7	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in Pediatrics
RD1.8	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to common malignancies

Radiotherapy

Number	Topic Radiotherapy
RT4.7	Counsel patients regarding acute and late effects of radiation and supportive care
RT4.8	Describe oncological emergencies and palliative care

RT4.9	Display empathy in the care of patients with cancer

Dentistry

Number	Topic Dentistry
DE1.3	Identify Dental caries
DE1.5	Counsel patients with respect to oral hygiene, diet and the direct bearing on systemic health
DE2.3	Identify complete complement of teeth and identify missing teeth
DE2.5	Counsel patients on the importance of restoring missing teeth/tissues with respect to the benefits on oral and systemic health.
DE3.3	Identify malocclusion
DE3.4	Counsel patients with respect to correction of malocclusion and the role it might have on oral health specifically on the TMJ
DE4.3	Identify potential pre-cancerous /cancerous lesions
DE4.4	Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.
DE5.3	Identify Periodontal disease
DE5.5	Counsel patients with respect to oral hygiene, diet and the direct bearing on systemic health and vice versa

ASSESSMENT

Reference:
Medical Council of India, Competency Based Assessment Module for Undergraduate Medical Education Training Program, 2019. pp 7 -21 & 24-30

Internal assessment
Theory IA:

- 7 Internal assessment exams in surgery (one in II MBBS, one in III MBBS – Part I, Five in III MBBS– Part II; Anesthesia, Radio diagnosis, Radiotherapy & Dentistry syllabus will included in surgery internal assessment) and two in orthopedics (one in III MBBS part 1 and one in III MBBS Part II) will be conducted.
- Formative assessment will include day to day assessment, AETCOM, AITO, assignments, quiz and tutorials.

Practical IA:

- 4Internal assessment exams (one in II MBBS, one in III MBBS– Part I, Two in III MBBS – Part II) in General Surgery and One Internal assessment in Orthopedics (III MBBS Part I)will be conducted.
- Formative assessments will include day to day assessment Record book / Logbook, AETCOM.

Note: As per new guidelines under Assessment module mentioned above, Internal Assessment marks will not be added to Final Summative University Examination but will be shown as a separate head under the Subject.

Eligibility to appear for University Examination

Attendance Eligibility	75% in theory and 80% in practical in each subject and in each professional year
Internal Assessment	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)

University examination

Theory Examination
Theory examination consists of two papers (Paper I & II). Each Theory paper will have 100 marks

Question paper pattern -Paper-I

Theory question paper pattern for 100 marks for a duration of 3 hours

MCQ (15 Direct & 5 Case Based):	20 X 1	= 20 marks (5 MSQ's from Orthopedics + 15 MCQ's from General Surgery)
Long Answer Question: Direct/Case Based Essay:	2 X 15	= 30 marks
Short Answer Question (SAQ):	10 X 5	= 50 marks

Question paper pattern - Paper-II

Theory question paper pattern for 100 marks for a duration of 3 hours

MCQ (15 Direct & 5 Case Based):	20 X 1	= 20 marks
Section A (General Surgery) Long Answer Question: Direct/Case Based Essay Short Answer Question (SAQ)	 1 X 15 5 X 5	 = 15 marks = 25 marks
Section B **(Orthopedics, Anesthesiology, Radiodiagnosis, Radiotherapy, Dentistry)** Long Answer Question: Direct/Case Based Essay Short Answer Question (SAQ)	 1 X 15 5 X 5	 = 15 marks = 25 marks

Syllabus for Paper I & II
General Surgery Paper I

Unit 1	Topic :Metabolic response to injury
Unit 2	Topic : Shock
Unit 3	Topic :Blood and blood components
Unit 4	Topic :Burns
Unit5	Topic :Wound healing and wound care
Unit 6	Topic :Surgical infections
Unit 7	Topic :Surgical Audit and Research
Unit 8	Topic :Ethics

Unit 12	Topic :Nutrition and fluid therapy
Unit 14	Topic : Basic Surgical Skills
Unit 15	Topic :Biohazard disposal
Unit 16	Topic : Minimally invasive General Surgery
Unit 17	Topic :Trauma
Unit 18	Topic :Skin and subcutaneous tissue
Unit 19	Topic :Developmental anomalies of face, mouth and jaws
Unit 20	Topic :Oropharyngeal cancer
Unit 21	Topic :Disorders of salivary glands
Unit 22	Topic :Endocrine General Surgery: Thyroid and parathyroid
Unit 23	Topic: Adrenal glands
Unit 25	Topic: Breast

General Surgery Paper II

Unit 13	Topic :Transplantation
Unit24	Topic Pancreas
Unit 26	Topic Cardio-thoracic General Surgery- Chest - Heart and Lungs
Unit 27	Topic Vascular diseases
Unit 28	Topic Abdomen
Unit 29	Topic Urinary System
Unit 30	Topic Penis, Testis and scrotum

Orthopedics, Anesthesiology, Radio diagnosis, Dentistry, Radiotherapy

Unit 10	Topic :Pre, intra and post- operative management & Anaesthesiology
Unit 11	Topic :Anesthesia and pain management & Anaesthesiology
Anesthesiology units Unit -1 to Unit -10	Topic: Anaesthesiology
Orthopedics units Unit-1 to Unit -14	Topic: Orthopedics
Radiodiagnosis units Unit -1	Topic: Radiodiagnosis
Radiotherapy units Unit -1 to Unit -5	Topic: Radiotherapy
Dentistry units Unit -1 to Unit -5	Topic: Dentistry

Topics and marks distribution matrix for PAPER - I

General surgery (100Marks) (15 Direct & 5 Case based = 20 MCQ, 2 Long Essay, 10 Short Essay)

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightage in %	LAQ	SAQ

1.	Unit 1 Metabolic response to injury Unit 2 Shock Unit 3 Blood and blood components	SU 1.1 – SU 1.3 , SU 2.1– SU 2.2, SU3.1	3	15-25	✓	✓
2.	Unit 4 Burns Unit 5 Wound healing and wound care Unit 6 Surgical infections Unit 7 Surgical Audit and Research Unit 8 Ethics & Unit 12 Nutrition and fluid therapy	SU 4.1 – SU 4.3 , SU 5.1 ,SU 5.3– SU 5.4 , SU 6.1 – SU 6.2 , SU 7.1 – SU 7.2 , SU 8.1 ,SU 12.1 – SU 12.3	3	15-25		✓
3.	Unit 14 Basic Surgical Skills Unit 15 Biohazard disposal Unit 16 Minimally invasive General Surgery Unit 17 Trauma	SU 14.1 – SU 14.3 , SU 15.1, SU 16.1, SU 17.1 –SU 17.9	5	10-20	✓	✓
4.	Unit 18 Skin and subcutaneous tissue Unit 19 Developmental anomalies of face, mouth and jaws Unit 20 Oropharyngeal cancer Unit 21 Disorders of salivary glands	SU 18.1- SU 18.2 , SU 19.1- SU 19.2 , SU 20.1 – SU 20.2, SU21.1 – SU 21.2	4	10-20		✓
5.	Unit 22 Endocrine General Surgery: Thyroid and parathyroid Unit 23 Adrenal glands Unit 25Breast	SU 22.1 –SU22.2 , SU 22.4 – SU 22.6, SU 23.1 – SU 23.3, SU 25.1 –SU 25.3	5	25-35	✓	✓
6.	AETCOM			5		✓

Topics and marks distribution matrix for PAPER II

SECTION- A General Surgery - 50 Marks

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightage in %	LAQ	SAQ
1	Unit 13 Transplantation	SU 13.1 –SU 13.3	1	10-25		✓
2	Unit 26 Cardio-thoracic General Surgery- Chest – Heart and Lungs	SU 26.1 -26.4				✓
3	Unit 27 Vascular diseases	SU 27.1 , SU 27.3 – SU 27.7			✓	✓
4	Unit 24Pancreas Unit 28Abdomen	SU 28.1, SU 28.3 –SU 28.8 , SU 28.10 – SU 28.17 , SU 24.1 – SU 24.3	6	10-25	✓	✓
5	Unit 29 Urinary System UNIT 30 Penis, Testis and scrotum	SU29.1 – SU 29.9 , SU 29.11 , SU 30.1 – SU 30.6	3	10-25	✓	✓

SECTION B – Orthopedics, Anesthesiology, Radio diagnosis, Radiotherapy, Dentistry - 50 Marks

S. No	TOPICS	MCI Competency Number	No. of MCQs	Weightage in %	LAQ	SAQ
1.	UNIT-10 Pre, intra and post- operative management & Anesthesiology UNIT-11 Anesthesia and pain management &Anesthesiology	SU 10.1, AS 3.1,AS 6.3, AS 9.3,AS 9.4, AS 10.1- AS 10.4, SU 11.1 – SU 11.2 , SU 11.4- SU 11.6 ,AS 1.1 – AS 1.4, AS 2.2, AS 4.1, AS4.2, AS 5.1, AS 5.2, AS 8.1, AS 8.3- AS 8.5,	3	10-20		✓
2.	Topic : Radio diagnosis	RD 1.1, RD 1.3- RD1.13,				✓
3.	Topic: Radiotherapy	RT 1.1- RT1.3,RT 2.1,RT 3.1-3.2, RT 4.1- 4.8, RT 5.1,				✓
4.	Topic : Dentistry	DE1.1,1.2,1.4,2.1,2.2,2.4,3.1,3.2,4.1,4.2,5.1,5.2,5.4				✓
5.	Topic: Orthopaedics	OR 1.1 -1.6, OR 2.1 -2.16 , OR 3.1 – 3.3, OR 4.1, OR 5.1, OR 6.1, OR 7.1, OR 8.1, OR 9.1, OR 10.1, OR 11.1, OR 12.1, OR 14.1-14.3	7	20-30	✓	✓

Practical Syllabus for University Clinical Exam

LONG CASE	SHORT CASE	OSCE	VIVA
Thyroid	Ulcer foot	• X-Rays • Instrument • Specimens	Operative Surgery
Breast cancer	Subcutaneous swelling		
Varicose vein	Skin malignancy		
Peripheral vascular disease	Soft tissue sarcoma		
Gastric outlet obstruction	Hydrocele		
Obstructive jaundice	Cervical lymphnode swelling		
Inguinal hernia	Thyroglossal cyst		
Right hypochondrial Mass	Parotid swelling		
Splenomegaly	Submandibular salivary gland swelling		
Renal cell Carcinoma	Oral cavity malignancy		
Right Iliac Fossa Mass	Penile carcinoma		
Left Iliac Fossa Mass	Testicular tumours		
Hypogastric Mass	**Orthopaedics** • Osteoarthritis knee joint • Non union of long bones • Mal Union of long bones • Chronic osteomyelitis • Synovitis of knee joint • Inflammatory Poly arthritis • Inter vertebral disc prolapse with deficit • Congenital Talipes EquinoVarus • Post polio foot and ankle deformities • Post traumatic joint contractures • Peripheral nerve injury (median, ulnar, radial, brachial plexus and common peroneal nerve)		
Epigastric Mass			

Distribution of Marks for Practical Examinations

Practical examination will be conducted under heads of Practical examination and Viva Voce.

Practical Examination	**(150 marks)**
LONG CASE	1 X 75 = 75
SHORT CASE (3 CASES) – (2- Surgery Cases + 1- Orthopedics case)	3 X 25 = 75
OSCE - STATION	(50 marks)
X-RAYS	15
INSTRUMENT	15
SPECIMENS	10
VIVA Examination OPERATIVE SURGERY	10
TOTAL MARKS	200 MARKS

RECOMMENDED BOOKS:
Textbooks: General Surgery

S. No	Name of Book	Author(s)	Edition	Publishers
1.	Bailey & Love's Short Practice of Surgery	Norman Williams, P Ronan O'Connell, Andrew McCaskie	27th Edition	CRC Press
2.	Manipal Manual of Surgery	K.R Shenoy	4th edition	CBS Publishers & Distributors
3.	SRB's Manual of Surgery	SriramBhat Paperback Bunko	6th edition	Jaypee Brothers Medical Publishers
4.	Manual On Clinical Surgery	Das S	14th edition	Author Self
5.	Hamilton Bailey's Physical Signs: Demonstrations of Physical Signs inClinical Surgery,	John S.P Lumley, Anil K. D'Cruz , Jamal J. Hoballah, Carol E.H. Scott-Connor	19th Edition	CRC Press

	Maximum Marks	Passing minimum in each component	Passing Criteria (Theory & Practical)
Theory (Paper I & Paper II)	200	100 (40% marks in each of the papers with minimum 50% of marks in aggregate both papers together)	200 [Mandatory 50% marks in theory and practical (practical = practical/ clinical + viva) [theory=theory paper(s) only]
Practical's + viva	200	100	

Textbooks: Orthopedics

S. No	Name of Book	Author(s)	Edition	Publishers
1.	Outline of Orthopedics	Crawford John Adams	13th edition	Churchill Living stone
2.	Outline of fractures	Crawford John Adams	12th edition	Churchill Livingstone
3.	Textbook of Orthopedics	Mayilvahanan Natarajan	8th edition	Wolters Kluwer
4.	System of Orthopedics	Graham Apley	10th edition	CRC press
5.	Mercer's Orthopedic Surgery	Robert B Duthie and George Bentley	9th edition	Arnold
6.	Bailey & Love's Short Practice of Surgery	Norman Williams, P Ronan O'Connell, Andrew McCaskie	27th edition	CRC Press

Textbooks: Anesthesiology

S. No	Name of Book	Author(s)	Edition	Publishers
1.	Lee's Synopsis of Anesthesia	Rushman and Davies	12th	Elsevier
2.	Clinical Anesthesiology by Morgan	John F. Butterworth IV, David C. Mackey,	7th	Lange
3.	ICU Book, Paul Marino	Paul L Marino	4th	Wolters Kluwer
4.	Miller's Anesthesia	Ronald Miller Lars Eriksson	8th	Elsevier
5.	Clinical Anesthesia by Barash, Cullen and Stoelting	Bruce F **Cullen**, Robert K **Stoelting** Paul G **Barash**	5th	Lippincott, Williams and Wilkins

Textbooks: Radio diagnosis

S. No	Name of Book	Author(s)	Edition	Publishers
1.	Radiology and imaging for medical students.	David Sutton	7th	Churchill Livingstone
2.	Textbook of Radiology and Imaging	David Sutton	7th	Churchill Livingstone
3.	Diagnostic Radiology – A textbook of medical imaging.	Grainger & Allison's	6th	Churchill Livingstone ELSEVIER
4.	Diagnostic Ultrasound	Carol.MRumack	5th	ELSEVIER

Textbooks: Radiotherapy

S. No	Name of Book	Author(s)	Edition	Publishers
1.	Bailey & Love's Short Practice of Surgery	Norman Williams, P Ronan O'Connell, Andrew McCaskie	27th Edition	CRC Press
2.	Manipal Manual of Surgery	K.R Shenoy	4th edition	CBS Publishers & Distributors
3.	SRB's Manual of Surgery	Sriram Bhat Paperback Bunko	6th edition	Jaypee Brothers Medical Publishers

Textbook: Dentistry

S. No	Name of Book	Author(s)	Edition	Publishers
1.	Bailey & Love's Short Practice of Surgery	Norman Williams, P Ronan O'Connell, Andrew McCaskie	27th Edition	CRC Press
2.	Manipal Manual of Surgery	K.R Shenoy	4th edition	CBS Publishers & Distributors
3.	SRB's Manual of Surgery	Sriram Bhat Paperback Bunko	6th edition	Jaypee Brothers Medical Publishers

INTERNSHIP

Name of the program: MBBS
Name of the subject / Course: Internship
Year of revision: 2019

GOAL: The goal of the internship programme is to train medical students to fulfill their roles as doctors of first contact in the community.

OBJECTIVES: At the end of the internship period, the medical graduate will possess all competencies required of an Indian Medical Graduate, namely:

- Independently provide preventive, promotive, curative and palliative care with compassion,
- Function as leader and member of the health care team and health system,
- Communicate effectively with patients, families, colleagues and the community,
- Be certified in diagnostic and therapeutic skills in different disciplines of medicine taught in the undergraduate programme.
- Be a lifelong learner committed to continuous improvement of skills and knowledge,
- Be a professional committed to excellence and is ethical, responsive and accountable to patients, community and profession.

Time Distribution

General Surgery including 15 days Anaesthesia	2months

ASSESSMENT

- The intern shall maintain a record of work in a log book, which is to be verified and certified by the medical officer under whom he/she works. Apart from scrutiny of the record of work, assessment and evaluation of training shall be undertaken by an objective approach using situation tests in knowledge, skills and attitude during and at the end of the training.
- Based on the record of work and objective assessment at the end of each posting, the Dean/Principal shall issue cumulative certificate of satisfactory completion of training at the end of internship, following which the University shall award the MBBS degree or declare him eligible for it.
- Full registration shall only be given by the State Medical Council/Medical Council of India on the award of the MBBS degree by the University or its declaration that the candidate is eligible for it.

Internship – Competencies – Discipline Related

Name of the subject / Course: Department of General Surgery / Internship
Course code: GES351

GOAL: The aim of teaching the undergraduate student in General Surgery is to impart such knowledge and skills that may enable him to diagnose and treat common surgical ailments. He/she shall have ability to diagnose and suspect with reasonable accuracy all acute and chronic surgical illnesses

COMPETENCIES:

THERAPEUTIC- An intern must perform or assist in:

a) Venesection or venous access
b) Tracheostomy and endotracheal intubation
c) Catheterization of patients with acute retention or trocar cystostomy
d) Drainage of superficial abscesses
e) Basic suturing of wound and wound management (including bandaging)

f) Biopsy of surface tumours
g) Perform vasectomy

Skill that an intern should be able to perform under supervision:

a) Advise about prognosis of acute & chronic surgical illnesses, head injury, trauma, burns and cancer. Counsel patients regarding the same.
b) Advise about rehabilitation of patients after surgery and assist them for early recovery.
c) Intern should be able to demonstrate understanding of World Health Organization cause of death reporting and data quality requirements.
d) Intern should be able to demonstrate understanding of the use of national and sub-national cause of death statistics.

