SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

Ordinance Governing
MBBS Degree Course Phase II
Curriculum 2020-21

Amended up to December, 2021

SHRI DHARMASTHALA MANJUNATHESHWARA UNIVERSITY

(A State Private University established under the Shri Dharmasthala Manjunatheshwara University
Act No 19 of 2018 of Government of Karnataka and Notification No. ED 261 URC 2018 dated 19th December 2018)

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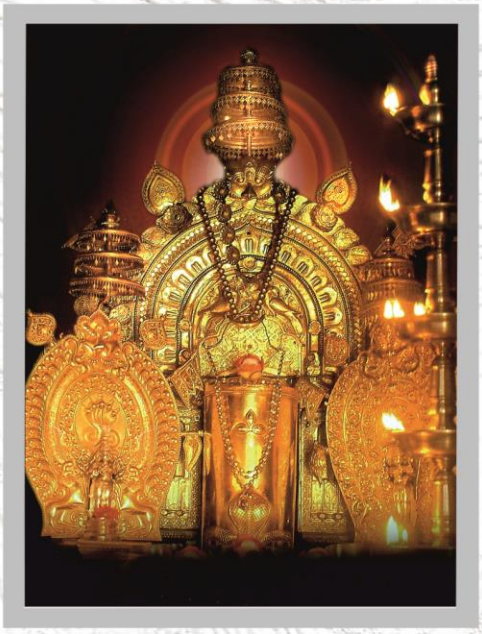
|| Om Shri Manjunathaya Namaha ||



Shree Kshethra Dharmasthala

Edition Year : 2020-21

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THE LOGO

Poojya Dr D. Veerendra Heggade, Hon'ble Chancellor of the University, while searching for an appropriate Logo for the University, saw a photograph picked from Temple Architecture showing Wings of a Bird, sculpted in Indian style and wanted it to be incorporated in the logo for the University, as the Wings symbolize 'Spreading of Knowledge beyond Boundaries'. Further it was felt that the Central theme of the logo should be 'Rudra' (The Linga) with wings on each side. In this way, the logo of the University was conceptualized.

Hence:

1. The central part represents **Rudra** who Demolishes Darkness.
2. The Three **horizontal lines on The Linga** stand for Samyak Darshan (Right Belief), Samyak Gyan (Right Knowledge) and Samyak Charitra (Right Conduct).
3. The **Wings** symbolize spreading of Knowledge across the boundaries.
4. Base line **"Truth Liberates"** highlights the Purpose of Education: to liberate oneself unconditionally. It shows that it is not discipline, nor knowledge nor the efforts to freedom that liberate but Truth is what liberates you from all your conditioning and ignorance.

The overall significance of Shri Dharmasthala Manjunatheshwara University's Logo is:

Darkness of ignorance is destroyed by the flow of knowledge to bring Liberty to everyone, by realizing the truth. And, it should spread globally without the boundaries as hindrance.

SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

TRUTH LIBERATES

VISION

Shri Dharmasthala Manjunatheshwara University will set the highest standards of teaching and learning by awakening the intelligence of the students and nurturing the creativity hidden in them by creating an environment where the ancient wisdom blends with modern science, to transform them into whole human beings to face the challenges.

MISSION

- To ensure that the journey of education is inspiring, pleasant and enjoyable.
- Attract the best of teachers and students.
- Achieve high principles of trust, love and spirituality in the students.
- Create a collaborative, diverse and exclusive community.
- Transform the student of today to be a leader of tomorrow and a better human being.
- Produce passionate teachers.
- Evolve innovative teaching techniques.
- Create a peaceful environment.
- Prepare the student to face the social challenges.
- Create a University of which the Nation is proud of.
- Be an effective partner in Nation Building.
- Create an Eco-friendly University.
- Create a University based on the principles of beauty, love and justice.

||Om Shanti! Om Shanti! Om Shanti||

SHRI
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SDMU/ACAD/MED/UG/F-4/Notif-221(A1)/684/2021

Date: 31-12-2021

NOTIFICATION

Amendment in the Ordinance Governing Curricula of MBBS Professional Year II – 2021

Ref:

1. NMC Regulations on Graduate Medical Education (Amendment) 2019 (Ref. No. MCI-34(41)/2019-Med./161726 dated: 4th November, 2019) and its Subsequent Amendments
2. Notification on Ordinance Governing Curricula of MBBS Professional Year II – 2021 (SDMU/ACAD/MED/UG/F-4/41/2021 Dated: 15-01-2021)
3. Minutes of the 5th Meeting of Academic Council (Ref. No. SDMU/AC/M5/F-28/626/2021 Dated: 10-12-2021)
4. Minutes of the 6th Meeting of Board of Studies – Paraclinical (UG & PG) (Ref. No. SDMCMS&H/Micro/106/21 Dated: 13-11-2021)

In exercise of the powers conferred under Statutes 1.4 (Powers and functions - Para ix & x) & 1.8 (Powers and functions - Para i) of the Shri Dharmasthala Manjunatheshwara University, Approval of the Academic Council of Shri Dharmasthala Manjunatheshwara University is hereby accorded for the Amendment of the Ordinance Governing Revised Curricula of MBBS Professional Year II – 2021 as below, with effect from the date of notification.

Page No.13, **MARKS DISTRIBUTION FOR UNIVERSITY SUMMATIVE EXAMINATION**

	~~THEORY~~		~~THEORY TOTAL~~	~~PRACTICAL~~		~~PRACTICAL TOTAL~~
	~~Summative exam written paper~~	~~MCQs~~		~~Summative exam~~	~~Viva~~	
~~PAPER 1~~	~~80~~	~~20~~	~~200~~	~~80~~	~~40~~	~~120~~
~~PAPER 2~~	~~80~~	~~20~~				

Amended as below

Page No.13, **MARKS DISTRIBUTION FOR UNIVERSITY SUMMATIVE EXAMINATION**

	THEORY		THEORY TOTAL	PRACTICAL		PRACTICAL TOTAL
	Summative exam written paper	MCQs		Summative exam	Viva	
PAPER 1	80	20	200	60	40	100
PAPER 2	80	20				

Lt. Col. U. S. Dinesh (Retd.)
REGISTRAR
REGISTRAR,
Shri Dharmasthala Manjunatheshwara University, Dharwad

DISCLAIMER

This curriculum booklet has been framed as per the guidelines issued by the National Medical Council and is subject to modifications as and when the National Medical Council amends the aforesaid guidelines.

UNIT A
CURRICULUM FOR PARACLINICAL SUBJECTS OF MBBS PY-II

CURRICULUM FOR MEDICINE & ALLIED CLINICAL SUBJECTS OF MBBS PY-II PART-1

CURRICULUM FOR SURGERY & ALLIED CLINICAL SUBJECTS OF MBBS PY-II PART-2

PHARMACOLOGY

1. GOAL

The broad goal of the teaching of undergraduate students in Pharmacology is to inculcate a rational and scientific basis of therapeutics in a medical graduate.

2. OBJECTIVES

2.1 KNOWLEDGE

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

i. Understand the general principles of drug action and handling of drugs by the body in all the individuals including children, elderly, lactating and pregnant women and those having a renal and/or hepatic disease and genetic variations.
ii. Prescribe drugs rationally by: a. Understanding the importance of both the non-drug and drug treatment b. Selection of drugs based on suitability, tolerability, efficacy and cost.
iii. Apply pharmacokinetic principles in clinical practice pertaining to the drugs used in commonly encountered conditions, National Health Programmes and emergency medical conditions.
iv. Foresee, prevent and manage adverse drug events and drug interactions.
v. Use antimicrobials judiciously for therapy and prophylaxis.
vi. Understand and implement the concepts of essential medicines, pharmacoeconomics and evidence-based medicine for improving the community health care.
vii. Describe the clinical presentation and management of common poisoning including bites and stings.
viii. Understand the basic concepts of new drug development with emphasis on design and conduct of clinical trials and interpretation of their results.

2.2 SKILLS

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

i. Write a correct, complete and legible prescription for common ailments including those in the National health Programmes and emergency medical conditions.
ii. Calculate the drug dosage using appropriate formulae for an individual patient.
iii. Administer the required dose of different drug formulations using appropriate devices and techniques (.e.g injections, inhalers, transdermal patches etc.).
iv. Advice and interpret the therapeutic monitoring reports of important drugs.
v. Identify, analyze and report adverse drug reactions to appropriate authorities.
vi. Retrieve drug information from appropriate sources including the electronic resources.

vii. Analyse critically drug promotional literature in terms of pharmacological actions of the ingredients, rational/irrational nature of the preparation, economics of the use and claims by the pharmaceutical companies.

viii. Interpret data from in-vitro and in-vivo experiments designed to study the effect of drugs in animals and human beings.

2.3 ATTITUDE AND COMMUNICATION SKILLS

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

i. Communicate with the patient regarding optimal use of drug therapy, devices and storage of medicines.

ii. Follow the drug treatment guidelines laid down for common diseases including those covered under the National Health Programmes and emergency medical conditions and be capable of initiating and monitoring the treatment, recording progress and assessing the outcome.

iii. Motivate patients with chronic diseases to adhere to the line of management as outlined by the health care provider.

iv. Appreciate the relationship between cost of treatment and patient compliance.

v. Exercise caution in prescribing drugs likely to produce dependence and recommend the line of management.

vi. Understand the legal and ethical aspects of prescribing drugs.

vii. Evaluate the ethics, scientific procedures, social and legal implications involved in the development and introduction of new drugs.

2.4 INTEGRATION

From the integrated teaching of other basic medical science subjects, the student should be able to comprehend the regulation of human organ functions, interpret basis of disease process and integrate the knowledge of pharmacological basis of using drugs in prophylaxis and treatment of diseases in clinical practice.