An intern must have observed or preferably assisted at the following operations/procedures:

a) Resuscitation of critical patients
b) Basic surgical procedures for major and minor surgical illnesses
c) Wound dressings and application of splints
d) Laparoscopic/ Minimally Invasive surgery
e) Lymph node biopsy

Certifiable Procedural Skills:

A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate.
I - Independently performed on patients,
O - Observed in patients or on simulations,
D - Demonstration on patients or simulations and performance under supervision in patients

Specialty	Procedure
General Surgery	• Basic suturing(I) • Basic wound care(I) • Basic bandaging(I) • Incision and drainage of superficial abscess(I) • Early management of trauma (I) and trauma life support (D)

Department of Orthopaedics

Total teaching hours for MBBS Second Professional year

Subject	Clinical Posting hours	Skill lab hours	Total hours
Orthopaedics	**24**	**6**	**30**

The clinical postings in second professional shall be 15hours per week (3hours per day from Monday to Friday

At least 3hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories

Orthopaedics topics for MBBS second professional

Sl. no	Topics
1	Skeletal Trauma, Poly trauma
2	Fractures
3	Musculoskeletal Infection
4	Skeletal Tuberculosis

Bedside clinics in Orthopaedics for MBBS Second professional year

Topics	Number	COMPETENCIES	Hours
Skeletal Trauma, Poly trauma	1.1	Elicit, document and present a history in a patient presenting with skeletal trauma	9
Fractures	1.5 2.15	Describe and demonstrate the clinical examination of patient presenting with fractures, dislocation and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.	12
Musculoskeletal Infection	3.1	Demonstrate the correct examination of the patient with Musculoskeletal Infection and enumerate and describe the investigation for musculoskeletal infection	6
Skeletal Tuberculosis	4.1	Demonstrate the correct technique to examine the patient with Skeletal Tuberculosis.	3

Clinical postings and skill lab

1ST week

	Competency number		Method of Assessment
OPD		Observe and record new and follow up cases in OPD (3 hours)	Viva voce/ OSCE
Post Admission day ward rounds		Follow up of assigned cases(1hr), Bedside clinics (General scheme of History taking) SGD,DOAP(1hr), SDL, Discussion and closure (1hr)	Viva voce/ OSCE
OT		Observe OT procedures and document in the logbook with Discussion(3hrs)	Viva voce/ OSCE
Ward		Follow up of assigned cases(1hr), Bedside clinics (General physical examination) SGD, DOAP(1hr), SDL, Discussion and closure (1hr)	Viva voce/ OSCE
Skill lab	13.1	Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in applying compression bandage. Small group discussion (1 hr) DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE with Simulation based assessment

2nd week

	Competency number		Method of Assessment
OPD		Observe and record new and follow up cases in OPD(3hrs)	Viva voce/ OSCE
Post Admission day ward rounds		Follow up of assigned cases(1hr), Bedside clinics (History taking and physical examination) SGD,DOAP(1hr), Discussion and closure (1hr)	Viva voce/ OSCE
OT		Observe OT procedures and document in the logbook with Discussion(3hrs)	Viva voce/ OSCE
Ward		Follow up of assigned cases(1hr), Bedside clinics (History taking and physical examination) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	Viva voce/ OSCE
Skill lab	13.1	Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in splint application for fractured limb. Small group discussion (1 hr), DOAP(1 hr), SDL, Discussion and closure (1 hr)	OSCE with Simulation based assessment

DEPARTMENT OF ORTHOPAEDICS

COURSE DESCRIPTION

GOAL:

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

COMPETENCIES:

The student must demonstrate:

1. Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first

Contact care prior to appropriate referral,

2. Knowledge of the medico-legal aspects of trauma,

3. Ability to recognize and manage common infections of bone and joints in the primary care

Setting,

4. Recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone

Diseases and refer appropriately,

5. Ability to perform simple orthopaedic techniques as applicable to a primary care setting,

6. Ability to recommend rehabilitative services for common orthopaedic problems across all

Ages.

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.

COURSEOUTCOMES

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

A. Knowledge

The student shall be able to:

1. Explain the principles of recognition of bone injuries and dislocations;
2. Apply suitable methods to detect and managed common infections of bones and joints;
3. Identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation;
4. Recognize metabolic bone diseases as seen in this country;
5. Explain etiology, pathogenesis, manifestations, and diagnosis of neoplasm affecting bones
6. Enumerate few recent advances in Orthopaedics.

B. Skills

1. Detect sprains and deliver first aid measures for common fractures and sprains and manage

Uncomplicated fractures of clavicle, Colle's fracture, and phalanges fractures;

2. Use technique of splinting, plaster, and immobilization;

3. Manage common bone infections

4. Describe indications for sequestrectomy, amputations & corrective measures for bone deformities;

5. Advice aspects of rehabilitation for polio, cerebral palsy and amputation

C. Application

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

ORTHOPAEDICS

Total teaching hours for MBBS Third Professional year (Part II)

Subject	Lecture (hours)	Tutorials/Seminars/Integrated teaching (hours)	Self-Directed Learning (hours)	Clinical Posting (hours)	Skill lab (hours)	Total
Orthopaedics	**20**	**25**	**5**	**30**	**6**	**86**

The clinical postings in third professional part II shall be 18hours per week (3hours per day from Monday to Saturday)

Atleast 3hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories

Orthopaedics topics for MBBS Third Professional year (Part II)

SL. NO.	TOPIC	Lectures (hours)	Tutorials/Seminars /Integrated teaching (hours)
1.	**RHEUMATOID ARTHRITIS AND ASSOCIATED INFLAMMATORY DISORDERS**	**3**	**4**
2.	**DEGENERATIVE DISORDERS**	**1**	**1**
3.	**METABOLIC BONE DISORDERS**	**2**	**3**
4.	**POLIOMYELITIS**	**1**	**1**
5.	**CEREBRAL PALSY**	**1**	**1**
6.	**BONE TUMOURS**	**6**	**3**
7.	**PERIPHERAL NERVE INJURIES**	**3**	**4**
8.	**CONGENITAL LESIONS**	**3**	**4**
9.	**PROCEDURAL SKILLS**		**2**

10.	**COUNSELLING SKILLS**		**2**

COURSE CONTENTS:

OR 1.1- Competency as represented in the MCI Competency Based Undergraduate Curriculum for the Indian Medical Graduate Volume – III 2018, where first two alphabets OR represents subject Orthopaedics and number following alphabet reflects topic number.

Topics	Number	COMPETENCIES	Domain K/S/A/C	Level K/KH/SH/P	Core	Suggested Teaching Learning method	SuggestedAssessmentmethod	Vertical Integration(VI)	Horizontal integration(HI)
RHEUMATOID ARTHRITIS AND ASSOCIATED INFLAMMATORY DISORDERS	OR 5.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints	K	KH	Y	Lecture/ Small group discussion/ Bed side clinic	Written and VivaVoce	✓ PA,IM, PH	-----
DEGENERATIVE DISORDERS	OR 6.1	Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)	K	KH	Y	Lecture/ Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----
METABOLIC BONE DISORDERS	OR 7.1	Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease	K	KH	Y	Lecture/ Small group discussion/ Bed side clinic	Written and VivaVoce	✓ AN, PA,RD	-----
POLIOMYELITIS	OR 8.1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post-Polio Residual Paralysis	K	KH	Y	Lecture/ Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----

CEREBRAL PALSY	OR 9.1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient	K	KH	Y	Lecture/ Small group discussion	Written and VivaVoce	-----	-----
BONE TUMOURS	OR 10.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign and malignant bone tumours and pathological fractures	K	KH	Y	Lecture/ Small group discussion/ Bed side clinic	Written and VivaVoce	✓ AN, PA,RD	-----
PERIPHERAL NERVE INJURIES	OR 11.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves	K	KH	Y	Lecture/ Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----
CONGENITAL LESIONS	OR 12.1	Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of: a. limbs and spine - Scoliosis and spinal bifida b. Congenital dislocation of Hip, Torticollis, c. congenital talipesequino varus	K	KH	Y	Lecture/ Small group discussion/ Bed side clinic	Written and VivaVoce	-----	-----

PROCEDURAL SKILLS	OR 13.1	Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following: i. Above elbow plaster ii. Below knee plaster iii. Above knee plaster iv. Thomas splint v. splinting for long bone fractures vi. Strapping for shoulder and clavicle trauma	K	KH/ SH	Y	Video assisted Lecture/ Small group discussion/ Skill lab sessions	Written and VivaVoce	-----	-----
	OR 13.2	Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following : (a) I.V. access central - peripheral (b) Bladder catheterization c)Endotracheal intubation (d)Splintage	K	KH/ SH	Y	Videoassisted Lecture/ Small group discussion/ Skill lab sessions	Written and VivaVoce	-----	-----
COUNSELLING SKILLS	OR 14.1	Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopaedic illnesses like a. fractures with disabilities b. fractures that require prolonged bed stay c. bone tumours d. congenital disabilities	K	KH/ SH	Y	Videoassisted Lecture/ Small group discussion/ Skill lab sessions	Written and VivaVoce	-----	-----
	OR 14.2	Demonstrate the ability to counsel patients to obtain consent for various orthopaedic procedures like limp amputation, permanent fixations etc.	K	KH/ SH	Y	Videoassisted Lecture/ Small group discussion/ Skill lab sessions	Written and VivaVoce	-----	-----

	OR 14.3	Demonstrate the ability to convince the patient for referral to a higher centre in various orthopaedic illnesses, based on the detection of warning signals and need for sophisticated management	K	KH/ SH	Y	Videoassisted Lecture/ Small group discussion/ Skill lab sessions	Written and VivaVoce	-----	-----

* PA - Pathology, PH – Pharmacology, RD - Radio diagnosis, IM - General Medicine

Theory: Competencies with Specific Learning Objectives (SLOs) and teaching learning methods (TLM)

Section	Competencies with SLOs At the end of the course, Third professional part IIMBBS student should be able to	Lecture15	Seminar 20	SDL5
RHEUMATOID ARTHRITIS AND ASSOCIATED INFLAMMATORY DISORDERS	**OR5.1 Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints**			
	a) Rheumatoid Arthritis 1. Define Rheumatoid Arthritis 2.Describe the etiopathogenesis of Rheumatoid Arthritis	✓	✓	-
	3. Describe the clinical features of Rheumatoid Arthritis 4. Discuss EULAR criteria to diagnose Rheumatoid Arthritis 5.Discuss the investigations of Rheumatoid Arthritis 6. Discuss the principles of management of Rheumatoid Arthritis 7.Discuss the deformities of hand and foot in Rheumatoid Arthritis **b) Seronegative arthritis.** 1. Define Seronegative arthritis. 2. Describe the etiopathogenesis of Seronegative arthritis. 3. Describe the clinical features of Seronegative arthritis. 4. Discuss the investigations of Seronegative arthritis. 5. Discuss the principles of management of Seronegative arthritis. **c) Gout** 1.Define Gout. 2. Describe the etiopathogenesis of Gout 3. Describe the clinical features of Gout 4.Discuss the investigations of Gout. 5. Discuss the principles of management of Gout **d) Pseudogout** 1.Define Pseudo-Gout. 2. Describe the etiopathogenesis of Pseudo-Gout 3. Describe the clinical features of Pseudo-Gout 4.Discuss the investigations of Pseudo-Gout. 5. Discuss the principles of management of Gout			

DEGENERATIVE DISORDERS	**OR6.1 Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)**			
	a) Cervical spondylosis 1.Define Cervical spondylosis 2.Describe the etiopathogenesis of Cervical spondylosis . 3. Describe the clinical features of Cervical spondylosis . 4. Discuss the investigations of Cervical spondylosis . 5. Discuss the principles of management of Cervical spondylosis b) Lumbar spondylosis 1.Define Lumbar spondylosis 2.Describe the etiopathogenesis of Lumbar spondylosis . 3. Describe the clinical features of Lumbar spondylosis . 4. Discuss the investigations of Lumbar spondylosis . 5. Discuss the principles of management of Lumbar spondylosis c) Posterior Intervertebral Disc Prolapse 1.Define Posterior Intervertebral Disc Prolapse 2.Describe the etiopathogenesis of Posterior Intervertebral Disc Prolapse. 3. Describe the clinical features of Posterior Intervertebral Disc Prolapse. 4. Discuss the investigations of Posterior Intervertebral Disc Prolapse 5. Discuss the principles of management Posterior Intervertebral Disc Prolapse	✓	✓	
METABOLIC BONE DISORDERS	**OR7.1 Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, Osteomalacia, rickets, Paget's disease**			
	a) Osteoporosis 1.Define Osteoporosis 2.Describe the etiopathogenesis of Osteoporosis . 3. Describe the clinical features of Osteoporosis . 4. Discuss the investigations of Osteoporosis . 5. Discuss the principles of management of Osteoporosis b) Osteomalacia	✓	✓	

	1.Define Osteomalacia 2.Describe the etiopathogenesis of Osteomalacia . 3. Describe the clinical features of Osteomalacia . 4. Discuss the investigations of Osteomalacia. 5. Discuss the principles of management of Osteomalacia c) Rickets 1.Define Rickets 2.Describe the etiopathogenesis of Rickets. 3. Describe the clinical features of Rickets . 4. Discuss the investigations of Rickets . 5. Discuss the principles of management of Rickets d) Paget's Disease 1.Define Pagets Disease 2.Describe the etiopathogenesis of Pagets Disease. 3. Describe the clinical features of Pagets Disease . 4. Discuss the investigations of Pagets Disease . 5. Discuss the principles of management of Pagets Disease			
POLIOMYELITIS	**OR8.1 Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post-Polio Residual Paralysis**			

	1. Describe etiopathogenesis of polio 2. Describe natural history of polio 3.Describe evaluation of case of PPRP 4.Describe orthopaedic management of case of PPRP	✓	✓	
CEREBRAL PALSY	**OR9.1 Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient**			
	1.Define cerebral palsy 2.Classsify types 3.Evaluation of case of cerebral palsy 4.Describe management of cerebral palsy	✓	✓	
BONE TUMOURS	**OR10.1 A Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign bone tumors and pathological fractures**			
	1.describe classification of bone tumours, 2.decribe etiopathogenesis, clinical features and management of a.Osteochondroma, b.Osteoid osteoma c.Osteoblastoma, d.Enchondroma, e.Chondroblastoma, f. Fibrous dysplasia g. GCT	✓	✓	
BONE TUMOURS	**OR10.1B Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of malignant bone tumours (A.Osteosarcoma, B.Ewings sarcoma, C. Chondrosarcoma, D. Multiple myeloma)**			
	a) 1.Define malignant bone tumours 2.Describe types of osteosarcoma and its clinical features 3.Describe etiopathogenesis 4.Explain the investigation and management b)1. Define Ewing's sarcoma 2.Describe clinical feature of Ewing's sarcoma 3.Describe etiopathogenesis of Ewing's sarcoma 4.Enumerate investigation for Ewing's sarcoma 5.Explain how to manage Ewing's sarcoma c) 1.Define chondrosarcoma and its clinical features	✓	✓	
	2.Describe etiopathogenesis of chondrosarcoma 3.Enumerate investigation for chondrosarcoma 4.Explain how to manage these chondrosarcoma d)1.Define Multiple Myeloma and mention its clinical feature 2.Describe etiopathogenesis of Ewing's sarcoma 3.Enumerate investigation for Ewing's sarcoma 4.Describe the management of Ewing's sarcoma			
PERIPHERAL NERVE INJURIES	**OR11.1 Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves**			

	a) Radial Nerve injury 1. Describe the anatomy and course of Radial Nerve 2. Describe etiopathogenesis of radial nerve injury 3. Describe clinical feature of radial nerve injury 4. Enumerate investigation for radial nerve injury 5. Describe the management of radial nerve injury b) Ulnar Nerve injury 1. Describe the anatomy and course of Ulnar Nerve 2. Describe etiopathogenesis of Ulnar nerve injury 3. Describe clinical feature of Ulnar nerve injury 4. Enumerate investigation for Ulnar nerve injury 5. Describe the management of Ulnar nerve injury c) Median Nerve injury 1. Describe the anatomy and course of Median Nerve 2. Describe etiopathogenesis of Median nerve injury 3. Describe clinical feature of Median nerve injury 4. Enumerate investigation for Median nerve injury 5. Describe the management of Median nerve injury d) Lateral Popliteal nerve injury 1. Describe the anatomy and course of Lateral Popliteal Nerve 2. Describe etiopathogenesis of Lateral Popliteal nerve injury 3. Describe clinical feature of Lateral Popliteal nerve injury 4. Enumerate investigation for Lateral Popliteal nerve injury 5. Describe the management of Lateral Popliteal nerve injury e) Sciatic Nerve injury 1. Describe the anatomy and course of Sciatic Nerve 2. Describe etiopathogenesis of Sciatic nerve injury 3. Describe clinical feature of Sciatic nerve injury 4. Enumerate investigation for Sciatic nerve injury 5. Describe the management of Sciatic nerve injury	✓	✓	
CONGENITAL LESIONS	**OR12.1 Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of:** **a. limbs and spine - Scoliosis and spinal bifida** **b. Congenital dislocation of Hip, Torticollis,** **c. congenital talipes equinovarus**			
	A). limbs and spine - Scoliosis and spinal bifida i)Scoliosis 1. Describe etiopathogenesis of. Scoliosis 2.Describe clinical feature of Scoliosis 3.Enumerate investigation for Scoliosis 4.Describe the management of Scoliosis ii) Spinal bifida 1. Describe etiopathogenesis of Spinal bifida 2.Describe clinical feature of Spinal bifida	✓	✓	

	3.Enumerate investigation for Spinal bifida 4.Describe the management of Spinal bifida b. Congenital dislocation of Hip, Torticollis, i) Congenital dislocation of Hip 1. Describe etiopathogenesis of Congenital dislocation of Hip 2.Describe clinical feature of Congenital dislocation of Hip 3.Enumerate investigation for Congenital dislocation of Hip 4.Describe the management of Congenital dislocation of Hip ii) Torticollis 1. Describe etiopathogenesis of Torticollis 2.Describe clinical feature of Torticollis 3.Enumerate investigation for Torticollis 4.Describe the management of Torticollis c. congenital talipes equinovarus 1. Describe etiopathogenesis of congenital talipes equinovarus 2.Describe clinical feature of congenital talipes equinovarus 3.Enumerate investigation for congenital talipes equinovarus 4.Describe the management of congenital talipes equinovarus			
PROCEDURAL SKILLS	**OR13.1 Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following:** i. Above elbow plaster ii. Below knee plaster iii. Above knee plaster iv. Thomas splint v. splinting for long bone fractures vi. Strapping for shoulder and clavicle trauma		✓	
	OR13.2 Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following : (a) I.V. access central -peripheral (b) Bladder catheterization (c) Endotracheal intubation (d) Splintage		✓	
COUNSELLING SKILLS	**OR14.1 Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopaedic illnesses like** a. fractures with disabilities b. fractures that require prolonged bed stay c. Bone tumours d. Congenital disabilities		✓	
	OR14.2 Demonstrate the ability to counsel patients to obtain consent for various orthopaedic procedures like limp amputation, permanent fixations etc.		✓	
	OR14.3 Demonstrate the ability to convince the patient for referral to a higher centre in various orthopaedic illnesses, based on the detection of warning signals and need for sophisticated management		✓	

Certifiable procedural skills

The undergraduate learns

1. Application of basic splints and slings (I)
2. Basic fracture and dislocation management (O)
3. Compression bandage (I)

I- Independently performed on patients,
O- Observed in patients or on simulations,

List and number of sessions for skill certification:

Competency	Number required to certify	Hours (Each session=1 hr)
Application of basic splints and slings	3	1
Basic fracture and dislocation management (O)	3	1
Compression bandage (I)	3	1

Note: Learners must have completed the required certifiable competencies for that phase of trainingtobeeligibleforappearingatthefinaluniversityexaminationof that subject.

AETCOM

Attitude, Ethics and Communication (AETCOM) Competencies" for the Indian Medical Graduate 2018

Learning modules for Professional Year IV

Number of modules:1; Number of hours:4

One modules of the AETCOM as prescribed in the MCI AETCOM booklet will be conducted by department of Orthopaedics is given below

Module 4.9: Medical Negligence

Competencies addressed:

The student should be able to:	Level
1. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues pertaining to medical negligence	KH
2. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues pertaining to malpractice	KH

Bedside Clinics in Orthopaedics for MBBS Third Professional year (Part II)

Topics	Number	COMPETENCIES	Hours
RHEUMATOID ARTHRITIS AND ASSOCIATED INFLAMMATORY DISORDERS	OR5.1	Elicit, document, present a history and clinical findings in a patient presenting with multiple joint pain and swelling	
DEGENERATIVE DISORDERS	OR6.1	Elicit, document, present a history and clinical findings in a patient presenting with degenerative spine disorders	
METABOLIC BONE DISORDERS	OR7.1	Elicit, document, present a history and clinical findings in a patient presenting with metabolic bone disorders	
POLIOMYELITIS	OR8.1	Elicit, document, present a history and clinical findings in a patient presenting with post-polio residual paralysis	
BONE TUMOURS	OR10.1	Elicit, document, and present a history and clinical findings in a patient presenting with swelling arising from bone.	
PERIPHERAL NERVE INJURIES	OR11.1	Elicit, document, present a history and clinical findings in a patient presenting with peripheral nerve injuries	
CONGENITAL LESIONS	OR12.1	Elicit, document, present a history and clinical findings in a child presenting with deformity of foot	

Clinical postings and skill lab

1st week

		Method of Assessment
OPD	Observe and record new and follow up cases in OPD(2hrs) AETCOM (1hr)	OSCE
Post Admission day ward rounds	Follow up of assigned cases(1hr), Bedside clinics (History taking and physical examination of patient with multiple joint pain and swelling) SGD,DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE
OT	Observe OT procedures and document in the logbook with Discussion(3hrs)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking and physical examination of patient with degenerative joint or spine) SGD, DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE

Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking and physical examination of patient presenting with clinical manifestation of rickets) SGD, DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE
Skill lab	OR13.1 Participate in a team for below knee and above knee plaster application in patients and Demonstrate ability to perform in a mannequin or equivalent. Small group discussion (1 hr) DOAP(1hr), SDL, Discussion and closure (1hr)	OSCE with Simulation based assessment

2nd week

		Method of Assessment
OPD	Observe and record new and follow up cases in OPD(2hrs) AETCOM (1hr)	OSCE
Post Admission day ward rounds	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of patient presenting with swelling arising from bone.) SGD,DOAP(1hr), Discussion and closure (1hr)	OSCE
OT	Observe OT procedures and document in the logbook with Discussion(3hrs)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of patient presenting with peripheral nerve injuries) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	OSCE
Ward	Follow up of assigned cases(1hr), Bedside clinics (History taking, physical examination of child presenting with deformity of foot) SGD,DOAP(1hr), SDL, Discussion and closure (1 hr)	OSCE
Skill lab	OR13.1 Participate in a team for Thomas splint application and strapping of shoulder and clavicle fracture in patients and Demonstrate ability to perform in a mannequin or equivalent. Small group discussion (1 hr), DOAP(1 hr), SDL, Discussion and closure (1 hr)	OSCE with Simulation based assessment

Internal Assessment examination: -- (Theory 100 marks and Clinical 100 Marks)

Theory: 100 marks

One internal assessments (IA) will be conducted at the end of module one and module two for 100 marks. Average marks of all notified theory internal assessment examinations (IAE) is taken into consideration for calculating the final internal assessment marks. Marks obtained by Periodic Assessment tests like Quiz, PCT, MCQs, will be added to theory internal marks.
Please note: Prior to submission to the University, the marks for each of the two internal examination theory assessments must be calculated out of 10 marks($1/4^{th}$ of General Surgery marks), regardless of the maximum marks.

Type of Questions	Number of questions	Marks for each question	Total
Multiple Choice Questions	20	1	20
Long Essay Questions	2	10	20
Short Essay Questions	6	5	30
Reasoning Questions / Short Answer Questions	10	3	30
Total marks			**100**

Note:

- Case Based Questions: 20% of total marks.
- Two questions based on integration (AITo) in Internal Assessment Examination and one question from AETCOM.
- A student who has not taken minimum required number of tests for Internal Assessment, each in theory and practical will not be eligible for University examinations.
- The results of Internal Assessment should be displayed on notice board within 2 weeks of the test and an opportunity to be provided to the students to discuss the results and get feedback on making their performance better.
- Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.

Practical/Viva: 100 Marks

Two practical assessments will be conducted along with the Theory Internal Assessments. Average marks of the two practical IAE will be taken. The marks obtained for Logbook, Record Book and Professionalism will be added to practical IAE marks. Objective Structured Practical Examination will be a method of assessment in Internal Assessment and Summative examination.

Department of

Obstetrics and Genecology (OBG)

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The GMER 2019 states the following to be the competencies to be achieved by the IMG

GOAL

ThebroadgoaloftheteachingofundergraduatestudentsinObstetricsandGynaecologyisthathe/sheshall acquire knowledge base, skills, attitude and communication skills pertaining to pregnancy, child birth and diseases of female reproductive tract for the practice of Obstetrics and Gynaecology. The student must acquire the necessary skills for providing the bar essential under lyingcare in the management of pregnancy and child birth.

Obstetrics and Gynaecology

(a) **Competencies in Obstetrics**: The student must demonstrate ability to:

1. Provide peri-conceptionalcounseling and antenatal care,

2. Identify high-risk pregnancies and refer appropriately,

3. Conduct normal deliveries, using safe delivery practices in the primary and secondary caresettings,

4. Prescribe drugs safely and appropriately in pregnancy and lactation,

5. Diagnose complications of labor, institute primary care and refer in a timely manner,

6. Perform early neonatal resuscitation,

7. Provide postnatal care, including education in breast-feeding,

8. Counsel and support couples in the correct choice of contraception

9. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient,

10. Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy(MTP), Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act) and other related
Acts.

Competencies in Gynaecology: The student must demonstrate ability to:

1. Elicit a gynaecologic history, perform appropriate physical and pelvic examinations andPAPsmear in the primary care setting,

2. Recognize, diagnose and manage common reproductive tract infections in the primary care
setting,

3. Recognize and diagnose common genital cancers and refer them appropriately.

OBJECTIVES:

Knowledge:

Attheendofthecourse,thestudentshall be ableto:

- Outlinetheanatomy,physiologyandpathophysiologyofthereproductivesystemandthecommonconditionsaffectingit
- Detectnormalpregnancy,labour,puerperiumandmanagetheproblemshe/sheislikelytoencountertherein
- Listtheleadingcausesofmaternalandperinatalmortalityandmorbidity
- Understandtheprinciplesofcontraceptionandvarioustechniquesemployed,methodsofmedicaltermination ofpregnancy,permanent methods ofsterilization andtheircomplications
- Identifytheuse,abuseandsideeffectsofdrugsinpregnancyandlactationandmanagementofconditionsassociatedwiththep re-menopausal andpost-menopausalperiod
- Describethenationalprogramofmaternal&childhealthandfamilywelfareandtheirimplementationatvarious levels
- Identifycommongynaecologicaldiseasesanddescribetheprinciplesoftheirmanagement
- State the indications, techniques and complications of surgerieslikeCaesarean section,laparotomy, abdominal and vaginal hysterectomy, Fothergill operation and vacuum aspiration forMedicalTerminationofPregnancy (MTP)

Skills

Attheendofthecourse,thestudentshall be ableto:

- Examineapregnantwoman;recognizehighriskpregnanciesandmakeappropriatereferrals
- Conductnormaldelivery,recognizecomplicationsandprovidepostnatalcare
- Resuscitatethenewbornandrecognizethecommoncongenitalanomalies inthenewborn
- Advisecouplesontheuseofvariousavailablecontraceptivemethods,devicesandassistininsertionandremovalofintra-uterinecontraceptivedevices
- Performpelvicexamination,diagnoseandmanagecommongynaecologicalproblemsincludingearlydetection ofcommongenitalmalignancies
- Performvaginalcytologicalsmear,performpostcoitaltestandwetvaginalsmearexaminationforTrichomonasvaginalis,mon iliasisandgramstainforgonorrhoea
- Interpretationofdataofinvestigationslikebiochemical,histopathological,radiological,ultrasoundetc.

Attitudeandcommunication

- Communicationwithempathytopatients&patient'sattenders
- Tocounsel&obtaininformedconsentfrompatient&patientsattenders

Integration

Theteachingshouldbealignedandintegratedhorizontallyandverticallyinordertoprovidecomprehensivecareforwomeni ntheirreproductiveyearsandbeyond,basedonasoundknowledgeofstructure,functionsanddiseaseandtheirclinical,social,emo tional,psychologicalcorrelatesinthecontextofnationalhealthpriorities.

Based on the competencies mentioned in the above said document, following items have been developed and spelt out in a tabular format

- Specific learning objectives (SLO's) to achieve each competency
- Suggested Teaching-Learning methods
- Preferred assessment methods (both formative and summative)

This is only a guideline and teachers are encouraged to improvise and develop more detailed SLOs. The T-L methods can be modified based on local resources.

A **question paper layout(theory)**has also been added to ensure that there is consistency among different paper setters.

Also, a suggested **assessment format (practical)** has also been given.

TERMS AND TEACHING GUIDELINES

1.LECTURE

Is a teaching learning method which includes traditional and interactive sessions involving a large group

2. SMALL GROUP DISCUSSION

Is an instructional method involving small groups of students in an appropriate learning context.

3. DOAP (Demonstration- Observation - Assistance - Performance)

A practical session that allows the student to observe demonstration, assists the performer, perform in a simulated environment, perform under supervision or perform independently.

4. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning , choosing and implementing appropriate learning methods.

5. SKILL ASSESSMENT

Is a session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)113

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know.

MINIMUM TEACHING HOURS

Sl No	Topic	Number of competencies	Lecture	SGD/ Tutorial	DOAP	SDL
1	**Demographic and Vital Statistics**	3	4	0	0	0
2	**Anatomy of the female reproductive tract**	2	3	0	0	0
3	**Physiology of conception**	1	2	0	0	0
4	**Development of the fetus and the placenta**	1	1	0	0	0
5	**Preconception counselling**	2	1	1	0	0
6	**Diagnosis of pregnancy**	1	1	1	0	0
7	**Maternal Changes in pregnancy**	1	1	0	0	0

8	**Antenatal Care**	8	5	1	1	1
9	**Complications in early pregnancy**	5	3	2	0	0
10	**Antepartum haemorrhage**	2	3	2	0	0
11	**Multiple pregnancies**	1	1	1	0	0
12	**Medical Disorders in pregnancy**	8	10	7	0	0
13	**Labour**	5	5	2	2	0
14	**Abnormal Lie and Presentation; Maternal Pelvis**	4	4	3	1	1
15	**Operative obstetrics**	2	0	2	1	0
16	**Complications of the third stage of labour**	4	4	3	1	0
17	**Lactation**	3	3	3	0	0
18	**Care of the new born**	4	2	2	2	0
19	**Normal and abnormal puerperium**	4	2	2	2	0
20	**Medical termination of pregnancy**	3	2	2	1	0
21	**Contraception**	2	5	4	1	0
22	**Vaginal discharge**	2	2	2	0	0
23	**Normal and abnormal puberty**	3	3	1	0	0
24	**Abnormal uterine bleeding**	2	2	1	0	0
25	**Amenorrhea**	2	2	1	0	0
26	**Genital injuries and fistulae**	1	2	1	0	0

27	**Genital infections**	6	6	6	0	1
28	**Infertility**	5	5	5	0	0
29	**Uterine fibroids**	1	1	1	0	1
30	**PCOS and hirsutism**	2	2	2	0	1
31	**Uterine prolapse**	1	1	1	0	1
32	**Menopause**	2	2	1	0	0
33	**Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix**	4	4	2	1	1
34	**Benign and malignant diseases of the uterus and the ovaries**	5	8	3	0	1
35	**Obstetrics &Gynecological skills-I**	17	0	12	17	0
36	**Obstetrics &Gynecological skills - II**	3	0	3	3	0
37	**Obstetrics&Gynecological skills - III**	7	0	7	0	0

List of all Obstetrics andGynecology Competencies with their specific learning objectives, with suggested teaching-learning and assessment methods

	Competencies	**Specific learning objectives**	**Teaching learning methods with hours**	**When T-L will be done**	**Formative assessment**	**Summative assessment**	**Assessment of clinical skills**
Topic: Demographic and Vital Statistics Number of competencies: (03) Number of procedures that require certification : (NIL)							

OG1.1	Define and discuss birth rate, maternal mortality and morbidity	Definition of birth rate Definition of maternal mortality What is maternal mortality ratio and rate, incidence, Causes of maternal mortality Factors affecting maternal mortality – 3 delays Interventions to prevent maternal death Definition of maternal morbidity Explain - acute, chronic, direct, indirect, non-obstetric maternal morbidity	Lecture 1hr Integration with community health	5th term	MCQs/SAQ's at the end of lecture	Essay/SAQ/ viva voce	
OG1.2	"Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and mortality audit	Definition of perinatal mortality Incidence Factors affecting perinatal mortality Causes of perinatal mortality Strategies to reduce perinatal mortality Definition of perinatal morbidity How to audit neonatal morbidity	Lectures 1hr Integration with community health	5th term	MCQs/SAQ's at the end of lecture	Essay/SAQ/ viva voce	
OG1.3	Define and discuss still birth and abortion	Definition of stillborn Incidence, etiology, pathology, symptoms, signs, investigations- still born infant Examination of stillborn infant Complications of IUD Management Definition of abortion Types	Lectures 2hr Tutorials /SGD	5th Term	MCQs/SAQ's at the end of lecture	Essay/SAQ/ viva voce	

		Etiology Pathophysiology, clinical features, investigations, management, differential diagnosis					
Topic: Anatomy of the female reproductive tract (Basic anatomy and embryology) Number of competencies: (02) Number of procedures that require certification : (NIL)						**Y**	
OG2.1	Describe and discuss the development and anatomy of the female reproductive tract, relationship to other pelvic organs, applied anatomy as related to Obstetrics and Gynaecology.	Development of external genital organs Development of internal genital organs Development of ovary, differentiation, descent Anatomy of external genitalia Anatomy of Internal genital organs- vagina, uterus, cervix, fallopian tubes, ovary Relationship to other pelvic organs Applied anatomy	Lecture 2hr Integration with Anatomy	5th term	MCQs/SAQ / Viva voce	Short essay/viva voce	
OG2.2	Define, classify and discuss the investigations and management of mullerian anomaly	classificaton of Mullerian anomaly, Investigation & management	Lecture 1hr	5th term	MCQs/SAQ / Viva voce	Short essay/viva voce	
Topic: Physiology of conception Number of competencies: (01) Number of procedures that require certification : (NIL)							

OG3.1	Describe the physiology of ovulation, menstruation, fertilization, implantation and gametogenesis.	Gametogenesis – spermatogenesis, oogenesis Formation and maturation of ovarian follicles, structure of ovum Ovulation- mechanism, causes, timing,effects Fertilization- process, post fertilization events, implantation	Lecture 2hrs	5th term	MCQs/SAQ	MCQs/SAQ	
Topic: Development of the fetus and the placenta Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG4.1	Describe and discuss the basic embryology of fetus, factors influencing fetal growth and development, anatomy and physiology of placenta, and teratogenesis	Embryology – formation of 3 germ layers, amnion and chorion, placenta Phases of conceptus development Timing of appearance of different organ systems Placenta- development, gross anatomy, structure, placental circulation, functions of placenta Teratogenesis, teratogens	Lecture 1hr	6th term	MCQs/SAQ	MCQs/SAQ	
Topic: Preconception counselling Number of competencies:(02) Number of procedures that require certification : (NIL)							
OG5.1	Describe, discuss and identify pre-existing medical disorders and discuss their management; discuss evidence-based	Pre existing medical disorders- anemia, cardiac disease, DM, chronic hypertension, bronchial asthma, seizure disorders, thyroid disorders, chronic kidney disease, Antenatal care and preconception counseling Objectives, history and examination, assessment of period of gestation, investigations, nutrition,	Lectures 1hr Tutorials 1hr Bedside clinics, Small group discussion	6th term	MCQ/SAQ	MCQ/SAQ	

	intrapartum care						
OG5.2	Determine maternal high risk factors and verify immunization status	screening for high risk factors, elderly primigravida: complications during pregnancy and labour, maternal and fetal mortality, management bad obstetric history obesity: physiological changes, management grand multipara: complications, mortality, management maternal immunization status for - Tetanus - hepatitis B - whooping cough - influenza vaccines contraindicated in pregnancy immunization in special circumstances: rabies, yellow fever, hepatitis A,	Lectures 1hr Bedside clinic, small group discussion	6th term	MCQ/SAQ	MCQ/SAQ	
Topic: Diagnosis of pregnancy Number of competencies:(01) Number of procedures that require certification : (NIL)							

OG6.1	Describe, discuss and demonstrate the clinical features of pregnancy, derive and discuss its differential diagnosis, elaborate the principles underlying and interpret pregnancy tests.	Discuss the clinical features of early pregnancy Tests to confirm pregnancy -immunologial test, Urine Pregancy test. Discuss the role of ultra sound in dignosing Pregnancy	Lectures 1hr Bedside clinic, small group discussion OPDs	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Maternal Changes in pregnancy Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG7.1	Describe and discuss the changes in the genital tract, cardiovascular system, respiratory, haematology, renal and gastrointestinal system in pregnancy	Hematology-blood volume, plasma volume, RBC &hemoglobin, blood coagulation factors CVS-anatomical changes, cardiac output, BP, venous pressure RS-respiratory rate, tidal volume, total lung capacity Renal-changes in kidney, ureter, bladder Gastrointestinal changes Genital tract-changes in body of uterus, isthmus, cervix	Lectures 1hr Bedside clinic, small group discussion	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Antenatal Care Number of competencies: (08) Number of procedures that require certification : (NIL)							
OG8.1	Enumerate, describe and	Procedure at 1st visit Procedure at subsequent visits	Bedside clinic, small	6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	discuss the objectives of antenatal care, assessment of period of gestation; screening for high-risk factors.	Routine Antenatal screening Antenatal hygiene Immunization Pre conceptional counselling & care Period of gestation based on pts statement, previous records, objective signs & investigations	group discussion OPDs				
OG8.2	Elicit document and present an obstetric history including menstrual history, last menstrual period, previous obstetric history, comorbid conditions, past medical history and surgical history	Menstrual history in detail Naegeles rule Importance of Past history Importance of Surgical history	Bedside clinic, small group discussion OPDs	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG8.3	Describe, demonstrate, document and perform an obstetrical examination including a general and	Antepartum fetal surveillance - clinical - biochemical - biophysical Evaluation of fetal wellbeing Maternal weight gain Assessment of height of fundus General physical examination	Lectures 1hr Bedside clinic, small group discussion OPDs	3rd 4th& 6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	abdominal examination (and clinical monitoring of maternal and fetal well-being;)	Per abdomen -inspection, palpation, auscultation Symphysio fundal height,abdominal girth					
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well-being	Non stress test Biophysical profile DFMC CTG Maternal condition assessment -vital parameters -investigations - Antenatal fetalsurveilance	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG8.5	Describe and demonstrate pelvic assessment in a model	Bones of pelvis, anatomical measurements of diameters assessment at brim At midcavity At outlet Plane of least pelvic diameter	Bedside clinic, small group discussion, DOAP,Labour room posting	3rd 4th 6th 8th& 9th terms	Skill Assessment	Skill Assessment	End of posting
OG8.6	Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy	BMI calorie requirement in pregnancy & lactation Protein requirement Folic acid requirement Vit b12 requirement Iron requirement Supplementary nutritional therapy Develop checklist for role play for nutrition in pregnancy	Lectures 1hr Bedside clinic, small group discussion, Role play OPD	3rd term	MCQs/SAQs	MCQs/SAQs	End of posting