3. TEACHING HOURS AND COURSE CONTENT

Sl. No	Teaching Learning Method	No. of Hours
1	Large group teaching	80
2	Small group teaching (SGT) Small group discussions- SGD/Tutorials/Seminars/Case based learning sessions/Integrated/ AETCOM teaching sessions= 64 Hrs Practical sessions= 74 Hrs	138
3	Self-directed Learning(SDL)	12
	TOTAL	**230**

Course contents

i. THEORY (Large and small group teaching)

Sl No.	GENERAL PHARMACOLOGY	Hrs
1	Define & describe the principles of pharmacology & pharmacotherapeutics **PH 1.1** (Introduction, definition & sources of drugs)	14
2	Describe basis of TDM Evidence based medicine (EBM) & Therapeutic drug monitoring (TDM) including clinical trials-phases **PH 1.2** Describe overview of drug development, phases of clinical trials and Good Clinical Practice **PH 1.64**	
3	Enumerate & identify drug formulations & drug delivery systems **PH 1.3** **(** Solid dosage forms, liquid dosage forms, parenteral dosage forms & drug delivery system)	
4	Describe absorption, distribution, metabolism & excretion of drugs **PH 1.4**	
5	Describe general principles of mechanism of drug action **PH 1.5** (Principles & mechanism of drug action, receptor pharmacology, DRC, combined effect of drugs, factors modifying drug action)	
6	Describe principles of pharmacovigilance & ADR (Adverse Drug Reaction) reporting. Define, identify & describe the management of ADR **PH 1.6 & 1.7**	
7	Identify & describe management of drug interactions **PH 1.8**	
8	Describe nomenclature of drugs i.e., generic, branded drugs **PH 1.9, PH 1.59**	
9	Describe parts of correct complete legible prescription. Identify errors in prescription & correct appropriately **PH 1.10**	
10	Describe various routes of drug administration **PH 1.11**	
11	Calculate dosage of drugs using appropriate formulae for individual patients (children, elderly & patients with renal dysfunction) **PH 1.12** **(**Creatinine clearance, dosage calculation in renal dysfunction and in special cases)	

	DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM	
1	Describe mechanism of action, types, doses, side effects, indications, contraindications of adrenergic & anti adrenergic drugs **PH 1.13 (**Introduction to ANS, Adrenergic neurotransmission & its receptors, Adrenergic drugs, Adrenergic blockers - alpha blockers, beta blockers)	08
2	Describe mechanism of action, types, doses, side effects, indications, contraindications of cholinergic & anti cholinergic drugs **PH 1.14 (**Cholinergic drugs & cholinomimetic alkaloids, anticholinesterase agents & treatment of organophosphorus compound poisoning, anti-cholinergic drugs)	
3	Describe mechanism of action, types, doses, side effects, indications, contraindications of skeletal muscle relaxants **PH 1.15**	
	DRUGS ACTING ON PERIPHERAL NERVOUS SYSTEM	
1	Describe the mechanism/s of action, types, doses, side effects, indications & contraindications of local anesthetics. **PH 1.17**	01
	AUTOCOIDS AND RELATED DRUGS	
1	Describe the mechanism/s of action, types, doses, side effects, indications & contraindications of drugs acting by modulating autocoids: (Prostaglandins, serotonin (5HT), histamine modulating drugs- antihistaminics, 5HT modulating drugs with drugs for migraine, ecosonoids, NSAIDS, drugs for gout, anti-rheumatic drugs **PH 1.16**	06
	DRUGS ACTING ON THE CENTRAL NERVOUS SYSTEM	
1	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and pre-anesthetic medication. **PH 1.18**	17
2	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) **PH 1.19**	
3	Describe the effects of acute and chronic ethanol intake. **PH 1.20**	
4	Describe the symptoms and management of methanol and ethanol poisonings **PH 1.21**	
5	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences) **PH 1.22**	
6	Describe the process and mechanism of drug de-addiction **PH 1.23** (pharmacotherapy for de-addiction)	

	DRUGS ACTING ON THE CARDIOVASCULAR SYSTEM	
1	Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs affecting renal system including diuretics, antidiuretics –vasopressin and analogues **PH 1.24**.	13
2	Describe mechanisms of actions and contraindications of the drugs modulating the renin angiotensin and aldosterone system. **PH 1.26** (Classification, mechanism of action, indications, side effects, contraindication of Angiotensin converting enzyme inhibitors, angiotensin receptor blockers and direct renin inhibitors)	
3	Describe the mechanism of action, types, doses, side effects, indications and contraindications of antihypertensive dugs and drugs used in shock**. PH 1.25, PH 1.27**	
4	Describe the mechanism of action , types, doses, side effects, indications and contraindications of drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease(PVD) **PH 1.28** (Classification, mechanism of action, indications, side effects, contraindication of antianginal drugs and drugs for PVD).	
5	Describe the mechanism of action , types, doses, side effects, indications and contraindications of drugs used in congestive heart failure **PH 1.29**	
6	Describe the mechanism of action , types, doses, side effects, indications and contraindications of the antiarrhythmics **PH 1.30 (Non-Core)**	
	DRUGS AFFECTING BLOOD AND BLOOD FORMATION	
1	Describe the mechanism/s action, types, doses, side effects, indications & contraindications of drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders **PH 1.25** (Mechanism/s action, types, doses, side effects, indications & contraindications of Coagulants, anticoagulants, antiplatelets, fibrinolytics, plasma expanders, hypolipidaemic drugs)	08
2	Describe the mechanism/s action, types, doses, side effects, indications & contraindications of drugs used in dyslipidemias. **PH 1.31** (Mechanism/s action, types, doses, side effects, indications & contraindications of hypolipidaemic drugs)	
3	Describe the mechanism/s action, types, doses, side effects, indications & contraindications of drugs haematological disorders like, drugs used in anemias and colony stimulating factors **PH 1.35**	

	DRUGS ACTING ON THE RESPIRATORY SYSTEM	
1	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and Chronic obstructive pulmonary disease **PH1.32**	02
2	Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussives, expectorants/ mucolytics) **PH1.33**	
	DRUGS ACTING ON THE GASTROINTESTINAL SYSTEM	
1.	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. **PH - 1.34**	03
	HORMONES AND RELATED DRUGS	
1	Describe the mechanism of action, types, doses, side effects, indications and contraindications of drugs used in endocrine disorders (diabetes mellitus, thyroid disorders and osteoporosis) **PH 1.36 (**Antidiabetic drugs(Insulin and its analogues, oral hypoglycaemic drugs and other newer anti-diabetic drugs, Thyroid and anti- thyroid drugs, drugs affecting calcium metabolism)	17
2	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used as sex hormones, their analogues and anterior Pituitary hormones **PH 1.37 (**Introduction to anterior pituitary hormones, androgens and anabolic steroids. Estrogens and anti-estrogens, selective estrogen receptor modulators-SERMs)	
3	Describe the mechanism of action, types, doses, side effects, indications and contraindications of corticosteroids **PH1.38**	
4	Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception **PH1.39**	
5	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. **PH1.40** Drugs for ovulation induction including menotropins and erectile dysfunction	
6	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants. **PH1.41**	

	CHEMOTHERAPY	
1.	Describe general principles of chemotherapy **PH - 1.42** **(Anti-microbial agents-**Different basis of classifying, problems with use, drug of choice, combined use of agents, prophylactic use and their failure in therapy. Classification, mechanism of action, pharmacokinetics, interactions, therapeutic and prophylactic uses & adverse effects of i) Broad spectrum antibiotics ii) Beta lactum antibiotics	33
2	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program **PH - 1.43** (Describe rational use of anti-microbial agents)	
3	Describe the first line antitubercular dugs, their mechanisms of action, side effects and doses **PH - 1.44** **(**Classification, mechanism of action, pharmacokinetics, adverse effects and uses of anti TB Drugs. DOTS / short course chemotherapy in treatment of tuberculosis including those of second line drugs. Classification, mechanism of action, pharmacokinetics, interactions, uses & adverse effects, contraindications of macrolides and aminoglycosides)	
4	Describe the drugs used in MDR and XDR tuberculosis **PH - 1.45**	
5	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs **PH - 1.46** **(**Classification, mechanism of action, pharmacokinetics, interactions, uses & adverse effects, multi drug therapy and drugs used in treatment of Leprosy and Lepra reaction)	
6	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis **PH - 1.47** **(**Classification, mechanism of action, pharmacokinetics, interactions, uses & adverse effects, contraindications of antimalarial, antiamoebic drugs, drugs used in Kalazar & intestinal helminthiasis)	
7	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV **PH - 1.48** **(**Classification, mechanism of action, pharmacokinetics, interactions, uses & adverse effects, contraindications of anti-retroviral drugs, HIV treatment guidelines including preferred & alternate anti HIV regimen, Post exposure prophylaxis of HIV infection and non retroviral drugs) **(Urinary tract infection (UTI)** Classification, mechanism of action, pharmacokinetics, interactions, uses & adverse effects, contraindications of drugs used in treatment of UTI.	

	Classification mechanism of action and resistance, pharmacokinetics, interactions, uses & adverse effects of cotrimoxazole, sulphonamides, list the rational fixed dose combinations of sulfonamides Classification, mechanism of action and resistance, pharmacokinetics, interactions, uses & adverse effects of fluroquinolones and drugs for influenza and STD)	
8	Describe mechanism of action, classes, side effects, indications & contraindications of anticancer drugs **PH - 1.49**	
	MISCELLANEOUS	
1	Describe the mechanism action, types, doses, side effects, indications & contraindications of immunomodulators & organ transplant rejection **PH 1.50**	09
2	Describe occupational & environmental pesticides, food adulterants, pollutants & insect repellents **PH 1.51**	
3	Describe management of common poisoning, insecticides, common sting & bites **PH 1.52**	
4	Describe Heavy metal poisoning & Chelating agents **PH 1.53**	
5	Describe vaccines & their uses **PH 1.54**	
6	Describe & discuss the following National Health Programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Kala Azar, Diarrhoeal diseases, Anaemia & Nutritional disorders, Blindness, Non-communicable diseases, Cancer & Iodine deficiency **PH 1.55**	
7	Describe basic aspects of Geriatric & Paediatric pharmacology **PH 1.56**	
8	Drugs used in Skin disorders **PH 1.57**	
9	Drugs used in Ocular disorders **PH 1.58**	
10	Describe & discuss Pharmacogenomics & Pharmacoeconomics **PH 1.60 (Non-Core)**	
11	Describe & discuss the dietary supplements & nutraceuticals **PH 1.61 (Non-Core)**	
12	Describe and discuss antiseptics and disinfectants **PH 1.62**	
13	Describe Drug Regulations, acts and other legal aspects **PH 1.63**	
	TOTAL THEORY (Lectures and SGD) HOURS	**144**