OG8.7	Enumerate the indications for and types of vaccination in pregnancy	Contraindicated vaccines in pregnancy Safe vaccines in pregnancy Tetanus toxoid-dose, route Current guideline for antenatal vaccination including T-dap Timing of vaccination	Lectures 1hr Bedside clinic, small group discussion OPD	3rd term	MCQs/SAQs	MCQs/SAQs	End of posting
OG8.8	Enumerate the indications and describe the investigations including the use of ultrasound in the initial assessment and monitoring in pregnancy	Indication of 1st trimester USG Indication of 2nd trimester USG Indication of 3rd trimester USG USG markers of fetal anomalies Gestational age assessment on USG Doppler studies Routine antenatal blood and urine investigation Screening test for aneuploidy, preeclampsia and GDM Describe trimester wise blood test and ultrasound assessment	Lectures 1hr Bedside clinic, small group discussion	3rd term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Complications in early pregnancy Number of competencies: (05) Number of procedures that require certification: (NIL)							
OG9.1	Classify, define and discuses the aetiology and management of abortions including threatened, incomplete, inevitable, missed and septic	Definition Etiology Classification Definition, clinical features, investigations and management of threatened, inevitable, missed, complete and incomplete abortion Septic abortion definition Clinical Features Management Prevention	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG9.2	Describe the	Enumerate the steps of suction evacuation	Tutorials	6th&	MCQs/SAQ	MCQs/SAQs	End of

	steps and observe/ assist in the performance of an MTP evacuation	Enumerate steps of dilatation and evacuation Enumerate steps of menstrual regulation	1hr Bedside clinic, small group discussion opd / ward/ minor OT	7th term	s		posting
OG9.3	Discuss the aetiology, clinical features, differential diagnosis of acute abdomen in early pregnancy (with a focus on ectopic pregnancy) and enumerate the principles of medical and surgical management	Differential diagnosis of acute abdomen in early pregnancy- obstetric, gynecological, medical and surgical causes Etiology of ectopic pregnancy Classification of ectopic pregnancy Clinical features of acute and chronic ectopic Diagnosis Management options Medical management Surgical management	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG9.4	Discuss the clinical features, laboratory investigations, ultrasonography, differential diagnosis,	Definition of Molar pregnancy Classification Etiopathology Clinical features Investigations- blood and ultrasonography Differential diagnosis Complications- immediate and late	Lectures 1hr Tutorials 1hr Bedside clinic, small group	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	principles of management and follow up of gestational trophoblastic neoplasms	Management- medical and surgical Follow up- history, examination, investigations, and contraceptive advice.	discussion OPD				
OG9.5	Describe the etiopathology, impact on maternal and fetal health and principles of management of hyperemesis gravidarum	Definition of hyperemesis gravidarum Etiopathology Clinical features- symptoms and signs Investigations Complications to mother and fetus Management- hospitalization, fluids, drugs, diet, nutritional supplementation	Lectures 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Antepartum haemorrhage **Number of competencies: (02) Number of competencies that require certification: (NIL)**							
OG10.1	Define, classify and describe the aetiology, pathogenesis, clinical features, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy	Classification and differential diagnosis Placenta previa definition Etiology and types Clinical features Complications Management- investigations, expectant vs definitive management Definition of abruption placenta Etiology and types Clinical features and grades Management	Lectures 2hr Tutorials 2hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG10.	Enumerate the	Enumerate different types of blood components	Lectures	8th	MCQs/SAQ	MCQs/SAQs	

2	indications and describe the appropriate use of blood and blood products, their complications and management.	Characteristic features and storage Indications for transfusion Massive transfusion protocol Complications and their management Discuss importance of consent form	1hr Bedside clinic, small group discussion	term	s		
Topic: Multiple pregnancies Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG11.1	Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies	Etiopathology and types Diagnosis- History, symptoms, general and abdominal examination Investigations Maternal changes Complications to mother and fetus Management- antenatal, 1st and 2nd stage of labour, including delivery of 2nd twin, third stage, puerperium	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Medical Disorders in pregnancy Number of competencies: (08) Number of procedures that require certification : (NIL)							
OG12.1	Define, classify and describe the etiology and pathophysiology , early detection, investigations; principles of management of hypertensive	Classification of hypertensive disorders, definition of pre-eclampsia and eclampsia Diagnostic criteria Etiopathogenesis Clinical features of pre-eclampsia and eclampsia- symptoms and signs Specific investigations Maternal and fetal complications antenatal management- supportive, fluid management,	Lectures 3hr Tutorials 2hr Bedside clinic, small group discussion OPD	8th term	MCQs/SAQs	MCQs/SAQs	End of posting

	disorders of pregnancy and eclampsia, complications of eclampsia.	antibiotics, anti-hypertensives, anti-convulsants Monitoring and surveillance Management during labour					
OG12.2	Define, classify and describe the etiology, pathophysiology ,diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of anemia in pregnancy	Definition Classification Etiology of nutritional anemia Clinical features of nutritional anemia Physiological changes and effects of anemia on pregnancy and fetus Investigations of nutritional anemia Complications during pregnancy, labour and puerperium Prevention of nutritional anemia Management of nutritional anemia- diet, oral and parenteral iron, blood transfusion Discuss classification, etiology, clinical features, investigations, complications and management of non nutritionalanemia	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG12.3	Define, classify and describe the etiology, pathophysiology ,diagnosis, investigations, criteria, adverse effects on the	definition of gestational diabetes mellitus classification of diabetes mellitus in pregnancy Enumerate etiological factors Discuss pathophysiology of diabetes mellitus in pregnancy investigations for diabetes mellitus in pregnancy Screening test for gestational diabetes mellitus Describe the effects of diabetes on pregnancy	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	mother and foetus and the management during pregnancy and labor, and complications of diabetes in pregnancy	complications of diabetes mellitus in pregnancy Discuss the management of diabetes in antenatal period , in labour, postnatal					
OG12.4	Define, classify and describe the etiology, pathophysiology ,diagnosis, investigations, criteria, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy	classification of heart disease in pregnancy Discuss etiology Describe pathophysiology of heart disease in pregnancy Discuss clinical features of heart disease in pregnancy Describe antenatal investigations diagnosis Discuss the effects of heart disease on pregnancy Discuss the effects of pregnancy on heart disease management during pregnancy, during labour, in postnatal Complications, preconceptionalcouncelling	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG12.5	Describe the clinical features, detection, effect of pregnancy on	etiology of UTI in pregnancy pathophysiology in pregnancy symptoms signs	Lectures 1hr Bedside clinic, small	7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	the disease and impact of the disease on pregnancy complications and management of urinary tract infections in pregnancy	investigations complications management Asymptomatic bacteriuria	group discussion OPD				
OG12.6	Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of liver disease in pregnancy	Discuss classification of liver disease in pregnancy etiology pathophysiology Describe clinical features of liver disease in pregnancy List the investigations of liver disease in pregnancy Discuss the differential diagnosis of liver disease in pregnancy List the maternal complications management of liver disease in pregnancy	Lectures 1hr Bedside clinic, small group discussion OPD	7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG12.7	Describe and discuss screening, risk factors, management of mother and newborn with	introduction of HIV and incidence routes of transmission immunopathogenesis clinical presentation diagnosis management prenatal care, antenatal care, intrapartum care, postnatal care	Lectures 1hr Bedside clinic, small group discussion	7th term	MCQs/SAQs	MCQs/SAQs	End of posting

	HIV	Pre-test and post test counselling PPTCT program TORCH infection in pregnancy					
OG12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of isoimmunization in pregnancy	Definition of Rh- isoimmunisation Mechanism of antibody formation in the mother Prevention of Rh-isoimmunisation Haemolytic disease of the fetus and newborn Antenatal investigations protocol of Rh-negative mother Plan of delivery in unimmunised and immunised mother Prognosis of Rh-isoimmunisation	Lectures 1hr Bedside clinic, small group discussion OPD	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Labour- Number of competencies: (05) Number of procedures that require certification : (01)							
OG13.1	Enumerate and discuss the physiology of normal labor, mechanism of labor in occipito-anterior presentation; monitoring of labor including partogram; conduct of labor, pain relief; principles of induction and acceleration of labor;	physiology of normal labour mechanism of normal labour monitoring of labour by partogram steps of delivery labour analgesia induction of labour by natural, medical, surgical, combined acceleration of labour management of 3rd stage of labour	Lectures 3hr Tutorials 1hr Bedside clinic, small group discussion, evening labour room posting	3rd& 4th term	MCQs/SAQs	MCQs/SAQs	End of posting

	management of third stage of labor.						
OG13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy	definition for preterm labour, PROM &post dated pregnancy etiology pathophysiology symptoms signs investigations diagnosis complications management	Lectures 2hr Tutorials 1hr Bedside clinic, small group discussion	6th& 7th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG13.3	Observe/ assist in the performance of an artificial rupture of membranes	indications for ARM Enumerate the technique of procedure limitations contraindications complications	Bedside clinic, small group discussion, evening labour room posting	8th& 9th term			Skill Assessment
OG13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin (and counsel on methods of safe	physiology and mechanism and events of stage 1,2 and 3 of normal labour defination of abortion types of abortion indications of induced abortion medical and surgical methods MTP act complications of abortion	Bedside clinic, small group discussion, skill lab DOAP	8thterm			Skill Assessment

	abortion).						
OG13.5	Observe and assist the conduct of a normal vaginal delivery	Monitoring of mother and fetus in second stage of labor General management- sterile precautions Position for delivery procedures Oxytocics and analgesia in labor Management of third stage of labor Examination of placenta Fourth stage of labor	Bedside clinic, Evening labour room posting DOAP	8th& 9th term			Skill Assessment
Topic: Abnormal Lie and Presentation; Maternal Pelvis Number of competencies: (04) Number of procedures that need certification : (NIL)							
OG14.1	Enumerate and discuss the diameters of maternal pelvis and types	Bones of female pelvis Diameters and planes of obstetric pelvis Clinical significance of each type of pelvis False and true pelvis Caldwell and moloy classification of pelvis.	Bedside clinic, DOAP	6th 8th& 9th term	MCQs/SAQs	MCQs/SAQs	End of posting Skill Assessment
OG14.2	Discuss the mechanism of normal labor, Define and describe obstructed labor, its clinical features; prevention; and management	normal labor- definition Describe cardinal movements involved in labor Explain synclitism/asynclitism Definition of obstructed labor causes Clinical feautures diagnosis Prevention Management Complications of obstructed labor	Lectures 1hr Bedside clinic, small group discussion, Evening labour room posting	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG14.3	Describe and discuss rupture uterus, causes, diagnosis and management.	incidence of Rupture Uterus causes pathology Clinical feautures diagnosis	Lectures 1hr Bedside clinic, small group	8th term	MCQs/SAQs	MCQs/SAQs	End of posting

		complications Management- general and definitive	discussion, Evening labour room posting				
OG14.4	Describe and discuss the classification; diagnosis; management of abnormal labor	Definition Classification of abnormal uterine action Describe pathological retraction ring and management Management of abnormal labor Dystocia dystrophia syndrome	Lectures 1hr Bedside clinic, small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG14.5	Describe and discuss causes, dagnosis and management of breech presentation, occipito posterior, transverse lie, face presentation	Breech – Etiological features Clinical Examination Management of Antenatal intrapartum Compications - Maternal Fetal OP- Etiology Features Clinical Examination Mechanism of labour in OP , Course of labour Definition of deep transverse arrest and its management Define & discuss the management of transverse	Lectures 1hr Tutorials 1hr Bedside clinic, small group discussion , evening labour room posting	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Operative obstetrics Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG15.1	Enumerate and describe the indications and steps of common obstetric	Episiotomy- definition, types, timing of episiotomy, structures incised , repair, complications vacuum extraction- design, indications, contraindications, procedure, complications low forceps- description of forceps, indications, contraindications, procedure, complications	Tutorials 2hrs Bedside clinic, Small group discussion,	8th& 9th term	MCQs/SAQs Skill Assessment	MCQs/SAQs Skill Assessment	End of posting

	procedures, technique and complications: Episiotomy, vacuum extraction; low forceps; Caesarean section, assisted breech delivery; external cephalic version; cervical cerclage	caesarean section- types , indications, procedure, complications. What is caesarean hysterectomy assisted breech delivery- principles , steps, indications, delivery of after coming head, complications external cephalic version- pre requisites, indications, contraindications, procedure, complications cervical cerclage – types, indications, procedure, complications	observation in OT, evening labour room posting				
OG15.2	Observe and assist in the performance of an episiotomy and demonstrate the correct suturing technique of an episiotomy in a simulated environment. Observe/Assist in operative obstetrics cases – including - CS, Forceps, vacuum extraction, and	episiotomy- suturing technique breech delivery	Bedside clinic, Small group discussion , observation in OT, DOAP Skill lab		MCQs/SAQs	MCQs/SAQs	Skill Assessment

	breech delivery						
Topic: Complications of the third stage of labor- Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG16.1	Enumerate and discuss causes, prevention, diagnosis, management, of blood and blood products in appropriate use postpartum haemorrhage	Definition – primary and secondary PPH Aetiology incidence diagnosis Degree of shock in PPH Prevention Management- medical, appropriate use of blood and blood products Uterine compression sutures Step wise devascularisation	Lectures 1hr Tutorials 1hr Bedside clinic, Small group discussion,evening labour room posting	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG16.2	Describe and discuss uterine inversion – causes, prevention, diagnosis and management.	uterine inversion- INCIDENCE TYPES degree aetiology Clinical features diagnosis Complications D/D,prevention,prognosis management	Lectures 1hr Tutorials 1hr Bedside clinic, Small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	
OG16.3	Describe and discuss causes, clinical features, diagnosis, investigations; monitoring of fetal well-being,	intrauterine growth restriction – definition Pathophysiology of FGR TYPES OF FGR aetiology diagnosis Management- antepartum, intrapartum and neonatal	Lectures 1hr Tutorials 1hr Bedside clinic	8th term	MCQs/SAQs	MCQs/SAQs	Case presentation, End of posting

	including ultrasound and fetal Doppler; principles of management; prevention and counselling in intrauterine growth retardation						
OG16.4	Describe and discuss macrosomia, causes, diagnosis, intra partum complications, management	Definition of Macrosomia Causes clinical &sonological findings to diagnose & management shoulder dystocia - Causes Intrapartum Management maternal & neonatal complicaitons	Lectures 1hr Bedside clinic,evening labour room posting Skill lab		MCQs/SAQs	MCQs/SAQs	Case presentation, End of posting
Topic: Lactation Number of competencies: (03) Number of procedures that require certification : (NIL)							
OG17.1	Describe and discuss the physiology of lactation	Anatomy of breast Phases of lactation Prolactin reflex Milk let down reflex Lactation inhibition and suppression	Lecture 1hr, Small group discussion 1hr	5th term	MCQs/SAQs	MCQs/SAQs	
OG17.2	Counsel in a simulated environment, care of the breast, importance and	Care of breast Initiation of breast feeding Exclusive breast feeding Technique of breastfeeding-different position and attachment Frequency of breastfeeding	Lecture 1hr, Small group discussion 1hr	8th& 9th term			

	the technique of breast feeding	Adequacy of breastfeeding Expression of breast milk					
OG17.3	Describe and discuss the clinical features, diagnosis and management of mastitis and breast abscess	Clinical presentation in mastitis Diagnosis of mastitis Complication of mastitis Treatment and prevention of mastitis Breast abscess – definition, clinical presentation, diagnosis, investigation, treatment	Lecture 1hr, Small group discussion 1hr	8th& 9th term	MCQs/SAQs	MCQs/SAQs	
Topic: Care of the new born Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG18.1	Describe and discuss the assessment of maturity of the newborn, diagnosis of birth asphyxia, principles of resuscitation, common problems.	Examination of new born Assessment of gestation age – by sole creases , breast nodule, scalp hair, ear lobe, testes and scrotum Birth asphyxia – definition, etiology, diagnosis, clinical features, management Equipments for resuscitation principles of resuscitation Common problem in resuscitation	Lectures 1hr Bedside clinic, Small group discussion DOAP, Evening labour room posting Skill Lab	3rd& 4th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment	New born resuscitation algorithm Initial steps Positive pressure ventilation Endotracheal intubation, chest compression medication	Bedside clinic, DOAP, Evening labour room posting Skill Lab	6th term			Skill Assesment