ii. PRACTICAL PHARMACOLOGY

	CLINICAL PHARMACY	**14**
1	Demonstrate understanding of the use of various dosage forms (oral/local/parenteral; solid/liquid) **PH 2.1**	10
2	Prepare oral rehydration solution from ORS packet and explain its use **PH 2.2**	
3	Demonstrate the appropriate setting up of an intravenous drip in a simulated environment **PH 2.3**	02
4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations **PH 2.4**	02
	CLINICAL PHARMACOLOGY	**39**
5	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient **PH 3.1**	10
6	Perform and interpret a critical appraisal (audit) of a given prescription **PH 3.2**	05
7	Perform a critical evaluation of the drug promotional literature **PH 3.3**	05
8	To recognize and report an adverse drug reaction **PH 3.4**	04
9	To prepare and explain a list of P-drugs for a given case/condition **PH 3.5**	05
10	Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drugs **PH 3.6**	04
11	Prepare a list of essential medicines for a healthcare facility **PH 3.7**	02
12	Communicate effectively with a patient on the proper use of prescribed medication **PH 3.8**	04
	EXPERIMENTAL PHARMACOLOGY	**14**
13	Administer drugs through various routes in a simulated environment using mannequins **PH 4.1**	06
14	Demonstrate the effects of drugs on blood pressure (vasopressor and vaso-depressors with appropriate blockers) using computer aided learning **PH4.2**	08
	COMMUNICATION SKILLS IN PHARMACOLOGY	**07**
15	Communicate with the patient with empathy and ethics on all aspects of drug use **PH 5.1**	01
16	Communicate with the patient regarding optimal use of a) drug therapy, b) devices and c) storage of medicines **PH 5.2**	01
17	Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider **PH 5.3**	01
18	Explain to the patient the relationship between cost of treatment and patient compliance **PH5.4**	01

19	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management **PH 5.5**	01
20	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs **PH 5.6**	01
21	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs **PH 5.7**	01
	TOTAL PRACTICAL HOURS	**74**

Note: Content under NONCORE category cannot be assessed in Summative assessments. However, the same can be assessed in Formative assessments.

SUGGESTED DISTRIBUTION OF TEACHING HOURS					
Sl No	**Topic**	**Large Group**	**Tutorials/ Integrated learning- SGT (64 Hrs)**	**Practical (74 Hrs)**	**Self-Directed Learning (SDL)**
		(80 Hrs)	**(Total- 138 Hrs)**		**(12 Hrs)**
1.	General pharmacology	12	2	14	
2.	Drugs acting on ANS & PNS	7	2	17	
3.	Autacoids	5	2		
4.	Drugs acting on CNS	9	8		
5.	Diuretics, antidiuretics & Drugs acting on CVS	7	6		
6.	Drugs affecting blood & blood formation	6	2		
7.	Drugs acting on Respiratory System		2		
8.	Drugs acting on GIT		3		
9.	Hormones & related drugs	12	6		
10.	Chemotherapy including antineoplastics	22	13		
11.	Miscellaneous		8	43	
12.	**AETCOM**		10		
	TOTAL (230 Hrs)	**80**	**64**	**74**	**12**

THEORY: 80 Hours
PRACTICAL: 74 Hours
SGT (tutorials/seminars/case based teaching)/AETCOM / AITo - 64 hours
SDL- 12 Hours

NOTE: *The above table containing teaching hours assigned to different topics under large and small group teaching may be used as a guide by the Institute.*

ASSESSMENT METHODS (FORMATIVE AND SUMMATIVE)

- ***Written (MCQ's/Structured Long Essay Questions/Short essay questions/Short Answer questions/Clinical vignette Based Questions).***
- ***Viva-Voce***

4. CERTIFICATION OF SKILLS:

To be evaluated using format provided in the Logbook. Checklist can be prepared by subject experts.

Note: *In theory, Practical and certification of skill sections, topics with corresponding competency numbers as mentioned in volume 1 of competency based undergraduate curriculum for Indian Medical Graduate (2018) have been mentioned.*

Comp no.	Competency Description	No. required to certify P
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient	5
PH3.2	Perform and interpret a critical appraisal (audit) of a given prescription	3
PH3.3	Perform a critical evaluation of the drug promotional literature	3
PH3.5	To prepare and explain a list of P-drugs for a given case/condition	3
Total	**Total number of competencies to be certified - 4**	**14**

5. SCHEME OF EXAMINATION:

A. FORMATIVE ASSESSMENT:

THEORY INTERNAL ASSESSMENT:

- A minimum of **THREE** Internal Assessments (IAs) to be conducted
- Formative assessment marks shall be calculated based on scoring in written tests/ small group teaching participation/ seminars/ assignments and log book assessment of SDL topics and AETCOM modules.

PRACTICAL INTERNAL ASSESSMENT

- A minimum of **THREE** Practical Internal Assessments (IAs) to be conducted
- Viva/oral examination should assess approach to clinical context in the concepts of basic sciences and included in practical IA marks.

3rd Internal assessment must be conducted similar to the university examination pattern.

The distribution of internal assessment marks shall be as mentioned below:

Theory IA	Maximum Marks	Practical IA	Maximum Marks
Theory written paper	60	Practical exam	60
Formative assessment from SDL/ Class tests/MCQs/Tutorials/Seminars/Assignments	15	Practical Viva Voce	20
Formative assessment from log book	20	Formative assessment from day to day assessment (SGT)	15
AETCOM modules (one question in the theory paper)	05	Record book evaluation	05
TOTAL	**100**		**100**

FINAL INTERNAL ASSESSMENT MARKS

Final IA marks will be calculated as follows:

Final IA marks out of 100 = Average of all three IAs

Level of participation in small group teaching, SDL and AETCOM modules shall be assessed using the format given in the log book.

A clear record of all components that add to the internal assessment marks needs to be maintained by the institution/departments and retained by them for at least 5 years after completion of the examination.

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.

The format for providing feedback is given in the log book.

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.

B. SUMMATIVE ASSESSMENT:

Eligibility criteria:

- Learners must secure at least 50% marks of total marks (combined in theory and practical; not less than 40% marks in theory and practical separately) assigned for internal assessment in pharmacology in order to be eligible for appearing at the final University examination.
- Student should secure a minimum of 75% attendance in Theory and 80 % in Practical classes to be eligible to appear for university examination.
- Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

Pass criteria:

- University Theory Exam – Student should secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass.
- University Practical Exam – Student shall secure 50% marks (including Viva-voce)
- Internal assessment is considered under separate heading of passing. Students should secure at least 50% of the total marks (combined in theory and practical) assigned for internal assessment in order to be declared successful at the final university of that subject.
- A candidate, who has not secured requisite aggregate in the internal assessment, may be provisionally permitted to appear for university examination. However, he/she has to successfully complete the remediation measures prescribed by the institution / University as the case may be prior to the declaration of his/her results in that particular phase. Failure to meet prescribed 50% marks in internal assessment after availing remedial measures will lead to annulment of the results of the candidate in that particular subject in the university examination.

MARKS DISTRIBUTION FOR UNIVERSITY SUMMATIVE EXAMINATION

	THEORY		**THEORY TOTAL**	**PRACTICAL**		**PRACTICAL TOTAL**
	Summative exam written paper	MCQs		Summative exam	Viva	
PAPER I	80	20	**200**	60	40	**100**
PAPER II	80	20				

THEORY SUMMATIVE EXAMINATION:
Written paper: Paper-1: 100 marks + Paper 2: 100 marks = 200 marks
Time: 3 hours for each paper

The pattern of questions in each paper shall be as mentioned below:

Type of Question	Number of Questions	Maximum Marks for each question	Total
Structured Long essay questions (SLEQ)	2	10	20
Short essay questions (SEQ) (includes case vignette based questions)	8	05	40
Short answer questions (SAQ)	10	02	20
Multiple Choice Questions (MCQs)	20	01	20
Total marks			100

The question papers shall be based on the blue print of question paper setting.

- Total marks under each type of question from each topic needs to be entered by QP Setter.
- It should be in accordance with Shri Dharmasthala Manjunatheshwara University guidelines.

Blueprint for the theory examinations (For use by the question paper setter)

PAPER 1 TOPICS	Total max marks as per SDMU guidelines	MCQs 1 mark each	SLEQs 10 marks each	SEQs 5 marks each	SEQ Case vignette based 5 marks each	SAQs 2 marks each	Total Marks *
General pharmacology including clinical pharmacology	15						
Drugs acting on ANS	15						
Drugs acting on PNS (LA & Skeletal muscle relaxants)	10						
Drugs acting on CNS	25						
Diuretics, antidiuretics	05						
Drugs acting on CVS	20						
Drugs affecting blood & blood formation	10						
TOTAL	100						

PAPER 2 TOPICS	Total max marks as per SDMU guidelines	MCQs 1 mark each	SLEQs 10 marks each	SEQs 5 marks each	SEQ Case vignette based 5 marks each	SAQs 2 marks each	Total Marks*
Chemotherapy including antineoplastic agents	40						
Hormones & related drugs	20						
Drugs acting on GIT	10						
Autacoids and related drugs	12						
Drugs acting on Respiratory System	08						
Miscellaneous (immuno-pharmacology, chelating agents, vitamins, enzymes, antiseptic & disinfectants, drugs acting on skin and mucus membrane)	10						
TOTAL	100						

*Total marks include MCQs.

The weightage of marks allotted for each topic shall be strictly adhered to while setting a question paper. A MINIMUM OF 10% and up to a MAXIMUM OF 30% marks shall be allocated to assess the higher order thinking of the learner.

The questions framed shall be with appropriate verbs without any ambiguity or overlap.