OG18.3	Describe and discuss the diagnosis of birth asphyxia	definition birth asphyxia etiopathogenesis Clinical features and diagnosis management	Lectures 1hr Bedside clinic, small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG18.4	Describe the principles of resuscitation of the newborn and enumerate the common problems encountered	Principles of resuscitation Steps of resuscitation Resuscitation principle in baby whose apneic despite tactile stimulation Resuscitation when baby is apneic and HR less than 100	Bedside clinic, Small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Normal and abnormal puerperium. Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG19.1	Describe and discuss the physiology of puerperium, its complications, diagnosis and management; counselling for contraception, puerperal sterilization	definition of Purperium Physiological changes includes uterine changes Define lochia & types general physiological changes Puerperal sepsis – definition , causes, pathogenesis , clinical features, diagnosis, management Subinvolution , urinary problems Thromboembolic disorders – DVT, thrombophlebitis, pulmonary embolism Obstetric palsies , puerperal psychiatric disorders	Lectures 2hrs Tutorials 1hr Bedside clinic, Small group discussion	6th& 8th term	MCQs/SAQs	MCQs/SAQs	Post natal case presentation during clinics, End of posting
OG19.2	Counsel in a simulated environment,	Methods of contraception Puerperal sterilization - a. informed consent and pre-	Tutorials 1hr Bedside	8th& 9th term			Skill Assessment

	contraception and puerperal sterilisation	requisites b. timing c. methods d. technique e. steps f. complication Develop a checklist for role paly including above mention SLO	clinic, DOAP, Role play				
OG19.3	Observe/ assist in the performance of tubal ligation	Pre –operative preparation Type of anaesthesia Types of incision Procedure Advantages Drawbacks	DOAP & Intra operative, skill lab	8th& 9th term			Skill Assessment
OG19.4	Enumerate the indications for, describe the steps in and insert and remove an intrauterine device in a simulated environment	Indications for cu-t insertions –WHO eligibility criteria Timing of insertion Technique of insertion – no touch insertion	Skill lab & OPD	8th& 9th term	MCQs/SAQs	MCQs/SAQs	Skill Assessment
Topic: Medical termination of pregnancy Number of competencies: (03) Number of procedures that require certification : (NIL)							
OG20.1	Enumerate the indications and describe and discuss the legal	Induction of Abortion- Definition MEDICAL TERMINATION OF PREGNANCY Act Indications for termination Recommendations (new changes)	Lectures 2hr Bedside clinic, Small	3rd term	MCQs/SAQs	MCQs/SAQs	

	aspects, indications, methods for first and second trimester MTP; complications and management of complications of Medical Termination of Pregnancy	First trimester (Upto 12 weeks) -Medical & Surgical Second Trimester (13-24 weeks) Medical & Surgical Complications of MTP- Immediate & Remote Management of Complications	group discussion				
OG20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy	Introduces oneself and verifies the patients identity and age. Explains that if minor or lunatic then parents or legal guardian consent is required Calculates the gestational age Provides information regarding the options available or the need for opinion of two medical practitioners Provides information regarding the failure rates, immediate and remote complications of the chosen procedures Explains that only the patients written consent is required and not the husbands Explains that it is a confidential procedure and has to be reported to the DHS in the prescribed form Develop a checklist for role play inluding above mentioned SLO	Tutorials 1hr DOAP, Role play	8th& 9th term			Viva voce
OG20.3	Discuss Pre-conception and Pre Natal	Definition of the PC & PNDT act Prenatal diagnostic procedures under the act Prenatal diagnostic Tests covered by the act	Lectures 1hr Bedside	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce

	Diagnostic Techniques (PC& PNDT) Act 1994 & its amendments	Qualified Personnel and Registration (of The place where US is performed) Offences and penalties	clinic, Small group discussion				
Topic: Contraception Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG21.1	Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including Ocs, male contraception, emergency contraception and IUCD	Methods of contraception MEC criteria pearl Index Permanent – Male and Female contraceptive method Temporary Natural- Calendar, temperature, withdrawal, lactational (FAM) Barrier- Physical-male and female condoms, diaphragms ; Chemical - creams jelly and foam IUCD- types, mode of action, contraindications, complications, other uses Steroidal Contraception-oral, parenteral, devices COC- types, Mechanism of action, contraindications and non-contraceptive uses, follow up, Missed pill management Implants injectables and Emergency contraception Male contraception What is PPIUCD	Lectures 5hrs Tutorials 4hrs Bedside clinic, Small group discussion Skill lab 1	8th& 9th term	MCQs/SAQs	MCQs/SAQs	Skill Assessment, End of posting Viva voce
OG21.2	Describe & discuss PPIUCD programme	Mode of insertion of PPIUCD Benefits Drawbacks Government Family Planning programs	Lectures 1hr Bedside clinic, Small group	8th& 9th term	MCQs/SAQs	MCQs/SAQs	Viva voce

			discussion				
Topic: Vaginal discharge Number of competencies: (02) Number of procedures that require certification :(NIL)							
OG22.1	Describe the clinical characteristics of physiological vaginal discharge	Characteristics of normal vaginal discharge Leucorrhea Physiological excess Cervical causes Vaginal causes Enumerate the causes of physiological vaginal discharge	Lectures 1hr Bedside clinic ,Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG22.2	Describe and discuss the etiology (with special emphasis on Candida, T. vaginalis, bacterial vaginosis), characteristics, clinical diagnosis, investigations, genital hygiene, management of common causes and the syndromic management	Defense of the genital tract Candida- Clinical features, complications, diagnosis, treatment T. vaginalis- Clinical features, complications, diagnosis, treatment Bacterial Vaginosis- Clinical features, complications, diagnosis, treatment Gonorrhea - Clinical features, complications, diagnosis, treatment Syphilis- Clinical features, complications, diagnosis, treatment Chlamydial infections- Clinical features, complications, diagnosis, treatment Chancroid, LGV, Granuloma Inguinale- cause, Clinical features, complications, diagnosis, treatment Herpes Genitalis- Clinical features, complications, diagnosis, treatment Syndromic Approach & kits available	Lectures 1hr Bedside clinic ,Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
Topic: Normal and abnormal puberty Number of competencies: (03) Number of procedures that require certification : (NIL)							
OG23.1	Describe and discuss the	Puberty Definition and Morphological Changes Endocrinology of Puberty	Lectures 1hr	6th& 7th	MCQs/SAQs	MCQs/SAQs	

	physiology of puberty, features of abnormal puberty, common problems and their management	Precocious Puberty Definition, types, etiopathogenesis, diagnosis, treatment, prognosis, Delayed Puberty- Definition, types, etiopathogenesis, diagnosis, treatment, prognosis Puberty Menorrhagia - etiopathogenesis, diagnosis treatment	Bedside clinic ,Small group discussion, OPD	term			
OG23.2	Enumerate the causes of delayed puberty. Describe the investigation and management of common causes	HypergonadotrophicHypogonadism- Ovarian Failure, gonadal dysgenesis Hypogonadotrophichypogonadism-primary, kallmann, tumors Eugonadism- Anatomical ; AIS	Lectures 1hr	6th& 7th term	MCQs/SAQs	MCQs/SAQs	
OG23.3	Enumerate the causes of precocious puberty	GnRH dependent- constitutional, intracranial lesions, juvenile primary hypothyroidism; incomplete GnRH independent – Ovarian; adrenal; Liver; iatrogenic	Lectures 1hr	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Abnormal uterine bleeding Number of competencies: (02) Number of procedures that require certification: (NIL)							
OG24.1	Discuss common disorders associated with menstruation like irregular cycle, HMB, intermenstrual bleeding,	Definition of dysmenorrhea clinical Features Types of dismenorrhea& management of dismenorrhea Pre menstrual syndrome Etiology Clinical Features management	Lectures 1hr Bedside clinic ,Small group discussion, OPD	6th term			

	dismenorrhea, PMS, ovulatory pain						
OG24.2	Define, classify and discuss abnormal uterine bleeding, its management	Old terminology- Menorrhagia; Polymenorrhea; Metrorrhagia; Oligomenorrhea; Hypomenorrhea; DUB Oligomenorrhea; Hypomenorrhea; DUB FIGO PALM-COEIN classification Causes and its clinical features Investigations Management	Lectures 1hr Tutorials 1hr Bedside clinic	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Amenorrhea Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG25.1	Describe and discuss the causes of primary and secondary amenorrhea, its investigation and the principles of management.	definition of primary and secondary amenorrhea clinical types of amenorrhea physiological amenorrhea pathological amenorrhea causes of primary and secondary amenorrhea history, clinical examination, when to start investigating investigations panel differential diagnosis of primary and secondary amenorrhea	Lectures 1hr Tutorials 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG25.2	Describe and discuss sexual development and disorders of sexual development	Sexual Development Classification of intersex Disorder Turners Syndrome Klinefilters syndrome	Lectures 1hr OPD	6th term	MCQs/SAQs	MCQs/SAQs	
Topic: Genital injuries and fistulae Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG26.1	Describe and discuss the	ENDOMETRIOSIS - definition	Lectures 2hr	8th term	MCQs/SAQs	MCQs/SAQs	Case presentation,

	etiopathogenesis, clinical features; investigation and implications on health and fertility and management of endometriosis and adenomyosis	- prevalence and sites - pathogenesis (theories) - pathology - naked eye and microscopic appearance - ovarian endometrioma - Symptoms and signs - investigations - differential diagnosis - complications - management - expectant /medical / surgical /combined ADENOMYOSIS - definition - causes - pathogenesis - symptoms and signs - investigations - differential diagnosis - management - complications	Tutorials 1hr Bedside clinic, Small group discussion, OPD				End of posting
Topic: Genital infections Number of competencies: (06) Number of procedures that require certification : (NIL)							
OG27.1	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations,	Disscussetiopathogenesis of each STD Describe the clinical features Discuss differential diagnosis of STD Discuss investigations and management of STD Syndromic Approach Discuss long term implications of STD	Lectures 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	management and long term implications of sexually transmitted infections						
OG27.2	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of genital tuberculosis	Describe aetiopathogenesis of genital TB Describe the clinical features Discuss differential diagnosis of genital TB Discuss investigations and management of genital TB Discuss long term implications of genital TB	Lectures 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting
OG27.3	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of	Describe etiopathogenesis of HIV Describe the clinical features of HIV in Gynaecology Discuss differential diagnosis of HIV Discuss investigations and management of HIV Discuss long term implications of HIV	Lectures 1hr Bedside clinic, Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting

	HIV						
OG27.4	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease	Define PID Describe etiopathogenesis of PID Describe the clinical features of PID Discuss differential diagnosis of acute PID Discuss investigations and management of PID Discuss long term implications of PID	Lectures 1hr Tutorials 1hr Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation
OG27.5	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management of low back ache and chronic pelvic pain	Describe aetiology, clinical features, management of chronic PID Definition of chronic pelvic pain Difference between cyclic and acyclic pelvic pain Non gynaecological causes of pelvic pain Enumerate Different causes of pelvic pain (gynaecological) What is pelvic congestion syndrome and its management What is Cornett sign What is pessary test What is role of laparoscopy in diagnosis of chronic pelvic pain What is LUNA	Lectures 1hr Small group discussion, OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG27.	Discuss clinical	What is residual (trapped) ovarian syndrome	Lectures	6th	MCQs/SAQ	MCQs/SAQs	

6	features, differential disgnosis, pathogens and management of Bertholin's abscess	causative organisms pathology fate of infection of bartholin gland clinical features local examination findings treatment recurrenybartholinitis	1hr Small group discussion, OPD	term	s		
Topic: Infertility Number of competencies:(05) Number of procedures that require certification : (NIL)							
OG28.1	Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of infertility – methods of tubal patency, ovulation induction, assisted reproductive techniques	Definition of infertility Enumerate the causes and pathogenesis Clinical features Evaluation of infertile couple, Discuss the principles of management of infertility	Lectures 1hr Tutorials 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
OG28.2	Enumerate the assessment and restoration of tubal patency	Causes for tubal factor in infertility Discuss the investigations to asses tubal patency Enumerate the methods to restore tubal patency	Lectures 1hr Tutorials 1hr	8th term	MCQs/SAQs	MCQs/SAQs	

			Small group discussion, OPD				
OG28.3	Describe the principles of ovulation induction	Discuss ovarian factor leading to infertility Enumerate the investigations for ovarian factor in infertility Discuss the principles and different methods available for ovulation induction	Lectures 1hr Tutorials 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
OG28.4	Enumerate the various Assisted Reproduction Techniques	Define ART Counselling for ART	Lectures 1hr Tutorials 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
OG28.5	Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of	Male Infertility : Discuss Aetiology - Genetic Disorders of Speramatogenesis Disorders of Speram Anatomical defect Sexual dysfunction & explain History to be elicitated	Lectures 1hr Tutorials 1hr Small group discussion, OPD		MCQs/SAQs	MCQs/SAQs	

	male infertility	- To find the probalb causes Investigation - WHO guidness for semen analysis - Testicular biopsy - Immunological test -Chromosomal assay Enumerate ART methods					
Topic: Uterine fibroids Number of competencies: (01) Number of procedures that require certification : (NIL)							
OG29. 1	Describe and discuss the etiology; pathology; clinical features; differential diagnosis; investigations; principles of management, complications of fibroid uterus	Incidence and pathogenesis Risk factors Figo classification of types of fibroid Histological features of fibroid Clinical features Examination Investigations Differential diagnosis Management Asymptotic fibroids: Medical management : Indications Side effects Surgical management : Principles of myomectomy prerequisites Indications Contraindications Endoscopic procedures: Hysteroscopy Laproscopy Uterine artery embolization	Lectures 1hr Tutorials 1hr Small group discussion, OPD, Intra operative	8th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation

		New methods:MRfgus Abdominal hysterectomy					
Topic: PCOS and hirsutism Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG30.1	Describe and discuss the etiopathogenesis; clinical features; differential diagnosis; investigations; management, complications of PCOS	discuss the etiopathogenesis of PCOS Discuss clinical features of PCOS investigations , Diagnostic creteria , Differential diagnosis Treatment Long term complications	Lectures 1hr Tutorials 1hr Small group discussion	8th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation
OG30.2	Enumerate the causes and describe the investigations and management of hyperandrogenism	Definition of hirsutism Ovarian causes: Adrenal causes: Others: Clinical features investigations management	Lectures 1hr Small group discussion, OPD	8th term	MCQs/SAQs	MCQs/SAQs	
Topic: Uterine prolapse Number of competencies: (01) Number of procedures that require certification :(NIL)							
OG31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations,	Definition of pelvic organ prolapsed Supports of uterus Pathophysiology and causes of prolapse Classification of pelvic organ prolapse Symptoms of prolapse Clinical evaluation including history and examination Differential diagnosis of mass per vaginum	Lectures 1hr Tutorials 1hr Small group discussion ,	8th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation

	principles of management and preventive aspects of prolapse of uterus	investigations Factors determining the choice of treatment in pelvic organ prolapse Management of prolapse: pessary treatment in pelvic organ prolapse preventive aspects of prolapse of uterus	OPD, OT, Bed side clinics				
Topic: Menopause Number of competencies: (02) Number of procedures that require certification : (NIL)							
OG32.1	Describe and discuss the physiology of menopause, symptoms, prevention, management and the role of hormone replacement therapy.	Definition of menopause Physiology of menopause Symptoms and investigations Management and HRT	Lectures 1hr Small group discussion , OPD	6th term	MCQs/SAQs	MCQs/SAQs	
OG32.2	Enumerate the causes of postmenopausal bleeding and describe its management	Definition of post menopausal BLEEDING causes investigations management	Lectures 1hr Tutorials 1hr Small group discussion , OPD, minor OT, Bed side clinics	9th term	MCQs/SAQs	MCQs/SAQs	End of posting Case presentation
Topic: Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix Number of competencies: (04) Number of procedures that require certification : (NIL)							

OG33.1	Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer	Risk factors Clinical features Signs and symptoms Modes of spread investigations Histological types of c a Cervix Staging of Ca cervix-FIGO	Lectures 2hr Tutorials 1hr Small group discussion , OPD	9th term	MCQs/SAQs	MCQs/SAQs	
OG33.2	Describe the principles of management including surgery and radiotherapy of Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix	Benign lesions: Etiopathogenesis Clinical features Symptoms and treatment: preventive and definitive Premalignant lesions of cervix (CIN): Pathogenesis Etiology Symptoms Investigations Treatment od CIN: preventive and definitive Ca cervix: Management of Cervical Cancer according to staging Types of hysterectomy Indications for radiotherapy &Chemotharapy	Lectures 1hr Small group discussion , OPD	9th term	MCQs/SAQs	MCQs/SAQs	
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment	Complications and followup counsel the patient about need for Pap smear Examination take informed consent about the procedure ensure the adequate privacy at examination area keep ready equipment needed for the procedure	Small group discussion, OPD, Skill Lab, DOAP	9th term	MCQs/SAQs	MCQs/SAQs	

		Perform examination under aseptic precaution Document the findings Proper disposal of gloves					
OG33. 4	Enumerate the methods to prevent cancer of cervix including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine (VILI), pap smear and colposcopy	Need for screening: Methods: VIA VILI PAP Colposcopy Indications Methods inference	Lectures 1hr Small group discussion, OPD	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce
Topic: Benign and malignant diseases of the uterus and the ovaries Number of competencies: (05) Number of procedures that require certification : (NIL)							
OG34. 1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of	Types of endometrial hyperplasia Incidence, etiology of endometrial cnacer Pathology – gross, microscopic features. Types of endometrial cancer Modes of spread Diagnosis Figo staging Differential diagnosis, investigations Steps of staging laparotomy Chemotherapy and radiotherapy Followup	Lectures 1hr Small group discussion, OPD, intra operative	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation

	endometrial cancer						
OG34.2	Describe and discuss the etiology, pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principal of management including staging laparotomy	Incidence, etiology for ovarian cancer Genetics and ovarian malignancy Pathology Classification of ovarian cancer Modes of spread Clinical features Investigations Diagnosis Figo staging Differential diagnosis Screening Surgical management Chemotherapy Followup Germ cell tumors of ovary Discuss the role of Tumour markers	Lectures 2hr Tutorials 1hr Small group discussion, OPD, intra operative, Bed side clinics	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation
OG34.3	Describe and discuss the etiology, pathology, classification, staging, clinical features, differential diagnosis, investigations and management of	Gestational trophoblastic disease- spectrum WHO based prognostic scoring Incidence Etiology pathology staging Spread, clinical features Investigations, management Surveillance during and after therapy	Lectures 1hr Tutorials 1hr Small group discussion, OPD, Bed side clinics	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation

	gestational trophoblastic disease						
OG34.4	Operative Gynaecology : Understand and describe the technique and complications: Dilatation & Curettage (D&C); EA-ECC; cervical biopsy; abdominal hysterectomy; myomectomy; surgery for ovarian tumours; staging laparotomy; vaginal hysterectomy including pelvic floor repair; Fothergill's operation, Laparoscopy; hysteroscopy; management of postoperative	operative gynaecology: technique and complications Dilatation and curettage: indications, steps, complications Endometrial aspiration – endocervical curettage Cervical biopsy: types, indications, steps, procedures, complications TAH : types, indications, steps, complications Myomectomy : measures to control blood loss during myomectomy, steps, complications Surgery for ovarian tumors Staging laparotomy VH+PFR: steps, complications Fothergill's operation: indications, steps, complications Laparoscopy: advantages, disadvantages, instruments, indications, contraindications, techniques, complications Hysteroscopy: instruments, distending media, anaesthesia, procedures, indications, contraindications, complications	Lectures 2hr Small group discussion, OPD,OT, Minor OT	9th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation

	complications						
OG34.5	Benign lesions of cervix, ovary	Benign disorders of cervix - cervical erosion - cervical ectropion - cervical polyp Benign disorders of ovary - -Enumerate the conditions of non neoplastic ovarian enlargement - classification of Benign ovarian tumors -complications of Benign ovarian tumors	Lectures 2hr Small group discussion, OPD, Bed side clinics	8th term	MCQs/SAQs	MCQs/SAQs	Viva voce End of posting case presetnation
Topic:Obstetrics &Gynecological skills - I Number of competencies: (17) Number of procedures that require certification : (NIL)							
OG35.1	Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (perrectal and per-vaginal)	Obtain a demographic data Chief complaints History of presenting complaints Obstetric and menstrual history Past and family history Treatment history Personal history General physical examination including breast and thyroid, BMI SYSTEMIC EXAMINATION- RS/CVS/CNS ABDOMEN EXAMINATION	Small group discussion, OPD, DOAP	3rd 4th 6th& 8th term			Viva voce End of posting case presetnation
OG35.2	Arrive at a logical provisional diagnosis after examination.	With elicited history and detailed examination arrive at a logical provisional diagnosis	Small group discussion, OPD, DOAP	6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.3	Recognize situations, which	Analysis of clinical situation Identify the risk factors and need for urgent treatment	Small group discussion,	8th& 9th			Viva voce End of

	call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment.	Administer emergency medications Transfer to tertiary care center	OPD, DOAP	term			posting case presetnation
OG35.4	Demonstrate interpersonal and communication skills befitting a physician in order to discuss illness and its outcome with patient and family	Counsel the patient and family members Arrive at a provisional diagnosis Explain the medical condition to family members in a language understood by them Discuss the medical and surgical management, complications, requirement of blood and blood products if needed Explain the prognosis of medical condition	Small group discussion, OPD, DOAP	8th& 9th term			Viva voce End of posting case presetnation
OG35.5	Determine gestational age, EDD and obstetric formula	Address their concerns GA; Menstrual History. Clinical methods Ultrasound examination EDD; Menstrual History Nageles Formula Clinical methods Dating scan No dating scan Then interval Scan	Small group discussion, OPD, DOAP	8th& 9th term			Viva voce End of posting case presetnation