Chapter wise distribution of marks in Pharmacology paper 1 and 2 for University Exam

PAPER - 1		PAPER - 2	
Topics	**Marks**	**Topics**	**Marks**
General pharmacology including clinical pharmacology	15	Chemotherapy including antineoplastic agents	40
Drugs acting on ANS & PNS(LA & Skeletal muscle relaxants)	25	Hormones & related drugs	20
Drugs acting on CNS	25	Drugs acting on GIT	10
Diuretics, antidiuretics & Drugs acting on CVS	25	Autacoids and related drugs & Drugs acting on Respiratory System	20
Drugs affecting blood & blood formation	10	Miscellaneous (immunopharmacology, chelating agents, vitamins, enzymes, antiseptic & disinfectants, drugs acting on skin and mucus membrane)	10
Total	**100**	**Total**	**100**

Chapter wise distribution of type of Questions and Marks will be as below:

Paper – 1

General pharmacology, Drugs acting on ANS, Drugs acting on CNS, Drugs acting on CVS , Drugs affecting blood & blood formation	Long Essay 2X10=20 Marks	20
General pharmacology including clinical pharmacology, Drugs acting on ANS & PNS(LA & Skeletal muscle relaxants), Drugs acting on CNS, Diuretics, antidiuretics & Drugs acting on CVS , Drugs affecting blood & blood formation	Short Essays 8X5=40 Marks	40
General pharmacology including clinical pharmacology, Drugs acting on ANS & PNS(LA & Skeletal muscle relaxants), Drugs acting on CNS, Diuretics, antidiuretics & Drugs acting on CVS , Drugs affecting blood & blood formation	Short Answer 10X2=20 Marks	20

Paper – 2

Chemotherapy including antineoplastic agents, Hormones & related drugs, Drugs acting on GIT, Autacoids and related drugs	Long Essays 2X10=20 Marks	20
Chemotherapy including antineoplastic agents, Hormones & related drugs, Drugs acting on GIT, Autacoids and related drugs & Drugs acting on Respiratory System, Miscellaneous (immunopharmacology, chelating agents, vitamins, enzymes, antiseptic & disinfectants, drugs acting on skin and mucus membrane)	Short Essays 8X5=40 Marks	40
Chemotherapy including antineoplastic agents, Hormones & related drugs, Drugs acting on GIT, Autacoids and related drugs & Drugs acting on Respiratory System, Miscellaneous (immunopharmacology, chelating agents, vitamins, enzymes, antiseptic & disinfectants, drugs acting on skin and mucus membrane)	Short Answer 10X2=20 Marks	20

Note- The topics 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 topics is inevitable. Students should be prepared to answer overlapping topics.

PRACTICAL SUMMATIVE EXAMINTION: TOTAL 120 MARKS
PRACTICAL EXERCISES: 80 MARKS

1. Exercise 1: **Clinical pharmacy** (dosage forms 2.1 including ORS 2.2 and ROA 2.3) **and clinical pharmacology** (prescription writing 3.1 and audit /CCR 3.2) – 20 marks
2. Exercise 2: **Clinical pharmacology** (including P drugs 3.5, EML 3.7 **and communication skills** 3.8, 5.1, 5.2)- 20 marks
3. Exercise 3: **Clinical pharmacy** including drug dose calculation 2.4 **and clinical pharmacology** ADR reporting 3.4, OTC drugs 5.6 - 20 marks
4. Exercise 4: **Experimental pharmacology** including graphs 4.1 & 4.2 and DPL 3.3 - 20 marks

PRACTICAL VIVA VOCE: 40 MARKS (Will be based on Practical Pharmacology)

6. SELF DIRECTED LEARNING (SDL)

Suggested topics should be entered in the log book as per the format mentioned in the log book.

7. INTEGRATION:

• May be conducted in the form of sharing/nesting/correlation using CBL/PBL/ Case study approach and involving various departments concerned while preparing the specific learning objectives of the integration topics.

• Department involved may be chosen according to the topic and may be conducted as Horizontal/ Vertical form of integration as per the CBME document.

Competency list for integration in Large group teaching sessions (Theory)				
SL	**Comp No.**	**Competency to be integrated by nesting/ sharing/ aligning**	**Integrating depts.**	
			Horizontal	**Vertical**
1	PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction.		Paediatrics, General Medicine
2	PH1.15	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants		Anesthesiology, Physiology
3	PH1.16	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: anti-histaminics, 5-HT modulating drugs, NSAIDs, drugs for gout, anti-rheumatic drugs, drugs for migraine		General Medicine
4	PH1.17	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anesthetics		Anesthesiology
5	PH1.18	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and pre-anesthetic medications		Anesthesiology
6	PH1.19	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS,		Psychiatry, Physiology

		(including anxiolytics, sedatives & hypnotics, anti-psychotic, anti-depressant drugs, anti-maniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs)		
7	PH1.20	Describe the effects of acute and chronic ethanol intake		Psychiatry
8	PH1.21	Describe the symptoms and management of methanol and ethanol poisonings		General Medicine
9	PH1.22	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)		Psychiatry
10	PH1.23	Describe the process and mechanism of drug deaddiction		Psychiatry
11	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
12	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
13	PH1.27	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock		General Medicine

14	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
15	PH1.29	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure		General Medicine
16	PH1.30	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the antiarrhythmics		General Medicine
17	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
18	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
19	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
20	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

21	PH1.35	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like: 1.Drugs used in anemias 2.Colony Stimulating factors		General Medicine, Physiology
22	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
23	PH1.39	Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception		Obstetrics & Gynaecology
24	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
25	PH1.41	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants		Obstetrics & Gynaecology
26	PH1.42	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	Microbiology	General Medicine, Pediatrics
27	PH1.44	Describe the first line antitubercular dugs, their mechanisms of action, side effects and doses.		Respiratory Medicine
28	PH1.45	Describe the drugs used in MDR and XDR Tuberculosis	Microbiology	Respiratory Medicine
29	PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	Microbiology	Dermatology

30	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	Microbiology	General Medicine
31	PH1.48	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV	Microbiology	
32	PH1.52	Describe management of common poisoning, insecticides, common sting and bites		General Medicine
33	PH1.55	Describe and discuss the following National Health Programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filaria, Kala Azar, Diarrhoeal diseases, Anaemia & nutritional disorders, Blindness, Non-communicable diseases, cancer and Iodine deficiency	Community Medicine	
34	PH1.56	Describe basic aspects of Geriatric and Pediatric pharmacology		Paediatrics
35	PH1.57	Describe drugs used in skin disorder		Dermatology
36	PH1.58	Describe drugs used in Ocular disorders		Ophthalmology

Competency list for integration in DOAP/ skill lab sessions/log book maintenance			
1	PH 2.4 (DOAP)	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations	Paediatric, General Medicine
2	PH 3.1 (Log book)	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient	General Medicine
3	PH 3.3 (Log book)	Perform a critical evaluation of the drug promotional literature	General Medicine
4	PH 3.5 (Log book)	To prepare and explain a list of P-drugs for a given case/condition	General Medicine

8. RECOMMENDED TEXT BOOKS, REFERENCE BOOKS AND ATLAS

Text Books: (*Note: A single textbook may not cover the entire curriculum. Referring to more than one book is recommended.)*

Recent editions of:

1. RS Satoskar, Nirmala Rege, SD Bhandarkar. Pharmacology and pharmacotherapeutics, M/S. Popular Prakashan, Elsevier India.
2. K.D. Tripathi, Essentials of Medical Pharmacology, M/s. Jaypee Brothers, Post Box, 7193, G-16, EMCA House, 23/23, Bansari Road, Daryaganj New Delhi.
3. Bertram Katzung. Basic and Clinical Pharmacology, Lange Medical Books, McGraw Hill Medical Publishing Division.
4. Bennett PN, Brown MJ, Sharma P. Clinical pharmacology. Edinburgh: Churchill Livingstone
5. Whalen K. Lippincott Illustrated Reviews: Pharmacology. New Delhi: Wolters Kluwer (India)
6. Mukta N. Chowta, Ashok Shenoy, Ashwin Kamath. Manual of Practical Pharmacology For MBBS
7. Goodman & Gillman, The Pharmacological basis of Therapeutics, (International Edition), Toel G, Hardman Lee E. Limbir

PATHOLOGY

1. GOAL

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

2. OBJECTIVES

2.1 KNOWLEDGE

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

i. Describe the structure and ultrastructure of an injured cell, mechanisms of cell injury, cell death and repair and to correlate structural and functional alterations.
ii. Explain the pathophysiological processes which govern the maintenance of homeostasis, mechanisms of their disturbance and the morphological and clinical manifestations associated with it.
iii. Describe the mechanisms and patterns of tissue response to injury in order to appreciate the pathophysiology of disease processes and their clinical manifestations.
iv. 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.

2.2 SKILLS

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

i. Describe the rationale and principles of the common diagnostic laboratory tests and interpretation of the results;
ii. Perform the simple bed-side tests on blood, urine and other biological fluid samples;
iii. Formulate a rational scheme of investigations aimed at diagnosing and managing common diseases;
iv. Understand biochemical and physiological disturbances that occur as a result of disease with the background of knowledge acquired in preclinical subjects.

2.3 INTEGRATION

From the integrated teaching of other basic sciences, student should be able to comprehend the regulation and integration of the functions of the organs and systems in the body and thus interpret the anatomical basis of disease process.

3. TEACHING HOURS AND COURSE CONTENT

Sl. No	Teaching Learning Method	No. of Hours
1	Large group teaching	80
2	Small group teaching (SGT) (Small group discussions- SGD/Tutorials/Seminars/Case based learning sessions/Integrated teaching sessions/Practical)	138
3	Self-directed Learning(SDL)	12
	TOTAL	**230**

Course contents:

General pathology: 38hrs		
Sl no	**Topic(competency Nos)**	**Hrs**
	Cell Injury & Apoptosis	
1	**PA 1.1 to PA 1.3, PA 2.1 to PA 2.6** Introduction to Pathology, Role of Pathologist in diagnosis & Management of disease, Common definitions & terms used in pathology. Cell injury – Causes Mechanisms (reversible), Types & effects, Clinical significance. Intracellular accumulation of fats, proteins, carbohydrates, pigments Reversible injury Vs Irreversible Injury: Apoptosis, Mechanisms, type. Irreversible injury, Necrosis, Autolysis, gangrene.	**5**
	Inflammation and Repair	
2	**PA 4.1 to PA 4.4 , PA 5.1** Inflammation – Definition, stimuli, Vascular and cellular events. Mediators of Inflammation. Chronic Inflammation – Definition, causes, types, Granulomatous inflammation. Wound healing – Types, Mechanism, factors influencing wound healing, Complications of wound healing.	**5**

Hemodynamic Disorders		
3	**PA 6.1, PA 6.3, PA 6.4, PA 6.5, PA 6.6** Edema. Thrombosis. Embolism. Shock.	**4**
Neoplasia		
4	**PA 7.1, PA 7.2, PA 7.3, PA 7.5** Define and classify neoplasia. Differentiate benign from malignant neoplasms Spread of malignant tumours. Molecular basis of cancer. Carcinogens and process of Carcinogenesis - Physical Carcinogenesis - Chemical Carcinogenesis -Microbial Carcinogenesis Effects of tumor on the host Paraneoplastic syndromes. Grading & staging of Carcinoma.	**5**
Immunopathology, AIDS and Amyloidosis		
5.	**PA9.1 to PA9.5, PA3.1** Normal immune mechanisms and HLA system. Hypersensitivity reactions type I, II, III & IV. Autoimmunity- Definition, central and peripheral tolerance. Autoimmune disorders. Systemic Lupus Erythematosus – Definition, pathogenesis, pathology & lab diagnosis. Pathogenesis and pathology of HIV, AIDS, AIDS defining diseases. Amyloidosis- Definition, pathogenesis and pathology, clinical features, lab diagnosis.	**5**
Genetics & Paediatric tumours		
6.	**PA 11.1 to PA 11.3** Common cytogenetic abnormalities and mutations in childhood. Tumor and tumour- like conditions in infancy and childhood Storage disorders in infancy and childhood	**2**
Haematology		
7	**PA 13.1 to PA 13.5, PA 14.1 to PA 14.3, PA 15.1 to PA 15.4, PA 16.1 to PA 16.7, PA 17.1, PA 17.2** Definition and classification of anemia, Investigations of anemia , Microcytic hypochromic anemia: Iron deficiency anemia: causes, pathogenesis, laboratory investigations. Macrocytic anemia: Vitamin B12 deficiency anemia: causes, Vita B12 metabolism, pathogenesis, laboratory investigations . Hemolytic anemia: Definition, classification, pathogenesis, clinical features and haematological indices. Thalassemia and Sickle cell anemia : etiology, pathogenesis and laboratory investigations: peripheral smear and haematological indices. Aplastic anemia: etiology, pathogenesis and laboratory findings.	**6**

WBC disorders		
8	**PA 18.1, PA 18.2, PA 19.1 to PA 19.7, PA 20.1** Leukemias: acute leukemias and chronic leukemia: aetiology, genetics, pathogenesis, classification and hematogical features. Lymphoma: pathogenesis and pathology of Hodgkin's lymphoma and Non-Hodgkin's lymphoma. Plasma cell disorders: Plasma cell myeloma	**3**
Haemorrhagic disorders		
10	**PA21.2, 21.2,21.3,21.4,21.5** Normal hemostasis. ITP. Hemophilia. DIC	**2**
Blood banking		
11	**PA22.1 and 22.2** Blood banking and transfusion.	**1**
Systemic Pathology: 42 hrs **GIT**		
1	**PA24.1 to PA24.7** Peptic Ulcer Disease: Etiology, Pathogenesis, Microbiology, Gross and Microscopic features, Clinical features. Carcinoma Stomach: Etiology, Pathogenesis, Gross and microscopic features. Inflammatory Bowel Disease: Etiology , Pathogenesis, Gross and Microscopic features of Crohn disease and Ulcerative Colitis. Carcinoma Colon: Etiology, Pathogenesis , Gross and microscopic features. Differentiating Adenoma from Carcinoma	**5**
Hepatobiliary system		
2	**PA25.1 to PA25.6.** Jaundice. Bilirubin Metabolism. Etiology, Pathogenesis, To distinguish between Direct and Indirect Hyperbilirubinemia, To Interpret liver function and To distinguish between obstructive and non-obstructive jaundice based on clinical features and liver function tests. (P) Hepatic Failure: Pathophysiology, Pathologic changes, Clinical Manifestations. Complications and consequences. Hepatitis: Etiology and pathogenesis of viral and toxic hepatitis. To distinguish between causes of hepatitis based on clinical and laboratory parameters, Pathology, Complications, Consequences, To interpret viral serology (P) Alcoholic liver disease and cirrhosis: Pathophysiology, Pathology, Progression Hepatocellular carcinoma, Cholecystitis & Cholelithiasis.	**6**

Respiratory System		
3	**PA 26.1 to PA 26.6** Pneumonia, Tuberculosis of the lung, Obstructive airway disease and bronchiectasis, Occupational lung diseases, Lung tumours.	**5**
Blood vessels and The Heart		
4	**PA 27.1 to 27.6** Atherosclerosis: Definition, Risk factors, Pathogenesis, Pathology and complications. Rheumatic Fever: Etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications. IHD: Epidemiology with clinical syndromes Myocardial Infarction: Risk factors, pathogenesis, pathology, diagnostic tests and complications. Infective Endocarditis: Etiology, pathogenesis, pathology, diagnosis and complications	**4**
Renal system		
5	**PA 28.1 to PA 28.16** Glomerular diseases, Nephrotic syndrome, Nephritic syndrome. Acute tubular necrosis , acute and chronic pyelonephritis and reflux nephropathy. Cystic disease of the kidney, Renal tumors & urothelial tumors.	**5**
Male Genital Tract		
6	**PA 29.1 to PA 29.4** Premalignant lesions and Carcinoma of the penis. Benign prostatic hyperplasia & carcinoma of the prostate. Testicular tumors	**2**
Female Genital Tract & Breast		
7	**PA 30.1 to PA 30.9** Carcinoma cervix, carcinoma of the endometrium, Leiomyomas & leiomyosarcomas, Ovarian tumors, Gestational trophoblastic diseases **PA31.1 to PA31.4** Benign breast diseases, Carcinoma of the breast	**5**
Endocrine system		
8	**PA 32.1 to PA 32.9** Goitre: Classification, etiopathogenesis, pathology and iodine deficiency. Hyperthyroidism & hypothyroidism and thyroiditis Carcinoma of thyroid. Diabetes mellitus: Classification, epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression	**5**

Bone and soft tissues		
9	**PA33.1 to 33.5** Bone tumors, Soft tissue tumors	**2**
SKIN		
10	**PA34.1, to PA34.4** Tumours of skin, Squamous cell carcinoms, Basel cell carcinoma Malignant melanoma	**1**
CNS		
11	**PA35.1, PA35.2** Meningitis and CSF findings. CNS tumors.	**2**

Total LGT hours = 80 hours.

II MBBS –CBME Small Group Teaching (Tutorials/Seminars/Integrated Learning) hours

S.N	COMPET-ENCY NO	COMPETENCY	Hrs
1	**PA2.6**	Cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia	**2**
2	**PA2.7**	Mechanisms of cellular aging and pathological calcification	**2**
3	**PA6.2**	Hyperemia, congestion, hemorrhage	**2**
4	**PA6.6**	Ischemia /infarction its types, etiology, morphologic changes and clinical effects	**2**
5	**PA 7.5**	Immunology and immune response to cancer Laboratory diagnosis and staging of cancer	**2**
6	**PA 9.3**	Organ transplantation, mechanism of rejection, scleroderma and Sjogren's syndrome	**2**
7	**PA18.1**	Causes of leucocytosis, leucopenia, lymphocytosis and leukemoid reactions	**2**
8	**PA19.1, 19.2**	Causes and describe the differentiating features of lymphadenopathy and Splenomegaly, Pathogenesis and pathology of tuberculous lymphadenitis.	**2**
9	**PA 24.1**	Oral cavity : pre-cancerous lesions, TB intestine and carcinoid syndromes	**2**
10	**PA25.1**	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	**2**

11	**PA25.2**	Portal hypertension and Pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences	**2**
12	**PA26.7**	Etiology, types, exposure, genetics ,environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	**2**
13	**PA 27.2, 27.7**	Aneurysms, Pericardial effusion and pericarditis	**2**
14	**PA 27.3, 27.9**	Acute & chronic heart failure, cardiomyopathy	**2**
15	**PA 28.9**	Kidney changes in SLE, DM, HT, Amyloidosis	**2**
16	**PA28.13**	Renal stones and Obstructive uropathy	**2**
17	**PA 28.3, 28.4**	Acute and chronic renal failure	**2**
18	**PA 30.6 to 30.9**	Cervicitis, endometriosis and endometrial hyperplasia, Adenomyosis.	**2**
19	**PA 32.6**	Etiology, pathogenesis, manifestations, laboratory, morphologic features complications and metastases of pancreatic cancer	**2**
20	**PA32.7**	Etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency.	**2**
21	**PA32.8**	Parathyroid abnormalities	**2**
22	**PA33.1**	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis, Paget's disease and rheumatoid arthritis.	**2**
23	**PA 36.1**	Retinoblastoma	**2**

Total SGT hours : 46 hours + 10 hrs Integrated Teaching.

II MBBS PATHOLOGY - DOAP SESSION / PRACTICAL ACCORDING TO CBME

S. N	Competency NO	TOPIC	CONTENT	**Hrs**
1		Introduction to various sections of Pathology Department. Microscopes		**2**
2		HB Estimation		**2**
3		PCV & ESR		**2**

4	**PA13.5**	Peripheral smear – Normocytic Normochromic blood picture	Perform, Identify and describe the peripheral blood picture in anaemia	**2**
5	**PA14.3**	Peripheral smear - Microcytic Hypochromic Anemia	Identify and describe the peripheral smear in microcytic anaemia	**2**
6	**PA15.3**	Peripheral smear – Macrocytic Anaemia	Identify and describe the peripheral blood picture of macrocytic anaemia	**2**
6.a	**PA16.6**	Peripheral smear – Hemolytic Anaemia	Prepare a peripheral blood smear and identify haemolytic anaemia from it.	**2**
7		Peripheral smear – Eosinophilia		**2**
8		Peripheral smear – Plasmodium falciparum Infestation		**2**
9	**PA 18.1**	WBC Disorders - Leucocytosis, Leucopenia, Leukemoid reaction	DOAP / Practical Session	**2**
10	**PA 18.2**	WBC Disorders - Acute Leukemias, chronic leukemias	DOAP / Practical Session	**2**
11	**PA 20.1**	Describe the Features of plasma cell myeloma	Multiple Myeloma	**2**
12	**PA22.1**	Blood Grouping & Cross matching	Classify and describe blood group systems (ABO and RH) Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing	**2**

			Enumerate blood components and describe their clinical uses	**2**
13	**PA23.1**	Urine Analysis, I & II	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	**4**
14		Introduction to Histopathology		**2**
15	**PA2.8**	Coagulative Necrosis	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	**2**
	PA6.7	Renal Infarct	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	**2**
	PA19.3	TB Lymphnode	Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen	**2**
16	**PA2.8**	Reversible & irreversible injury – Fatty liver, Thrombosis	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	**2**