OG35.6	Demonstrate ethical behavior in all aspects of medical practice.	Definition Gravida, Para, Living, Dead and Abortion Autonomy Justice Beneficence	Small group discussion, OPD, DOAP, role play	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.7	Obtain informed consent for any examination / procedure	Non malfeasance For Examination: Informed oral consent For Procedure; informed written consent Signature is must diagnosis of condition name and purpose of procedure benefits, risks, and alternative procedures benefits and risks of each alternative procedures	Small group discussion, OPD, DOAP	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.8	Write a complete case record with all necessary details	Demography Obstetric score with amenorrhea LMP EDD Menstrual history Chief complaint HOPI Present obstetric history, Past obstetric history Past medical and surgical history and personal history General Physical examination with Vitals. Breast and Spine examination Specific Systemic Examination Diagnosis	Small group discussion, DOAP	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.9	Write a proper discharge summary with all relevant information	Contents of discharge summary -name, age, sex, hospital number, address, date of admission &discharge Final diagnosis Name of the operative interventions and intraoperative findings& complications	Small group discussion, DOAP	8th& 9thterm			Viva voce End of posting case presetnation

		Brief history Relevant investigations and Reports Course in the hospital in brief Advice on discharge Warning signs and symptoms relevant to the case to be mentioned Timing of follow up visits					
OG35.10	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.	Definition of referral letter Patient demographics Registered general Practitioner details Referral Details - Institute - Specialty dept Referring Practitioner details Presenting complaints Past /Family History Assessment and examination Legal information Management to date Reason and urgency for referral	Small group discussion, OPD, DOAP	8th& 9th term			Viva voce End of posting case presetnation
OG35.11	Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis and counsel patients	Universal Infection Control Precautions Protective Clothing Isolation Facilities Spillage Of Blood And Body Fluids Sterilization And Disinfection Intravenous Procedures Waste Disposal Staff Protection And Immunization	Small group discussion, OPD, DOAP	3rd 4th 6th 8th& 9th term			Viva voce End of posting case presetnation
OG35.	Obtain a PAP	counsel the patient about need for Pap smear	DOAP	8th&			Viva voce

12	smear in a stimulated environment	Examination ensure the adequate privacy at examination area keep ready equipment needed for the procedure perform examination under aseptic precaution document the findings Proper disposal of gloves	Skill lab	9th term			End of posting case presetnation
OG35. 13	Demonstrate the correct technique to perform artificial rupture of membranes in a simulated / supervised environment	Indications Complications Pelvic examination findings Color of liquor Fetal Heart Assessment Verbal consent	DOAP, Evening labour room posting Skill lab	8th& 9th term			Viva voce End of posting case presetnation
OG35. 14	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment	Define Types Advantages Disadvantages Correct technique Complications – immediate & late	DOAP, Evening labour room posting Skill lab	8th& 9th term			Viva voce End of posting case presetnation
OG35. 15	Demonstrate the correct technique to insert and remove an IUD in a simulated/	Define Types Mechanism of action Advantages Disadvantages Indications and contra indications	Skill lab	8th& 9th term			Viva voce End of posting case presetnation

	supervised environment	Criteria for selection of a client Techniques Uses Complications					
OG35. 16	Diagnose and provide emergency management of antepartum and postpartum hemorrhage in a simulated / guided environment	Symptoms and signs Examination Resuscitation - Airway, breathing, circulation Vitals monitoring Conservative management, medical, balloon tamponade, brace suturing, stepwise devascularization, Emergency hysterectomy.	Small group discussion, drills, Skill lab	8th& 9th term	Skill assessment	Skill assessment	Viva voce End of posting case presetnation
OG35. 17	Demonstrate the correct technique of urinary catheterization in a simulated/ supervised environment	Verbal consent after explaining to the patient Able to recognize and identify external urethral meatus with knowledge of anatomy of urethra Knows importance of aseptic precautions, proper painting and draping of the patient for the procedure Identifies folley's catheter and its parts, urosac Can demonstrate the procedure of catheterization on a manniquin	Skill lab	8th& 9th term	Skill assessment	Skill assessment	Viva voce End of posting case presetnation
Topic: Obstetrics &Gynecological skills - II Number of competencies: (03) Number of procedures that require certification: (NIL)							
OG36. 1	Plan and institute a line of treatment, which is need based, cost effective and appropriate for	History taking to help to arrive at the differential diagnosis Appropriate examination of the patient to elicit signs and narrow the list of differential diagnosis Appropriate investigation to arrive at most probable diagnosis Understanding the specificity and sensitivity of an	Small group discussion, Bed side clinics	8th& 9th term			Viva voce End of posting case presetnation

	common conditions taking into consideration (a) Patient (b) Disease (c) Socio-economic status (d) Institution/ Governmental guidelines.	investigation and its value in arriving at a diagnosis Have idea about cost of investigations so that balance decisions can be taken. Have institutional protocols for common diseases on conditions Understand and cost involved in various treatment options and choses the appropriate treatment based on social economic status					
OG36.2	Organize antenatal, postnatal, well-baby and family welfare clinics	Understands the role of conservative treatment / medical treatment / surgical treatment for various disease conditions Will understand antenatal care and its importance Know the requirements for providing ANC care Will understand the various warning symptoms during antenatal period Knowledge of puerperium Knowledge of assessing the neonatal wellbeing Importance of breast feeding Understand attachment, latching and suckling in breast feeding evaluation Value of organizing postnatal clinics along with paediatrician /neonatologist for comfort and benefit of mother and baby Able to counsel regarding family planning in the postnatal visit	Small group discussion, Bed side clinics	8th& 9th term			Viva voce End of posting case presetnation
OG36.3	Demonstrate the correct	Consent for the procedure Identify the punch biopsy forceps	Small group discussion	8th& 9th			Viva voce End of

	technique of punch biopsy of Cervix in a simulated/ supervised environment	Aseptic precautions, painting and draping for the procedure Visualize the cervix using appropriate instrument Demonstrate the procedure on a maniquin Collect the specimen for histopathological examination	OPD	term			posting case presetnation
Topic: Obstetrics&Gynecological skills - III Number of competencies: (07) Number of procedures that require certification : (NIL)							
OG37.1	Observe and assist in the performance of a Caesarean section	Define caesarean section [CS] Mention the indication for CS Describe preoperative care, investigations, informed consent Appreciate the need to cross match and confirm blood Inform anesthetist, OT staff and neonatologist Observe hand washing, safety check list, instrument counts, type of anesthesia given Enumerate the steps of LSCS List the complications of CS and its management Describe the post-operative care	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG37.2	Observe and assist in the performance of Laparotomy	Appreciate the importance Documentation of all steps, events including new born details Indication for laparotomy Describe the preoperative care and investigations Informed consent, arrange blood and icu bed Lists the steps of laparotomy, need for frozen section. Patient positioning and anesthesia Complications of the procedure Post Operative care	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG37.3	Observe and assist in the performance of	Documentation of all events Indications Assessment for route of surgery	Small group discussion, OT	8th& 9th term			Viva voce End of posting case

	Hysterectomy – abdominal/vaginal	Pre operative preparation Informed consent Anesthesia and patient positioning Steps of Hysterectomy- abdominal/vaginal Complications of the procedure Post Operative care					presetnation
OG37.4	Observe and assist in the performance of Dilatation & Curettage (D&C)	Documentation of all events Indications and contraindications Patient evaluation and pre op preparation Informed consent and anesthesia Steps of procedure Post procedure monitoring Complications of the procedure Documentation of all events	Small group discussion, Minor OT OPD	8th& 9th term			Viva voce End of posting case presetnation
OG37.5	Observe and assist in the performance of Endometrial aspiration - endocervical curettage (EA-ECC)	Discharge advice Know how to take informed consent How to perform per speculum and per vaginal examination Know about instruments used (Pipelle) and aseptic precautions How to take utero cervical length/ cervical length Procedure of EA-ECC Know how to fill the relevant clinical details in HPE /Biopsy form Postop instructions and follow up	Small group discussion, Minor OT OPD	8th& 9th term			Viva voce End of posting case presetnation
OG37.6	Observe and assist in the performance of outlet forceps application	Know how to take informed consent Identify whether there is an appropriate indication for application of outlet forceps/ vacuum/ breech delivery Assess whether all criteria for application of outlet forceps/ vacuum/ breech delivery are met	Small group discussion, Evening labour room	8th& 9th term			Viva voce End of posting case presetnation

	of vacuum and breech delivery	Pre requisites – availability of OT, blood products, Neonatologist, Senior Obstetrician Labour analgesia/ anaesthesia Know how to perform phantom application of outlet forceps/ check equipment of vacuum and choose an appropriate cup/ manouvres for delivery of legs, arms, shoulders and head in assisted breech delivery Perform application of outlet forceps/ vacuum/ breech delivery Know how to give and suture episiotomy and aseptic precautions Identify maternal and neonatal complications Documentation of the procedure	posting				
OG37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion	Counselling the patient regarding the various methods available and complications of each and taking informed consent Look for any contraindications for the method chosen Prescription of first trimester MTP pills Identifying the complications of MTP pills/Incomplete abortion/ Evacuation of retained products Know regarding equipment, instruments and drugs used(Karmans cannula, Suction apparatus) Procedure for Evacuation of retained products in incomplete abortion, under aseptic precautions Check the need for USG and Anti D Know how to fill the relevant clinical details in HPE /Biopsy form Post operative/ post pill instructions and follow up Documentation of the procedure and know which register needs to be filled for intimation to Health	Small group discussion, Minor OT	8th& 9th term			Viva voce End of posting case presetnation

		Department of Government					
Topic: Should observe Number of competencies: (04) Number of procedures that require certification : (NIL)							
OG38.1	Laparoscopy	Indications for laparoscopy Contraindications for laparoscopy Informed consent Anaesthesia under which it is performed and its complications Complications of laparoscopy Postoperative instructions	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG38.2	Hysteroscopy	Definition of Hysteroscopy Steps of Hysteroscopy Indications of Hysteroscopy Diagnostic Hysteroscopy Operative Hysteroscopy Fluid distension Media Post Op care and advice Risks and Complications of Hysteroscopy	Small group discussion, OT	8th& 9th term			Viva voce End of posting case presetnation
OG38.3	Lap sterilization	Sterilization procedure in women Steps of tubal sterilization done laparoscopically Effectiveness of Lap sterilization in prevention of pregnancy Risks associated with Lap tubal sterilization Benefits of Lap tubal sterilization Ideal timing for Lap tubal sterilization Reversal of Lap tubal sterilization procedure	Small group discussion	8th& 9th term			Viva voce End of posting case presetnation
OG38.4	Assess the need for and issue proper medical certificates to patients for	Definition of Medical certificate Medical Certificate certifying illness Medical Certificate certifying fitness Assessing the patient illness and nature of work Responsibility of the issuing doctor	Small group discussion	8th& 9th term			Viva voce End of posting case presetnation

	various purposes	Responsibility of the patient Responsibility of the the third party Certificate Requirements Date of Certificate					

Summary of course content, teaching and learning methods and student assessment for the undergraduate (MBBS) Curriculum

Course content

The course contentbeen 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

	Lectures (hours)	Small group discussion (hours)	Self-directed learning (hours)	Total hours	Clinical postings (weeks)
2nd MBBS	25			25	4weeks First posting in 3-4th terms (15hours/week)
3rd MBBS Part 1	25	35	5	65	4weeks Second posting in 6-7th terms (18hours/week)
3rd MBBS Part 2	70	125	15	210	8+4weeks 3rd&4th posting (18hours/week)
Total	120	160	20	300	20weeks (This includes maternity and family welfare and family planning) Two postings of 4 weeks each. and

Time allotted excludes time reserved for internal / University examinations, and vacation.

25% of allotted time (non-clinical time) of third Professional shall be utilized for integrated learning with pre- and para- clinical subjects. This will be included in the assessment of clinical subjects.

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 Obstetrics and Gynecology problems, their management and correlation with function, rehabilitation, and quality of life

Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories. Use of skill lab to train undergraduates in listed skills should be done mandatorily.

The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday)

The clinical postings in the third professional part II shall be 18 hours per week (3 hrs per day from Monday to Saturday)

Newer T-L method like Learner-doctor method (Clinical clerkship) should be mandatorily implemented, from 1st clinical postings in Obstetrics and Gynaecology 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 posting 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 surgeries if any till patient is discharged.

	Curriculum Focus of Learner - Doctor programme
Posting 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness
Posting 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Posting 3	All of the above and choice of investigations, basic procedures and continuity of care
Posting 4	All of the above and decision making, management and outcome

Attitude, Ethics &Communication Module (AETCOM module)

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 which is called the AETCOM module. The purpose is to help the students apply principles of bioethics, systems-based care, apply empathy and other human values in patient care, communicate effectively with patients and relatives and to become a professional who exhibits all these values. This will be a longitudinal programme spread across the continuum of the MBBS programme including internship. MBBS Phase 3 Part 2, has to complete 8 modules of 5hours each. The OBGyne faculty will have the responsibility of conducting 2-3 modules as per the decision and logistics of each institution.

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 Obstetrics and Gynaecology.

75% attendance in AETCOM Module is required for eligibility to appear for final examination in 3rd professional year 3 part 2.

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 four theory internal assessment (One each in 2nd MBBS and 3rd MBBS Part1 and Two in 3rd MBBS Part2) excluding the prelims in Obstetrics and Gynaecology. An end of posting clinical assessment shall be conducted for each of the clinical postings in Obstetrics and Gynecology. There will be one Theory and Clinical preliminary exams before the student is eligible for university exams.

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.

Learners must secure at least 50% marks of the total marks (combined in theory and clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in Ophthalmology in order to be eligible for appearing at the final University examination.

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

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 Obstetrics and Gynaecology logbook entry completed to be eligible for appearing at the final university examination.

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

University examinations

University examinations in Third Professional Part II shall be held at end of 12months of training in the subjects of Medicine, Surgery including Orthopedics, Obstetrics and Gynecology and Pediatrics.

University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him/her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.

Marks allotted : theory

Obstetrics and Gynecology	**Theory**	**Clinical examination**
Total marks	2 papers of 100 marks each for Obstetrics and Gynecology. The pattern of each question paper is given below	200 marks
	Long answer questions 2X15= 30 marks	
	Short answer questions 10x5=50 marks	
	MCQs 20x1=20marks	

DistributionofMarksforPracticalExaminations:

PracticalExamination	**200 marks**
Obstetricscase	75
Gynecologycase	75

Viva voice examination	**50 marks**
X-Rays/Charts	10
Instruments/Drugs	10
Specimens/Fetalskulland dummypelvis	10
Familywelfare	10
OSCE(commonObstetricsandGynecologyscenarios)	10

The theory paper should include different types such as structured essay(direct or case based), Short Answers Questions (SAQ) and MCQs (Multiple Choice Questions). Marks for each part should be indicated separately.

A minimum of **80%** of the marks should be from the **must know** 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.

One main essay question to be of the **modified variety** containing a clinical case scenario. At least 30% of questions should be clinical case scenario based. Questions to be constructed to test higher cognitive levels.
Clinical examinations will be conducted in the hospital wards. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and develop a management plan.

Viva/oral examination should assess approach to patient management, emergencies, attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data, X-rays, instruments, family welfare, identification of specimens, fetal skull and dummy pelvis,ECG, etc. is to be also assessed.

At least one question in each paper of the clinical specialties in the University examination should test knowledge competencies acquired during the professional development programme. Skill competencies acquired during the Professional Development Programme must be tested during the clinical, practical and viva voce.