17		Hemodynamics- CVC – Lung, Liver & Spleen.		**2**
18	**PA4.4**	Acute Inflammation – Acute appendicitis, Lobar Pneumonia , Granulation Tissue	Identify and describe acute and chronic inflammation in gross and microscopic specimens.	**2**
19	**PA4.4**	Chronic Inflammation – Lepromatous Leprosy, Rhinosporidiosis, Actinomycosis , Molluscum contagiosum	Identify and describe acute and chronic inflammation in gross and microscopic specimens.	**2**
20	**PA31.3**	Gross and microscopy of carcinoma breast.	Describe and identify the morphologic and microscopic features of carcinoma of the breast.	**2**
21	**PA34.4**	Malignant Tumours of Skin	Identify, distinguish and describe common tumors of the skin – Squamous cell carcinoma, Basal cell carcinoma, Malignant melanoma.	**2**
22	**PA19.5**	Hodgkin's Lymphoma	Identify and describe the features of Hodgkin's lymphoma in gross and microscopic specimens.	**2**
23	**PA 8.1** **PA 8.2** **PA 8.3**	Cytology, Exfoliative Cytology	Observe a diagnostic cytology and it's staining and interpret the specimen.	**2**
24	**PA25.6**	Examination of body fluids – Ascitic fluid, Semen Analysis, TFT,RFT,LFT	Interpret liver function and viral hepatitis serology panel.	**2**

25	**PA31.3**	FNAC – Fibroadenoma & IDC	Describe and identify the morphologic and microscopic features	**2**
26	**PA25.6**	Distinguish obstructive from non-obstructive jaundice based on clinical features and LFT'S.	Interpret liver function and viral hepatitis serology panel.	**2**
27		Instruments		**2**
28	**PA 27.8**	Interpret abnormalities in cardiac function testing in acute coronary syndrome.	DOAP / Practical Session	**2**
	PA 35.3	Meningitis	Identify the etiology of meningitis based on given CSF parameters	**2**
29		Charts	DOAP / Practical Session	**2**
30		Charts	DOAP / Practical Session	**2**

Total DOAP hours = 72 hours.

Note: Content under NONCORE category cannot be assessed in Summative assessments. However, the same can be assessed in Formative assessments.

II MBBS –CBME Self Directed Learning Topics

S. N	COMPE-TENCY NO	COMPETENCY	Hrs
1	**PA12.1**	Disorders caused by air pollution, tobacco and alcohol	**1**
2	**PA12.2**	Disorders caused by protein calorie malnutrition and starvation	**1**
3	**PA12.3**	Obesity and its consequences	**1**
4	**PA 7.5**	Immunology of cancer	**1**
5	**PA 10.4**	Pathogenesis of common bacterial, viral, protozoal and helminthic diseases.	**1**

6	**PA15.4**	Differences between megaloblastic anemia and non megaloblastic anemia	**1**
7	**PA27.10**	Aneurysms, Acute & Chronic heart failure	**1**
8	**PA27.7**	Complications of pericarditis and pericardial effusion	**1**
9	**PA27.9**	Cardiomyopathies	**1**
10	**PA28.1,2**	Clinical syndromes in kidney diseases	**1**
11	**PA30.7**	Etiology & Morphology of Endometriosis	**1**
12	**PA 31.1**	Classify & describe benign breast diseases	**1**

Total SDL hours = 12 hours

TOTAL HOURS:

LGT	80hrs
SGT	56hrs
SDL	12hrs
DOAP	72hrs
AETCOM MODULE	10hrs
TOTAL HOURS	**230hrs**

SUGGESTED DISTRIBUTION OF TEACHING HOURS					
Sl. No	Topic	Large Group	SGT/tutorials/ Integrated learning	DOAP Session/Practical	Self-Directed Learning (SDL)
1	**General pathology** Introduction to Pathology	1		2	
2	Cell Injury & Apoptosis	3	6		
3	Inflammation	4			
4	Healing & Repair	1	1		
5	Hemodynamics	4	4		
6	Neoplasia	5	3		1
7	Immunopathology	4	3		
8	Amyloidosis	1			
9	Genetics Disorders	3			
10	Infections and infestation		1		1
11	Environment and nutrition		1		3
12	Introduction to Hematology			26	
13	RBC Disorders		1		1
14	WBC Disorders	5	1		
15	Haemorrhagic disorders	4			
16	Lymphnode & Spleen	2	5		
17	Blood banking				
18	Clinical Pathology	1		18	
19	Charts			4	
Systemic Pathology				**22**	

20	GIT	5	2		
21	Hepatobiliary	5	4		
22	Respiratory system	5	2		
23	Cardiovascular	5	5		4
24	Urinary tract	4	4		2
25	MGS	3			
26	FGS	4	2		
27	Breast	1			
28	Endocrines	5	6		
29	Bones & Soft tissue	2	2		
30	Skin	1			
31	CNS	2	3		
TOTAL		**80 hrs**	**56 hrs**	**72 hrs**	**12 hrs**

DOAP/ PRACTICAL: 72 HOURS

SGT (tutorials, seminars/case based teaching) /Integrated - 56 hours
AETCOM- 10 hours, SDL – 12 hours.
NOTE: *The above table containing teaching hours assigned to different topics under large and small group teaching may be used as a guide by the Institute.*

ASSESSMENT METHODS (FORMATIVE AND SUMMATIVE)

- ***Written (MCQ's/Structured Long Essay Questions/Short essay questions/Short Answer questions/Clinical vignette Based Questions).***
- ***Viva-Voce***

4. CERTIFICATION OF SKILLS:
To be evaluated using format provided.
Note: *In theory, Practical and certification of skill sections, topics with corresponding competency numbers as mentioned in volume 1 of competency based undergraduate curriculum for Indian Medical Graduate (2018) prescribed by Medical Council of India, have been mentioned.*

Competency no	Competency Description	No. required to certify P
PA16.6	Prepare a peripheral blood smear and identify hemolytic anemia	3
PA25.6	Interprets liver function and viral hepatitis serology panel, Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function test.	3
PA35.3	Identifies the etiology of meningitis based on given CSF parameters.	3
Total	**Total number of competencies to be certified - 3**	**9**

5. SCHEME OF EXAMINATION:

A. FORMATIVE ASSESSMENT:

THEORY INTERNAL ASSESSMENT:

- A minimum of **THREE** Internal Assessments (IAs) to be conducted
- Formative assessment marks shall be calculated based on scoring in written tests/ small group teaching participation/ seminars/ assignments and log book assessment of SDL topics and AETCOM modules.
  3rd Internal assessment must be conducted similar to the university examination pattern.

PRACTICAL INTERNAL ASSESSMENT

- A minimum of **THREE** Practical Internal Assessments (IAs) to be conducted
- Viva/oral examination should assess approach to clinical context in the concepts of basic sciences and included in practical IA marks.
  3rd Internal assessment must be conducted similar to the university examination pattern.

The distribution of internal assessment marks shall be as mentioned below:

Theory IA	Maximum Marks	Practical IA	Maximum Marks
Theory written paper	60	Practical exam	60
Formative assessment from SDL/ Class tests/MCQs/ Tutorials/Seminars/Assignments	15	Practical Viva Voce	20
Formative assessment from log book assessment	20	Formative assessment from day to day assessment (SGT)	15
AETCOM modules (one question in theory paper)	5		
		Record book evaluation	5
TOTAL	**100**		**100**

FINAL INTERNAL ASSESSMENT MARKS

Final IA marks will be calculated as follows:

Final IA marks out of 100 = Average of all three IAs

Level of participation in small group teaching, SDL and AETCOM modules shall be assessed using the format given in the Logbook.

A clear record of all components that add to the internal assessment marks needs to be maintained by the institution/departments and retained by them for at least 5 years after completion of the examination.

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.

The format for providing feedback is given in the logbook.

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.

B **SUMMATIVE ASSESSMENT:**

Eligibility criteria:

- Learners must secure at least 50% marks of total marks (combined in theory and practical; not less than 40% marks in theory and practical separately) assigned for internal assessment in pathology in order to be eligible for appearing at the final University examination.
- Student should get a minimum of 75% attendance in Theory and 80 % in Practical classes to be eligible to appear for university examination.
- Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

Pass criteria:

- University Theory Exam – Student should secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass.
- University Practical Exam – Student shall secure 50% marks (including Viva-voce)
- Internal assessment is considered under separate heading of passing. Students should secure at least 50% of the total marks (combined in theory and practical) assigned for internal assessment in order to be declared successful at the final university of that subject.
- A candidate, who has not secured requisite aggregate in the internal assessment, may be provisionally permitted to appear for university examination. However, he/she has to successfully complete the remediation measures prescribed by the institution / University as the case may be prior to the declaration of his/her results in that particular phase. Failure to meet prescribed 50% marks in internal assessment after availing remedial measures will lead to annulment of the results of the candidate in that particular subject in the university examination.

- **MARKS DISTRIBUTION FOR UNIVERSITY SUMMATIVE EXAMINATION**

THEORY			**THEORY TOTAL**	**PRACTICAL**		**PRACTICAL TOTAL**
	Written paper	MCQs		Summative exam	Viva	
PAPER I	80	20	**200**	60	40	**100**
PAPER II	80	20				

- **THEORY SUMMATIVE EXAMINATION:**

Written paper: Paper-1: 100 marks + Paper 2: 100 marks = 200 marks
Time: 3 hours for each paper
The pattern of questions in each paper shall be as mentioned below:

Type of Question	Number of Questions	Maximum Marks for each question	Total
Structured Long essay questions (SLEQ)	2	10	20
Short essay questions (SEQ) (includes case vignette based questions)	8	05	40
Short answer questions (SAQ)	10	02	20
Multiple Choice Questions (MCQs)	20	01	20
Total marks			**100**

The question papers shall be based on the blue print of question paper setting.

- Total marks under each type of question from each topic needs to be entered by QP Setter.
- It should be in accordance with Shri Dharmasthala Manjunatheshwara University guidelines.