Pass criteria

Internal Assessment: 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations

University Examination: Mandatory 50% marks separately in theory and clinicals(clinicals = clinical + viva)

SAMPLE FOR A 100-MARK THEORY QUESTION PAPER IN OBSTETRICS

LONG ANSWER QUESTIONS **2X15=30 marks**

1. A 35 year old Gravida 2, Para 1, living 1 has delivered a twins- 1st baby of weight 2.5kgsand 2nd twin 2.7kg 30 mins back. Patient complains of excessive bleeding per vagina with fatigability and giddiness.. Her pulse is 130/m, BP is 70/50mmHg. Uterus is flabby.
    - What is your diagnosis? (4 marks)
    - What are the reasons. (4 marks)
    - Outline the investigations & treatment of the case. (3+4marks)

2. A 28 year old Gravida 2, Abortion 1 with 32 weeks of pregnancy comes to Emergency ward with 2 episodes of vomiting , headache and blurring of vision. Her pulse is 98/m and BP is 180/110mmHg.
    - What is your diagnosis? (5 marks)
    - Outline the investigations and treatment. (5+5 marks)

SHORT ANSWER QUESTIONS **10X5=50 marks**

3. A 18 year old primigravida came with complaints of easy fatigability and swelling of legs since 1 week . Her Hb is 6gms% .How do u treat this patient?
4. Enumerate the investigations, treatment and vaccination for a 25 years old primigravida with 3 months amenorrhoea. (2+3)
5. Describe the mechanism of labour in breech presentation. Enumerate the fetal complications of vaginal breech delivery. (3+2 marks)
6. A 20 yr old G2P1L1 lady has come in with 6wks of unplanned pregnancy. She wants to terminate the pregnancy, what are the legal issues to consider?
7. Describe the differential diagnosis and management of a Primigravida with 32 weeks of gestation who presented to emergency ward with bleeding PV. (2+3 marks)
8. Describe the indications and methods of medical management of ectopic pregnancy. (2+3 marks)
9. Define maternal mortality. Enumerate the causes of maternal deaths. Mention different programs in India. (1+2+2 marks)
10. Describe the screening tests to diagnose Diabetes in pregnancy.
11. What are the steps of active management of third stage of labour.
12. Enumerate the indications & contraindications of Inj.Methylergometrine in obstetrics.(3+2 marks)

SELECT THE SINGLE BEST RESPONSE TO THE MULTIPLE CHOICE QUESTIONS GIVEN BELOW. 20X1=20 marks

13. 20 year old Gravida 2 Para 1 living 1 comes with history of 3 months amenorrhea and pain abdomen. She has had two episodes of spotting per vagina. On vaginal examination, her vitals are stable, uterus corresponds to 12 weeks size and cervical os is closed.
    The most probable diagnosis is

a) Missed abortion b)Threatened abortion

c) Incomplete abortion d)Complete abortion

SAMPLE FOR A 100-MARK THEORY QUESTION PAPER IN GYNECOLOGY

LONG ANSWER QUESTIONS (2 x 15 marks = 30 marks)

1. 38-year-old comes with excessive menstrual bleeding with passage of clots. She is not pregnant.

a. Discuss the PALM COEIN approach to classifying this condition. (4)

b. Describe in detail the conditions – L and M (3+3)
She is investigated and found to have a 8x8 cm leiomyoma.

c. Discuss the principles and steps in the operative management of such a condition. (5)

2. 16-year-old girl is brought by parents with complaints that she has not attained menstruation.

a. What is the condition . Define this condition .(1+1 MARKS)

b. Enumerate the various causes for the condition.(5 MARKS)

c. Describe the clinical and management of imperforate hymen. (4+4 MARKS)

SHORT ANSWER QUESTIONS (10 x 5 marks = 50 marks)

3. Genital tuberculosis. Discuss the clinical features (2 marks). Enumerate the investigations (1 mark). Discuss the management (2 marks).
4. A 24-year-old P1L1 comes with complaints of curdy white discharge per vaginum. Apply the concept of syndromic management of Sexually Transmitted Disease and prepare a treatment plan for such a patient.
5. Discuss the etiological factors (2 marks), clinical features (1 mark) and classification (2 marks) and of uterovaginal prolapse.
6. Define menopause (1). Discuss the clinical features (2) and management options (2) for menopausal transition.
7. A couple married for 4 years comes with complaints of not being able to bear children. Classify the various causes of this condition.

8. A woman with primary infertility is found to have anovulatory cycles. Enumerate the pharmacological agents for ovulation induction (2). Describe the mechanism of action/ method of usage/ complications of any one of the agents (1+1+1)
9. 45-year-old woman has undergone pap smear and the report shows H-SIL. Discuss the options for management (3) and follow up (2) for the condition
10. Classify Ovariantumours (WHO classification).
11. Enumerate tests for tubal patency (2). Discuss in detail the steps in performance of a Hysterosalpingography (3).
12. A 30-year-old came with raised Beta HCG and passage of grape like vesicles per vaginum. Uterus was evacuated.

a. What is the condition likely to be (1 mark).

b. Prepare a management plan(2 marks)

c. Follow-up plan (2 marks) for this patient.

SELECT THE SINGLE BEST RESPONSE TO THE MULTIPLE CHOICE QUESTIONS GIVEN BELOW.

20X1=20 marks

13) A 48 year old women presents with intermenstrual bleeding for two months and episodes of bleeding occurring anytime in the cycle. There is no associated pain. Differential diagnosis for intermenstrual bleeding does not include

a)endocervical polyp

b)cervical malignancy

c)ovarianteratoma

d) atrophic vaginitis

etc…

Department of Pediatrics

ProfessionalYear –III

Name of the program: MBBS
Name of the subject: Pediatrics
(PE)YearofRevision:2019
Theory Paper Course code:
PAE002PracticalCoursecode:PAE2
03

GOAL

Clinicianwhounderstandsandprovidespreventive,promotive,curative,palliativeandholisticcarewithcompassion.

- Leader andmemberofthehealthcareteamandsystemwithcapabilitiestocollect, analyze,synthesizeandcommunicatehealthdataappropriately.
- Communicatorwithpatients,families,colleaguesandcommunity.
- Lifelonglearnercommittedtocontinuousimprovementofskillsandknowledge.
- Professional,whoiscommittedtoexcellence,isethical,responsiveandaccountabletopatients,communityan dprofession.

The broad goal of the teaching of undergraduate students in Pediatrics is to produce graduates capable ofdeliveringefficientfirstcontactPediatriccare.TheaimofteachingtheundergraduatestudentinPediatrics is to impart such knowledge and skills that may enable him to diagnose and treat commonchildhoodillnessesincludingneonataldisorders.He/sheshallacquirecompetenceforclinicaldiagnosisba sedonhistory,physicalexaminationandrelevantlaboratoryinvestigationsandinstituteappropriatelineofmanagem ent;thiswouldincludediseasescommonintropics(parasitic,bacterialorviralinfections,nutritionaldisorders,includi ngdehydrationandelectrolytedisturbances)andvarioussystemillnesses.

COMPETENCIES

Thestudentmustdemonstrate:

- Abilitytoassessandpromoteoptimalgrowth,developmentandnutritionofchildrenandadolescent sandidentifydeviationsfromnormal,
- AbilitytorecognizeandprovideemergencyandroutineambulatoryandFirstLevelReferralUnitcareforneon ates,infants,childrenandadolescentsandreferasmaybeappropriate,
- Abilitytoperformproceduresasindicatedforchildrenofallagesintheprimarycaresetting,
- Abilitytorecognizechildrenwithspecialneedsandreferappropriately,
- Abilitytopromotehealthandpreventdiseasesinchildren,
- AbilitytoparticipateinNationalProgrammesrelatedtochildhealthandinconformationwiththeIntegratedMa nagementofNeonatalandChildhoodIllnesses(IMNCI)Strategy,
- Abilitytocommunicateappropriatelyandeffectively.

OBJECTIVES

Knowledge

Attheendofthecourse,thestudentshall be ableto

- Demonstrateknowledgeofnationalandregionalhealthcarepoliciesincludingthe NationalHealthMissionthatincorp oratesNationalRuralHealthMission(NRHM)andNationalUrbanHealthMission(NUHM),frameworks,economicsa ndsystemsthatinfluencehealthpromotion,healthcaredelivery,diseaseprevention,effectiveness,responsiveness, qualityandpatientsafety.
- Demonstrateabilityto elicitand record fromthepatient,andotherrelevantsourcesincluding relativesand caregivers, a history that is complete and relevant to disease identification, disease prevention andhealthpromotion.
- Demonstrateabilityto elicitand record fromthepatient,andotherrelevantsourcesincluding relativesandcaregivers,ahistorythatiscontextualtogender,age,vulnerability,socialandeconomicstatus,patientpr eferences,beliefsandvalues.
- Demonstrateabilitytoperformaphysicalexaminationthatiscompleteandrelevanttodiseaseidentification,diseasep reventionandhealthpromotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economicstatus,patientpreferencesandvalues.
- Demonstrateeffective clinical problemsolving, judgmentandability tointerpretandintegrate availabledatainordertoaddresspatientproblems,generatedifferentialdiagnosesanddevelopindividualizedmanag

ementplansthatincludepreventive,promotiveandtherapeuticgoals.

- Demonstrateabilitytochoosetheappropriatediagnostictestsandinterpretthesetestsbasedonscientificvalidity,cost effectivenessandclinicalcontext.
- Demonstrateabilitytoprescribeandsafelyadministerappropriatetherapiesincludingnutritionalinterventions,phar macotherapyandinterventionsbasedontheprinciplesofrationaldrugtherapy,scientificvalidity,evidenceandcostth atconformtoestablishednationalandregionalhealthprogrammesandpoliciesforthefollowing:

Demonstrateabilitytoappropriatelyidentifyandreferpatientswhomayrequirespecializedoradvancedtertiarycare.

Skills

- Demonstratethestepsofinserting anIVcannulain amodel.
- Demonstratethestepsofinsertinganinterosseouslineina Mannequin.
- Provideintra-natalcareandconductanormaldeliveryinasimulatedenvironment.
- Demonstratethecorrectadministrationofdifferentvaccinesinamannequin.
- PerformNeonatalresuscitationinamanikin.
- PerformNGtube insertioninamanikin.
- PerformIVcannulationinamodel.
- PerformInterosseousinsertionmodel.
- Demonstratethetechniqueofliverbiopsyina Perform LiverBiopsyin asimulatedenvironment.
- Observethevariousmethodsofadministering Oxygen.
- Assessairwayandbreathing.Demonstratethemethodofpositioningofaninfant&childtoopenairwayinasi mulatedenvironment.
- Assessairwayandbreathing:administeroxygenusingcorrecttechniqueandappropriateflowrate.
- Assessairwayandbreathing:performassistedventilationby Bagandmaskinasimulated environment.
- SecureanIVaccessinasimulatedenvironment.
- ProvideBLSforchildreninmanikin.
- Demonstrateperformanceofbonemarrowaspirationinmanikin.
- Performinamannequinlumbarpuncture.Discusstheindications,contraindicationoftheprocedure.
- ObserveadministrationofNebulisation.

Attitudeandcommunication

- Communicationwithempathytopatients&patient'sattenders.
- Tocounsel&obtaininformedconsentfrompatient&patientsattenders.

Integration

Theteachingshouldbealignedandintegratedhorizontallyandverticallyinordertoprovidecomprehensivecare forneonates,infants, childrenandadolescentsbasedon asoundknowledge ofgrowth,development,diseaseandtheirclinical,social,emotional,psychologicalcorrelatesinthecontextofnation alhealthpriorities.

SYLLABUS

Reference**:**
MedicalCouncilofIndia,CompetencyBasedUndergraduateCurriculumfortheIndianMedicalGraduate,2018.Volu me2;pg150 - 189

TheorySyllabus: Lectures/Small group discussion

PracticalSyllabus

Number	Topic:NormalGrowthandDevelopment
PE1.4	PerformAnthropometricmeasurements,documentingrowthchartsandinterpret
PE1.7	PerformDevelopmentalassessmentandinterpret

Number	Topic:CommonproblemsrelatedtoGrowth

PE2.2	Assessmentofachildwithfailingtothriveincludingelicitinganappropriatehistoryandexamination
PE2.3	Counselinga parentwithfailing tothrivechild
PE2.5	Assessmentofachildwithshortstature: Elicithistory,performexamination,documentandpresent

Number	**Topic:CommonproblemsrelatedtoDevelopment-1(Developmentaldelay,Cerebralpalsy)**
PE3.3	Assessmentofachildwithdevelopmentaldelay-Elicitdocumentandpresenthistory
PE3.4	Counselaparentofachildwithdevelopmentaldelay
PE3.7	VisitaChildDevelopmentalUnitandobserveitsfunctioning

Number	**Topic:CommonproblemsrelatedtoDevelopment-2(Scholasticbackwardness,LearningDisabilities,Autism,ADHD)**
PE4.6	VisittotheChildGuidanceClinic

Number	**Topic:AdolescentHealth&commonproblemsrelatedtoAdolescentHealthNumberofcompetencies**
PE6.8	Respectingpatientprivacyandmaintainingconfidentialitywhiledealingwithadolescence
PE6.9	PerformroutineAdolescentHealthcheckupincludingelicitinghistory,performingexaminationincludingSMR(SexualMaturityRating),growthassessments(usingGrowthcharts)and systemicexamincludingthyroidandBreastexamandtheHEADSSscreening
PE6.11	Visittothe AdolescentClinic

Number	**Topic:TopromoteandsupportoptimalBreastfeedingforInfants**
PE7.5	Observethecorrecttechniqueofbreastfeedinganddistinguishrightfromwrongtechniques
PE7.7	Performbreastexaminationandidentifycommonproblemsduringlactationsuchasretracted nipples,crackednipples,breastengorgement,breastabscess
PE7.8	Educatemothersonantenatalbreastcareandpreparemothersfor lactation
PE7.9	EducateandcounselmothersforbestpracticesinBreastfeeding
PE7.10	Respectspatientprivacy
PE7.11	ParticipateinBreastFeedingWeekCelebration

Number	**Topic:ComplementaryFeeding**
PE8.4	ElicithistoryontheComplementaryFeedinghabits
PE8.5	Counselandeducatemothers onthebestpracticesinComplimentaryFeeding

Number	**Topic:Normalnutrition,assessmentandmonitoring**
PE9.4	Elicitdocumentandpresentanappropriatenutritionalhistoryandperformadietaryrecall
PE9.5	CalculatetheagerelatedcalorierequirementinHealthandDiseaseandidentifygap
PE9.6	Assessandclassifythenutritionstatusofinfants,childrenandadolescentsandrecognize deviations
PE9.7	Plananappropriatedietinhealthanddisease

Number	**Topic:Providenutritionalsupport,assessmentandmonitoringforcommonnutritionalproblems**
PE10.3	AssessmentofapatientwithSAMandMAM,diagnosis,classificationandplanningmanagement includinghospitalandcommunitybasedintervention,rehabilitationandprevention
PE10.4	Identifychildrenwith under nutritionasperIMNCIcriteriaandplanreferral
PE10.5	Counselparentsofchildrenwith SAMandMAM

Number	**Topic:Obesityinchildren**

PE11.3	Assessmentofachildwith obesitywithregard toelicitinghistoryincludingphysicalactivity, chartinganddietaryrecall
PE11.4	ExaminationincludingcalculationofBMI,measurementofwaisthipratio,identifyingexternal markerslikeacanthosis,striae,pseudogynaecomastiaetc
PE11.5	CalculateBMI,documentin BMIchartandinterpret

Number	**Topic:MicronutrientsinHealthanddisease-1(VitaminsADEK,BComplexandC)**
PE12.3	Identifytheclinicalfeaturesofdietary deficiency/ excessofVitamin A
PE12.4	Diagnosepatients withVitaminAdeficiency,classifyandplanmanagement
PE12.8	IdentifytheclinicalfeaturesofdietarydeficiencyofVitaminD
PE12.9	AssesspatientswithVitaminDdeficiency,diagnose,classifyandplanmanagement
PE12.17	IdentifytheclinicalfeaturesofVitaminBcomplexdeficiency
PE12.18	Diagnosepatients withVitaminBcomplexdeficiencyandplanmanagement
PE12.21	IdentifytheclinicalfeaturesofVitaminC deficiency

Number	**Topic:Micronutrientsin Healthanddisease-2:Iron,Iodine,Calcium,Magnesium**
PE13.3	Identifytheclinicalfeaturesofdietarydeficiencyof Ironandmakeadiagnosis
PE13.4	InterprethemogramandIronPanel
PE13.5	ProposeamanagementplanforFedeficiencyanaemia
PE13.9	IdentifytheclinicalfeaturesofIodinedeficiencydisorders

Number	**Topic:Fluidandelectrolytebalance**
PE15.3	Calculatethefluidandelectrolyterequirementinhealth
PE15.4	Interpretelectrolytereport
PE15.5	Calculatefluidandelectrolyteimbalance
PE15.6	Demonstratethestepsof insertinganIVcannulain amodel
PE15.7	Demonstratethestepsofinsertinganinterosseouslinein amannequin

Number	**Topic:IntegratedManagementofNeonatalandChildhoodIllnesses(IMNCI) Guideline**
PE16.2	Assesschildren<2monthsusingIMNCIGuidelines
PE16.3	Assesschildren>2to5yearsusingIMNCIguidelinesandStratifyRisk

Number	**Topic:TheNationalHealthPrograms:RCH**
PE18.3	ConductAntenatalexaminationof womenindependentlyandapplyat-riskapproachinantenatal care
PE18.4	Provideintra-natalcareandconductanormaldeliveryinasimulatedenvironment
PE18.5	Provideintra-natalcareandobservetheconductofanormaldelivery
PE18.6	PerformPostnatalassessmentofnewbornandmother,provideadviceonbreastfeeding, weaningandonfamilyplanning
PE18.7	Educateandcounselcaregiversofchildren
PE18.8	ObservetheimplementationoftheprogrambyvisitingtheRuralHealthCentre

Number	**Topic:NationalPrograms,RCH-UniversalImmunizationsprogram**
PE19.6	Assesspatientforfitnessforimmunizationandprescribeanageappropriateimmunization schedule
PE19.7	Educateandcounselapatientforimmunization
PE19.8	DemonstratewillingnesstoparticipateintheNationalandsubnationalimmunizationdays
PE19.10	Observethehandlingandstoringofvaccines

PE19.11	DocumentImmunizationinanimmunizationrecord
PE19.12	ObservetheadministrationofUIPvaccines
PE19.13	Demonstratethecorrectadministrationofdifferentvaccinesinamannequin
PE19.14	PracticeInfectioncontrolmeasuresandappropriatehandlingofthesharps

Number	**Topic:CareoftheNormalNewborn,andHighriskNewborn**
PE20.3	PerformNeonatalresuscitationinamanikin
PE20.4	Assessmentofanormalneonate
PE20.5	Counsel/ educatemothersonthecareofneonates
PE20.6	ExplainthefollowupcareforneonatesincludingBreastFeeding,Temperaturemaintenance, immunization, importanceofgrowthmonitoringandredflags
PE20.18	IdentifyandstratifyriskinasickneonateusingIMNCIguidelines

Number	**Topic:Genito-Urinarysystem**
PE21.8	Elicit,documentandpresentahistorypertainingtodiseasesoftheGenitourinarytract
PE21.9	IdentifyexternalmarkersforKidneydisease,likeFailingtothrive,hypertension,pallor,Icthyosis, anasarca
PE21.10	Analyzesymptomandinterpretthephysicalfindingsandarriveatanappropriateprovisional / differentialdiagnosis
PE21.11	Performandinterpret thecommonanalytesinaUrineexamination
PE21.12	Interpretreport of PlainXRayofKUB
PE21.13	EnumeratetheindicationsforandInterpretthewritten reportofUltrasonogramofKUB
PE21.14	Recognize common surgical conditions of the abdomen and genitourinary system andenumerate the indications for referral including acute and subacute intestinal obstruction,appendicitis,pancreatitis,perforation 207ntussusceptions,Phimosis,undescendedtestis, Chordee,hypospadiasis,Torsiontestis,herniaHydrocele,VulvalSynechiae
PE21.15	Discussandenumeratethereferralcriteriaforchildrenwithgenitourinarydisorder
PE21.16	Counsel/educateapatient forreferralappropriately

Number	**Topic:Approachtoand recognitionofachildwithpossibleRheumatologicproblem**
PE22.2	CounselapatientwithChronic illness