Blueprint for the theory examinations (To be filled by the question paper setter)

PAPER 1 TOPICS	Total max marks as per SDMU guidelines	MCQ 1 mark each	SLEQ 10 Marks each	SEQ 5 marks each	SEQ case vignette based 5 marks	SAQ 2 Marks each	**Total Marks***
Cell Injury & Apoptosis, inflammation healing & repair	20						
Hemodynamics	20						
Neoplasia	20						
Hematology	20						
Clinical Pathology	20						
TOTAL	**100**						

PAPER 2 TOPICS	Total max marks as per SDMU guidelines	MCQ 1 mark each	SLEQ 10 Marks each	SEQ 5 marks each	SEQ case vignette based 5 marks	SAQ 2 Marks each	**Total Marks***
GIT, Hepatobiliary	30						
Resp. system. Cardiovascular system	30						
Urinary tract , FGS, MGS, Breast, CNS, Endocrine	40						
TOTAL	**100**						

Total marks include MCQs.

Chapter-wise distribution and contribution of marks in Pathology paper 1 and 2 for University Examination

PAPER - 1		**PAPER - 2**	
Topics	**Marks**	**Topics**	**Marks**
Inflammation, healing, repair	28-34	GIT & HBS	30-36
Hemodynamics	10-14	CVS	20-25

Hematology	18-22	RS	18-22
Genetics & tumours in childhood	20-24	Renal system	8-12
Neoplasia & immunpathology		FGS, MGS & Breast	8-10
Cell injury & Adaptation	6-8	Endocrines & Skin	8-10
Clinical pathology	6-8	Bones & Joints	8-10
		CNS	8-10

Chapter wise distribution of type of Questions and Marks will be as below.

Paper – 1

General Pathology, Cell injury adaptation, inflammation, Hemodynamics, Neoplasia, Amyloidosis, Hematology	Long Essay 2X10=20 Marks	20
General Pathology Cell injury adaptation, inflammation, Hemodynamics, Neoplasia, Amyloidosis, Hematology, Lymphnode & spleen, Blood banking, Clinical Pathology, WBC disorders.	Short Essays 8X5=40 Marks	40
General Pathology Cell injury adaptation, inflammation, Hemodynamics, Neoplasia, Amyloidosis, Hematology, Lymphnode & spleen, Blood banking, Clinical Pathology, WBC disorders	Short Answer 10X2=20 Marks	20

Paper – 2

Systemic pathology, GIT, Hepatobiliary system, Respiratory system, Cardiovascular system, Renal system.	Long Essays 2X10=20 Marks	20
Systemic pathology, GIT, Hepatobiliary system, Respiratory system, Cardiovascular system, Renal system, MGS, FGS, Breast, Endocrines, Bones & joints, Skin, CNS.	Short Essays 8X5=40 Marks	40
Systemic pathology, GIT, Hepatobiliary system, Respiratory system, Cardiovascular system, Renal system, MGS, FGS, Breast, Endocrines, Bones & joints, Skin, CNS.	Short Answer 10X2=20 Marks	20

Note- The topics 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 topics is inevitable. Students should be prepared to answer overlapping topics.

PRACTICAL SUMMATIVE EXAMINATION: TOTAL 120 MARKS

PRACTICAL EXERCISES: 80 MARKS

Exercise 1 : SPOTTERS - 20 MARKS
Exercise 2 : Hemoglobin estimation/Blood group - 10 MARKS
Exercise 3 : Peripheral Smear Report - 15 MARKS
Exercise 4 : Histopathology slide report - 10 Marks
Exercise 4: CHARTS - 10 MARKS
Exercise 5: Urine Examination – 15 Marks

VIVA VOCE: 40 MARKS
The Viva-Voce examination will be conducted by four examiners individually.
The distribution of topics and marks for each examiner will be as under

Examiner 1: General pathology, includes specimens.
Examiner 2: Hematology & Clinical Pathology.
Examiner 3: Systemic pathology 1 includes GIT, Hepatobiliary, RS, CVS & Renal system.
Examiner 4: Systemic pathology includes Lymphnode, MGS, FGS, Breast, endocrines Bones & Soft tissue, Skin, CNS

6.SELF DIRECTED LEARNING (SDL)
Suggested topics should be entered in the log book preferably as per the format mentioned in the logbook.

7. INTEGRATION:
- May be conducted in the form of sharing/nesting/correlation using CBL/PBL/ Case study approach and involving various departments concerned while preparing the specific learning objectives of the integration topics.
- Department involved may be chosen according to the topic and may be conducted as Horizontal/ Vertical form of integration as per the CBME document.

Competency list for integration of theory topics			
Topic: Inflammation			
Number	**COMPETENCY** **The student should be able to**	**Vertical integration**	**Horizontal Integration**
PA4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	General Surgery	
PA4.2	Enumerate and describe the mediators of acute inflammation	General Surgery	

Topic: Healing and repair			
PA5.1	Define and describe the process of repair and regeneration including wound healing and its types	General Surgery	
Topic: Hemodynamic disorders			
PA6.1	Define and describe edema, its types, pathogenesis and clinical correlations	General Medicine	
PA6.3	Define and describe shock, its pathogenesis and its stages	General Surgery	
Topic: Neoplastic disorders			
PA7.5	Describe immunology and the immune response to cancer		Microbiology
Topic: Basic diagnostic cytology			
PA8.1	Describe the diagnostic role of cytology and its application in clinical care	General Surgery	
PA8.2	Describe the basis of exfoliative cytology including the technique & stains used	General Surgery	
Topic: Immunopathology and AIDS			
PA9.1	Describe the principles and mechanisms involved in immunity	Pediatrics	Microbiology
PA9.2	Describe the mechanism of hypersensitivity reactions		Microbiology
PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection		Microbiology
PA9.4	Define autoimmunity. Enumerate autoimmune disorders	General Medicine	
PA9.5	Define and describe the pathogenesis of systemic Lupus Erythematosus	General Medicine	
PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	General Medicine	Microbiology
PA9.7	Define and describe the pathogenesis of other common autoimmune diseases	General Medicine	
Topic: Infections and Infestations			
PA10.1	Define and describe the pathogenesis and pathology of malaria	General Medicine	Microbiology
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	General Medicine	Microbiology
PA10.3	Define and describe the pathogenesis and pathology of leprosy	General Medicine	Microbiology

PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	General Medicine	Microbiology
Topic: Genetic and paediatric diseases			
PA11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood	Pediatrics	
PA11.2	Describe the pathogenesis and pathology of tumor and tumour-like conditions in infancy and childhood	Pediatrics	
PA11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	Pediatrics	
Topic: Environmental and nutritional diseases			
PA12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol		Community Medicine
PA12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	Biochemistry Pediatrics	
PA12.3	Describe the pathogenesis of obesity and its consequences	General Medicine	
Topic: Introduction to haematology			
PA13.1	Describe hematopoiesis and extramedullary hematopoiesis	General Medicine	
PA13.2	Describe the role of anticoagulants in hematology	General Medicine	
PA13.3	Define and classify anemia	General Medicine	
PA13.4	Enumerate and describe the investigation of anemia	General Medicine	
Topic: Microcytic anemia			
PA14.1	Describe iron metabolism	Biochemistry	
PA14.2	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	General Medicine	
Topic: Macrocytic anemia			
PA15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency	Biochemistry General Medicine	
PA15.2	Describe laboratory investigations of macrocytic anemia	General Medicine	

PA15.4	Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	General Medicine	
Topic: Hemolytic anemia			
PA16.1	Define and classify hemolytic anemia	Biochemistry General Medicine	
PA16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	Biochemistry General Medicine	
PA16.3	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	Biochemistry, General Medicine	
PA16.4	Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	Biochemistry General Medicine	
PA16.5	Describe the peripheral blood picture in different hemolytic anaemias	General Medicine	
Topic: Aplastic anemia			
PA 17.1	Enumerate the etiology, pathogenesis and findings in aplastic Anemia	General Medicine	
PA17.2	Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	General Medicine	
Topic: Lymph node and spleen			
PA19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy	General Surgery	
PA19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis	General Surgery	
PA19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	General Surgery	
PA19.6	Enumerate and differentiate the causes of splenomegaly	General Surgery, General Medicine	

Topic: Hemorrhagic disorders			
PA21.2	Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia	Pediatrics	
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features	General Medicine	
PA21.4	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation	General Medicine	
PA21.5	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K deficiency	General Medicine	
Topic: Blood banking and transfusion			
PA22.2	Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing	Obstetrics & Gynaecology	
PA22.4	Enumerate blood components and describe their clinical uses	General Surgery, General Medicine	
PA22.5	Enumerate and describe infections transmitted by blood transfusion		Microbiology
PA22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	General Medicine	
Topic:	**Gastrointestinal tract**		
PA24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	Dentistry	
PA24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	General Medicine	
PA24.3	Describe and identify the microscopic features of peptic ulcer	General Medicine	
PA24.4	Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach	General Surgery	

PA24.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine	General Surgery	
PA24.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	General Surgery	
PA24.7	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	General Surgery	
Topic: Hepatobiliary system			
PA25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	Biochemistry, General Medicine	
PA25.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clincial manifestations, complications and consequences	General Medicine, General Surgery	
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	General Medicine	
PA25.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	General Medicine, General Surgery	
PA25.5	Describe the etiology, pathogenesis and complications of portal hypertension	General Medicine General Surgery	
Topic: Respiratory system			
PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	General Medicine	Microbiology
PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	General Medicine	Microbiology
PA26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	Physiology, General Medicine	Microbiology

PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	General Medicine	Microbiology
PA26.5	Define and describe the etiology, types, exposure, Environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	General Medicine, Community Medicine	
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	General Medicine	
PA26.7	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	General Medicine, Community Medicine	
Topic: Cardiovascular system			
PA27.1	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	General Medicine	
PA27.2	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	General Medicine	
PA27.3	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	General Medicine, Physiology	
PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	General Medicine	Microbiology
PA27.5	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic	General Medicine	

	features, diagnostic tests and complications of ischemic heart disease		
PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis	General Medicine	Microbiology
PA27.7	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	General Medicine	
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes	Physiology, General Medicine	
PA27.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	General Medicine, Physiology	
PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	General Medicine	Microbiology
Topic: Urinary Tract			
PA28.1	Describe the normal histology of the kidney		
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	General Medicine	
PA28.4	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	General Medicine	