Number	**Topic:Cardiovascularsystem-HeartDiseases**
PE23.7	Elicitappropriatehistoryforacardiacdisease,analysethesymptomse.g.breathlessness,chestpain, tachycardia, feeding difficulty, failing to thrive, reduced urinary output, swelling, syncope,cyanoticspells,Suck restcycle,frontalswellingininfants. Documentandpresent
PE23.8	Identify external markers of a cardiac disease e.g. Cyanosis, Clubbing, dependent edema, dentalcaries,arthritis,erythemarash,chorea,subcutaneous nodules,Oslersnode,Janewaylesionsand document
PE23.9	Recordpulse,bloodpressure, temperatureandrespiratoryrateandinterpretaspertheage
PE23.10	Performindependentlyexaminationofthecardiovascularsystem–lookforprecordialbulge, pulsations in the precordium, JVP and its significance in children and infants, relevance ofpercussioninPediatricexamination,Auscultationandothersystemexaminationanddocument
PE23.11	Developatreatmentplanandprescribeappropriatedrugsincludingfluidsincardiacdiseases,anti –failuredrugs,andinotropicagents
PE23.12	InterpretachestXrayandrecognizeCardiomegaly
PE23.13	ChooseandInterpretbloodreportsinCardiacillness
PE23.14	InterpretPediatricECG
PE23.15	UsetheECHOreportsinmanagementofcases

PE23.18	Demonstrateempathywhiledealingwith childrenwithcardiacdiseasesineverypatientencounter

Number	Topic:DiarrhoealdiseasesandDehydration
PE24.9	Elicit,documentandpresenthistorypertainingtodiarrhealdiseases
PE24.10	Assessforsignsofdehydration,documentandpresent
PE24.11	ApplytheIMNCIguidelinesinriskstratificationofchildrenwithdiarrhealdehydrationandrefer
PE24.12	PerformandinterpretstoolexaminationincludingHangingDrop
PE24.13	InterpretRFTandelectrolytereport
PE24.14	Planfluidmanagementas pertheWHOcriteria
PE24.15	PerformNGtube insertioninamanikin
PE24.16	PerformIVcannulationinamodel
PE24.17	PerformInterosseousinsertionmodel

Number	Topic:Acuteandchronicliverdisorders
PE26.5	ElicitdocumentandpresentthehistoryrelatedtodiseasesofGastrointestinalsystem
PE26.6	IdentifyexternalmarkersforGIandLiverdisorderse.g..Jaundice,Pallor,Gynaecomastia,Spider angioma, Palmar erythema, Icthyosis, Caput medusa, Clubbing, Failing to thrive, Vitamin A and Ddeficiency
PE26.7	Performexaminationoftheabdomen,demonstrateorganomegaly,ascitesetc.
PE26.8	Analyzesymptomsandinterpretphysicalsignstomakeaprovisional/differentialdiagnosis
PE26.9	InterpretLiverFunctionTests,viralmarkers,ultrasonogramreport
PE26.10	DemonstratethetechniqueofliverbiopsyinaPerform Liver Biopsyin asimulatedenvironment
PE26.13	Counselandeducatepatientsandtheirfamilyappropriatelyon liverdiseases

Number	Topic:PediatricEmergencies–CommonPediatricEmergencies
PE27.10	ObservethevariousmethodsofadministeringOxygen
PE27.14	Assessemergencysignsandprioritize
PE27.15	Assessairwayandbreathing:recognizesignsof severerespiratorydistress.Checkforcyanosis, severechestindrawing,grunting
PE27.16	Assessairwayandbreathing.Demonstratethemethodofpositioningofaninfant&childto openairwayinasimulatedenvironment
PE27.17	Assessairwayandbreathing:administeroxygenusing correcttechniqueandappropriate flowrate
PE27.18	Assessairwayandbreathing:performassistedventilationby Bagandmaskinasimulated environment
PE27.19	Checkforsignsofshocki.e.pulse,Bloodpressure,CRT
PE27.20	SecureanIVaccessinasimulatedenvironment
PF27.21	Choosethetypeoffluidandcalculatethefluidrequirementinshock
PE27.22	Assesslevelofconsciousness&provideemergencytreatmenttoachildwithconvulsions/coma - Positionanunconsciouschild - Positionachildwithsuspected trauma - AdministerIV/perrectalDiazepamforaconvulsingchildinasimulatedenvironment
PE27.23	Assessforsignsofsevere dehydration
PE27.27	Assessforhypothermiaandmaintaintemperature
PE27.28	ProvideBLSforchildreninmanikin
PE27.30	Demonstrateconfidentialitywithregardtoabuse
PE27.31	Assesschildforsignsofabuse
PE27.32	Counselparentsofdangerouslyill/terminallyillchildtobreakabadnews
PE27.33	ObtainInformedConsent

PE27.34	Willing to bea part ofthe ERteam
PE27.35	Attendstoemergencycalls promptly

Number	**Topic:Respiratorysystem**
PE28.9	Elicit,documentandpresentageappropriatehistoryofachildwithupperrespiratoryproblem includingStridor
PE28.10	Performotoscopicexaminationoftheear
PE28.11	Performthroatexaminationusingtonguedepressor
PE28.12	Performexaminationofthe nose
PE28.13	Analyzetheclinicalsymptomsandinterpretphysicalfindingsandmakeaprovisional/ differentialdiagnosisinachildwithENTsymptoms
PE28.14	Developatreatmentplananddocumentappropriatelyinachildwithupperrespiratorysymptoms
PE28.15	StratifyriskinchildrenwithstridorusingIMNCIguidelines
PE28.16	Interpretbloodtestsrelevanttoupperrespiratoryproblems
PE28.17	Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case ofmanagementInterpretCXRinforeignbody aspirationandlowerrespiratorytractinfection, understandthesignificanceofthymicshadowinpediatricchestX-rays
PE28.18	Describetheetio-pathogenesis,diagnosis,clinicalfeatures,managementandpreventionoflower respiratoryinfectionsincludingbronchiolitis,wheezeassociatedLRTIPneumoniaandempyema
PE28.19	Describetheetio-pathogenesis,diagnosis,clinicalfeatures,managementandpreventionofasthma inchildren
PE28.20	Counselthechild withasthmaonthecorrectuseofinhalers inasimulatedenvironment

Number	**Topic:AnemiaandotherHemato-oncologicdisordersinchildren**
PE29.10	Elicit,documentandpresentthehistoryrelatedtoHematology
PE29.11	Identifyexternalmarkersforhematologicaldisorderse.g..Jaundice,Pallor,Petechiaepurpura, Ecchymosis,Lymphadenopathy,bonetenderness,lossofweight,Mucosalandlargejointbleed
PE29.12	Performexaminationoftheabdomen,demonstrateorganomegaly
PE29.13	Analysesymptomsandinterpretphysicalsignsto makeaprovisional/differentialdiagnosis
PE29.14	InterpretCBC,LFT
PE29.15	Performandinterpretperipheralsmear
PE29.17	Demonstrateperformanceofbonemarrowaspirationinmanikin
PE29.18	EnumeratethereferralcriteriaforHematologicalconditions
PE29.19	Counselandeducatepatientsaboutprevention andtreatmentofanemia

	Topic:SystemicPediatrics-CentralNervoussystem
PE30.17	ElicitdocumentandpresentanageappropriatehistorypertainingtotheCNS
PE30.18	Demonstratethecorrectmethodforphysicalexamination ofCNSincluding identificationof externalmarkers.Documentandpresentclinicalfindings
PE30.19	Analysesymptomsandinterpretphysicalfindings andproposeaprovisional/differential diagnosis
PE30.20	InterpretandexplainthefindingsinaCSFanalysis
PE30.22	InterpretthereportsofEEG,CT,MRI
PE30.23	Performinamannequinlumbarpuncture.Discusstheindications,contraindicationofthe procedure

Number	**Topic:AllergicRhinitis,Atopic Dermatitis,BronchialAsthma ,UrticariaAngioedema**
PE31.2	RecognizetheclinicalsignsofAllergicRhinitis
PE31.4	IdentifyAtopicdermatitisandmanage
PE31.6	RecognisesymptomsandsignsofAsthma

PE31.7	DevelopatreatmentplanforAsthma appropriatetoclinicalpresentation&severity
PE31.9	InterpretCBC andCXRay inAsthma
PE31.11	ObserveadministrationofNebulisation

Number	**Topic:ChromosomalAbnormalities**
PE32.2	IdentifytheclinicalfeaturesofDown'sSyndrome
PE32.3	InterpretnormalKaryotypeandrecognizeTrisomy21
PE32.5	Counselparentsregarding 1.Presentchild 2.Riskin thenextpregnancy
PE32.7	IdentifytheclinicalfeaturesofTurnerSyndrome
PE32.8	InterpretnormalKaryotypeandrecognizetheTurner Karyotype
PE32.10	Counselparentsregarding 1.Presentchild 2.Riskin thenextpregnancy
PE32.12	IdentifytheclinicalfeaturesofKlineferlter Syndrome
PE32.13	InterpretnormalKaryotypeandrecognizetheKlineferlterKaryotype

Number	**Topic:Endocrinology**
PE33.2	RecognizetheclinicalsignsofHypothyroidismandrefer
PE33.3	Interpretandexplainneonatalthyroidscreeningreport
PE33.5	InterpretBloodsugarreportsandexplainthediagnosticcriteriaforType1 Diabetes
PE33.6	Performandinterpret UrineDipStickforSugar
PE33.7	PerformgenitalexaminationandrecognizeAmbiguousGenitaliaandreferappropriately
PE33.9	PerformSexualMaturityRating(SMR)andinterpret
PE33.10	RecognizeprecociousanddelayedPubertyandrefer
PE33.11	Identifydeviations ingrowthandplanappropriatereferral

Number	**Topic:VaccinepreventableDiseases-Tuberculosis**
PE34.5	Abletoelicit,documentandpresenthistoryofcontactwithtuberculosisineverypatientencounter
PE34.6	IdentifyaBCGscar
PE34.7	InterpretaMantouxtest
PE34.8	InterpretaChestRadiograph
PE34.9	Interpretbloodtestsinthecontextoflaboratoryevidencefortuberculosis
PE34.11	PerformAFBstaining

ASSESSMENT

Reference:
MedicalCouncilofIndia,CompetencyBasedAssessmentModuleforUndergraduateMedicalEducationTraining Program,2019.pp7-21&24-30

Internal assessmentTheoryI A:

- Threeinternalassessmentexamswill beconducted.
- Formative assessment will include day to day assessment, AETCOM, AITO, assignments, quiz andtutorials

PracticalIA:

- 3 Practical assessments (1 in II MBBS, 1 in III MBBS Part – I and 1 in III MBBS part – II) will bedone atthe end of theposting(includingtheformativeassessmentofrecord/ logbook).
- FormativeassessmentswillincludedaytodayassessmentRecordbook/Logbook,AETCOM.

Note: As per new guidelines under Assessment module mentioned above, Internal Assessment marks willnot be added to Final Summative University Examination but will be shown as a separate head under theSubject.

EligibilitytoappearforUniversityExamination

AttendanceEligibility	75%intheoryand80%inpracticalineachsubjectandineachprofessionalyear
InternalAssessment	Learnersmust secureatleast50%marksof the totalmarks (combinedintheoryandpractical/clinicalnotlessthan40%marksintheoryandpractical separately)

University examinationTheoryExamination

Theoryexaminationconsistsofonepaper-100marks.

Questionpaperpattern

Theoryquestionpaperpatternfor100marksforadurationof 3hours

MCQ(15Direct&5CaseBased):	20X 1	=20marks
LongAnswerQuestion:Direct/CaseBasedEssay:	2X15	=30marks
ShortAnswerQuestion(SAQ):	10X 5	=50marks

TopicsdistributionmatrixforPAPER

S.No	TOPICS	MCICompetency Number	LAQ	SAQ
1	GeneralPediatricsincludingi nfections	1.1– 15.7	✓	✓
2	Newborn	20.1–20.20	✓	✓
4	CommunityPediatrics	16.1–19.16	✓	✓
5	SystemicPediatrics	21.1–36.1	✓	✓
6	AETCOM	--	--	✓

PracticalSyllabus

DistributionofMarksforPracticalExaminations

PracticalexaminationwillbeconductedunderheadsofPracticalexaminationandVivaVoce.

1.	**PracticalExamination**	**(80marks)**
	Paediatrics Case	30
	NEWBORN Case	20
	SPOTTERS	10
	OSCE(OBSERVED /UNOBSERVED)	10
2	**Viva–VoceExamination**	**(20marks)**
	X-RAYS	5
	INSTRUMENT	5
	NUTRITION	5
	DRUGS&VACCINES	5
3	Logbook / Record	10
	TOTALMARKS	**100MARKS**

	MaximumMarks	Passingminimumineachcomponent	PassingCriteria(Theory&Practical)
Theory	**100**	**50**	**100** [Mandatory 50% marks in theoryand practical (practical = practical/clinical+viva)[theory=theorypaper(s)only]
Practical+viva	**100**	**50**	

RECOMMENDEDTEXTBOOKSFORPAEDIATRICS

S.No.	Title	Author/Editor	Publisher	Edition/Year
1	OPGhai	Vinod K PaulAravindBagga	CBS publishers &distributorsPrivateLimited	8th Edition
2	IAPTextbookof Paeditrics	A.Parthasarathy	JaypeePublishers	6th Edition

PRACTICALTEXTBOOKSFORPAEDIATRICS

S.No.	Title	Author/Editor	Publisher	Edition
1	PaediatricClinicalMethods	MeharbanSingh	CBS publishers &distributors Private Limited	4th Edition
2	Hutchinson;s-ClinicalMethods	Michael SwashMichael Glynn	SaundersElsevier	22nd Edition
3	Macleod-ClinicalMethods	Macleod	Elsevier	14th Edition

SVIMS- SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN, TIRUPATI

VENUE: COUNCIL HALL, SVIMS-SPMCW Date:21.04.2022

Sub: 2nd Bos for 3rd MBBS (Part I & II) Time:9.30 AM

SL.NO.	NAME	Members	Signature
1	Dr Alladi Mohan DEAN, SVIMS	Chairman	21/4/22
2	Dr K V Sreedhar Babu REGISTRAR, SVIMS	Member	21/4/2022
3	Dr Sharan B Singh.M PRINCIPAL, SVIMS-SPMCW	Member Secretary	21/4/22
	Dr.Aparna R Bitla, Vice Principal (Pre-clinical), SVIMS-SPMCW	Member	21/4/2022
4	Dr Vanajakshamma Controller of Examinations, SVIMS	Member	For D Manohara Supt.,
5	Dr K.Nagaraj Professor & HoD, Dept. of Community Medicine, SVIMS-SPMCW,Tirupati	Member	K.Nagaraj 21/4/22
6	Dr G.Ravi Prabhu Professor & Head, Community Medicine, S.V.Medical College, Tirupati	External Member (Offline)	21-04-2022
7	Dr Pankaj Shaw Professor & HoD, Community Medicine, Sree Ramachandra Institute of Medical	External Member (Online)	ONLINE K.Nagaraj 21/4/22
8	Dr Prerana Anthwal Assistant Professor & i/c, HoD, Dept. of ENT,	Member	21/4/2022
9	Dr G. Srinivas Assistant Professor, Dept. of ENT, Govt.Medical College, Cuddapah.	External Member (Online)	ONLINE 21/4/22
10	Dr.GSN MURTHY Professor of ENT, Govt ENT Hospital, Visakhapatnam	External Member (Online)	ONLINE 21/4/2022
11	Dr Prabhanjan Assistant Professor & HoD i/c, Dept. of Opthalmology, SVIMS-SPMCW	Member	21/4/22
12	Dr B.S.Naik Professor , Dept.of Opthalmology, Kurnool Medical College, Kurnool	External Member (Online)	ONLINE
13	Dr Suhas Prabhakar Professor & HoD, Dept. of Opthalmology, Sri Ramachandra Medical College, Porur,	External Member (Online)	ONLINE
14	Dr K.Bhaskar Reddy Professor & Head, Dept of Forensic Medicine,	Member	21.4.22

15	Dr T.T.K. Reddy HoD Department of Forensic Medicine, S.V.Medical College, Tirupati	External Member (Offline)	21/4/2022
16	Dr Jagadeesh Professor of Forensic Medicine, Vydehi Medical College, Marthanahalli, Bangalore	External Member (Offline)	21/4/22.
17	Dr Katyaramal Professor, Dept. of Medicine & 3rd Year MBBS coordinator	3rd Year MBBS co-ordinator	21/4/22
18	Dr K. Ravi Professor & Head, Bangalore Medical College and Research Institute, Bangalore	External Member (Online)	ONLINE
19	Dr V.A.Kothiwale Professor, Department of Medicine, Registrar, KLE Academy of Higher Eduation and Research Belgavi-590010.	External Member (Online)	ONLINE
20	Department of TB&RD	Member	A-Anutha
21	Department of Psychiatry	Member	
22	Department of DVL	Member	
23	Department of Emergency Medicine	Member	K. Rohith Gupta 21/4/2022
24	Dr Y.Mutheeswaraiah Professor & HoD, Dept. of General Surgery, SVIMS-SPMCW, Tirupati	Member	21.4.2022
25	Dr Srinivas N.M Dept of General Surgery, Bangalore, Bangalore Medical College and Research Institute	External Member (Online)	ONLINE
26	Dr S.Nagamunaiah Professor, Dept of General Surgery, Nellore, ACSR Govt. Medical College	External Member (Online)	ONLINE
27	Department of Anaesthesia Dr. Alok Sarmukaddam	Member	ONLINE 21-4-22
28	Department of Radiology	Member	
29	Department of Dental Surgery	Member	21/4/22

30	Dr J.Malathi Associate Professor & i/c HoD, Dept.of OBG, SVIMS-SPMCW	Member	Malathi
31	Dr T.Bharathi Professor, Dept. of OBG, SVMC, Tirupati	External Member (Offline)	
32	Dr Dharma Vijay Prof & HoD, Dept. of OBG, MVJ Medical College, HOSKOTE	External Member (Online)	
33	Dr N.Punith Patak Associate Professor & i/c HoD Dept. of Paediatrics, SVIMS-SPMCW	Member	N.P.
34	Dr Manohar Professor of Paediatrics, ACSR Medical College, Nellore	External Member (Online)	ONLINE
35	Dr Vinayaka.G Professor & HoD, Paediatrics, Subbaiah Institute of Medical College, Karnataka	External Member (Online)	ONLINE
36	Dr Venugopal Associate Professor, Dept. of Orthopaedics, SVIMS-SPMCW	Member	
37	Dr S Hari Babu, Professor, Dept. of Orthopaedics, S.V.Medical Collge, Tirupati	External Member (Offline)	
38	Dr.Arun, Professor & HoD, Dept. of Orthopaedics, Sri Devaraj Urs Medical	External Member (Online)	ONLINE

Submitted :.

As per orders of Director by regarding, of obg, HODIC, the External Members are changed : as follows : (copy Enclosed)

31.	Dr. Indira. Professor, ACSR, Nellore.	External Member (Offline)	✓
32.	Dr. Rajiv Saxena Professor & HoD, Oxford Medical College, Bangalore.	External Member (online)	ONLINE Malathi