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	Physiology, General Medicine	
PA28.6	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	General Medicine	
PA28.7	Enumerate and describe the findings in glomerular manifestations of systemic disease	General Medicine	
PA28.8	Enumerate and classify diseases affecting the tubular interstitium	General Medicine	
PA28.9	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	General Medicine	
PA28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	Human Anatomy, General Surgery	
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	General Medicine, Pediatrics	
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	General Surgery	
PA28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors	Pediatrics	

PA28.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	General Medicine	
PA28.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	General Surgery	
Topic: Male Genital Tract			
PA29.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	General Surgery	
PA29.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	General Surgery	
PA29.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	General Surgery	
PA29.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	General Surgery	
PA29.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	General Surgery	
Topic: Female Genital Tract			
PA30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the cervix	Obstetrics & Gynaecology	
PA30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	Obstetrics & Gynaecology	

PA30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas	Obstetrics & Gynaecology	
PA30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	Obstetrics & Gynaecology	
PA30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	Obstetrics & Gynaecology	
PA30.6	Describe the etiology and morphologic features of cervicitis	Obstetrics & Gynaecology	
PA30.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	Obstetrics & Gynaecology	
PA30.8	Describe the etiology and morphologic features of adenomyosis	Obstetrics & Gynaecology	
PA30.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	Obstetrics & Gynaecology	
Topic: Breast			
PA31.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease	Human Anatomy, General Surgery	
PA31.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	General Surgery	
PA31.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia	Pediatrics, General Medicine	
Topic: Endocrine system			
PA32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	Human Anatomy, Physiology, General Medicine General Surgery	

PA32.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis	Physiology, General Medicine	
PA32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	Physiology, General Medicine	
PA32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	Physiology, General Medicine	
PA32.5	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism	Physiology, General Medicine	
PA32.6	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	General Surgery	
PA32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	Physiology, General Medicine	
PA32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	Physiology, General Medicine	
PA32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	Human Anatomy, Physiology, General Medicine, General Surgery	
Topic: Bone and soft tissue			
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	Human Anatomy, Orthopaedics	Microbiology

PA33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	Orthopaedics	
PA33.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	Orthopaedics	
PA33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	Orthopaedics	
PA33.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis	General Medicine	
Topic: Skin			
PA34.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin	Dermatology Venereology & Leprosy	
PA34.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin	Dermatology Venereology & Leprosy	
PA34.3	Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma	Dermatology Venereology & Leprosy	
Topic: Central Nervous System			
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	General Medicine	Microbiology
PA35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors	Pediatrics	

PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	Ophthalmology		
DOAP/PRACTICAL Sessions with Horizontal & Vertical Integration				
PA13.5	Perform, Identify and describe the peripheral blood picture in anemia	Skill assessment	General Medicine	
PA14.3	Identify and describe the peripheral smear in microcytic anemia	Skill assessment	General Medicine	
PA19.3	Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen	Skill assessment		
PA19.5	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen	Skill assessment	General Surgery	
PA23.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	Skill Assessment		
PA25.6	Interpret a liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver function tests	Skill assessment	General Medicine	
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes	Skill Assessment	Physiology, General Medicine	
PA31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast	Skill Assessment	General Surgery	
PA34.4	Identify, distinguish and describe common tumors of the skin	Skill Assessment	Dermatology, Venereology & Leprosy	
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	Written/ Viva voce	General Medicine	Microbiology

8. RECOMMENDED TEXT BOOKS, REFERENCE BOOKS AND ATLAS

Note: A single textbook may not cover the entire curriculum. Referring to more than one book is recommended.

Recent editions of:

1. Pathologic basis of disease by Kumar, Abbas, Fausto, Aster.
2. Text book of Pathology by Harsh Mohan
3. Text book of Pathology by Vinay Kamal Vol 1 & Vol 2
4. Text book of Haematology by Dr. Tejinder Singh.
5. Practical Pathology by Dr. K Uma Chaturvedi, Dr. Tejinder Singh.
6. Dacie and lewis practical Hematology by Dacie,
7. Pathology: quick review and MCQs based On textbook of pathology
8. Hematology for students, Practitioners including practical Hematology by Ramnik sood
9. Rubin's pathology: Clinicopathologic foundations of medicine by Rubin, Emanuel,
10. Essential Hematology by Hoffbrand,A V: Pettit, J.E

MICROBIOLOGY

1. GOALS

i. The aim of Medical Microbiology course is to introduce basic principles and their relevance in clinical disease for students studying medicine and aspiring to be physicians.
ii. The course is rigorous and includes a large number of etiological agents responsible for infectious diseases globally.
iii. It covers biology of bacteria, viruses and other pathogens related with infectious diseases in humans.
iv. The students should be able to identify common infectious agents and the diseases they cause.
v. The student should be able to evaluate methods used to identify infectious agents in the clinical microbiology laboratory meaning the approach to laboratory diagnosis of infectious diseases.
vi. The student should understand and should be able to recall basics of microbial physiology including metabolism, regulation and replication.
vii. The student should be able to explain general and specific mechanisms the pathogens use to produce disease.
viii. The student should be able to diagnose common infectious diseases from the clinical presentation and knowledge of association of microbes to common clinical conditions.
ix. The student should be able to describe the epidemiology of infectious agents especially the modes of transmission of pathogens.
x. The course will provide opportunities for students to know the approach to laboratory diagnosis of infections.
xi. The students will be trained in a few basic skills in clinical microbiology and their applications and interpretation to diagnose common infectious diseases.
xii. The student should be able to assess treatment strategies including the appropriate use of antimicrobial agents and common mechanisms of antimicrobial action and resistance.
xiii. The student should be able to explain interventions used to prevent transmission of pathogens or the principles of infection control practices including vaccination.

2. OBJECTIVES

2.1 KNOWLEDGE: The students should

i. Know types and structure of various microorganisms.
ii. Be able to differentiate between different types of pathogens like bacteria, viruses, fungi and parasites.
iii. Know commonly encountered and other important pathogens.
iv. Know the basics of microbial genetics.
v. Know the concept of microbial flora and its role in health and disease.

vi. Know the epidemiology of infectious diseases viz. the modes of transmission, population groups concerned, mechanisms related to transmission, attributes of transmission and social implications of infections like outbreaks, epidemics and pandemics.
vii. Know immunological response of the body in the infectious process, immunological memory, immunization, and unwarranted immunological responses contributing to disease.
viii. Know the principles and application of infection control measures, methods of sterilization, disinfection and antisepsis and their applications in patient care.
ix. Know to choose appropriate laboratory tests relevant to the clinical suspicion and interpret the test results.
x. Know the principles of antimicrobial therapy, relation of type of microorganism and antibiotic, bacterial drug resistance etc.
xi. Know methods and rational approach to control and prevent infectious diseases.
xii. Know the pathogenesis of diseases, interventions for effective treatment.
xiii. Know population health, epidemiologic principles and the scientific methods for research relevant public healthcare.

2.2 Skill

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

i. Correlate the clinical manifestations with the etiological agent and plan and interpret laboratory investigations for the diagnosis of infectious diseases.
ii. Identify the common pathogenic agents with the help of laboratory procedures and use antimicrobial sensitivity test to select suitable antimicrobial agents.
iii. Perform commonly employed bed-side tests for detection of infections agents such as blood film for malaria, filaria, gram staining, Acid Fast Bacilli (AFB) staining and stool examination for detection of ova, cysts etc.
iv. To articulate a cogent, accurate assessment of the problem and plan or list diagnostic clinical reasoning skills in all the major disciplines
v. The ability to practice effective preventive medicine by identifying, addressing and advocating the strategies to maintain health and well-being, to identify and treat disease early where appropriate and to advice on lifestyle modification practices.

2.3 Attitude and Communication skills

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

i. Explain general and specific mechanisms of pathogenesis of diseases.
ii. Describe the epidemiology of infectious agents especially the modes of transmission of pathogens
iii. Chose appropriate laboratory investigations and its interpretation
iv. Explain appropriate infection control practices to prevent transmission of infection.

2.4 Integration

i. The student shall understand infection diseases of national importance in relation to the clinical, therapeutic and preventive aspects.

3. TEACHING HOURS AND COURSE CONTENT

Sl No	Teaching learning method	No. of Hours
1	Large group teaching/Lecture	70
2	Small group teaching (SGT) (Small group discussions-SGD/Tutorials/Seminars/ Case/based learning sessions/Integrated teaching sessions/Practical/AETCOM)	110
3	Self-directed learning (SDL)	10
4	Pandemic Module	10
TOTAL HOURS		**200**

COURSE CONTENT

i) Theory

Topic	Hrs	Competency No.	T/L Method
GENERAL MICROBIOLOGY			
Introduction and History	1	MI 1.1	Lecture
Bacterial Taxonomy and Overview of bacterial infections	1	MI 1.1	Lecture
Morphology of Bacteria	1	MI 1.1	Lecture
Physiology of Bacteria	1	MI 1.1	SDL
Bacterial Genetics-1	1	MI 1.1	Lecture
Bacterial Genetics-2	1	MI 1.1	Lecture
Antimicrobials: Antimicrobial Agents, Antimicrobial Resistance	1	MI 1.6	Lecture
Sterilization and Disinfection-1	1	MI 1.4	Lecture
Sterilization and Disinfection-2	1	MI 1.4	Lecture
General parasitology and overview of parasitic infections-1	1	MI 1.1	Lecture
General parasitology and overview of parasitic infections-2	1	MI 1.1	Lecture
General virology and overview of viral infections-1	1	MI 1.1	Lecture
General virology and overview of viral infections-2	1	MI 1.1	Lecture
General mycology and overview of fungal	1	MI 1.1	Lecture

infections-1			
General mycology and overview of fungal infections-2	1	MI 1.1	Lecture
Epidemiology of infectious diseases	1	MI 1.3	Lecture
Immunity (Innate and Acquired)- Immunological mechanisms in health	1	MI 1.7	Lecture
Components of Immune System- Organs, cells and products	1	MI 1.8	Lecture
Components of Immune System- Organs, cells and products	1	MI 1.8	Lecture
IMMUNOLOGY			
Antigen	1	MI 1.8	SDL
Antibody	1	MI 1.8	Lecture
Antigen-Antibody Reaction-1	1	MI 1.8	Lecture
Antigen-Antibody Reaction-2	1	MI 1.8	Lecture
Complement	1	MI 1.8	Lecture
Immune Responses: Cell-mediated and Antibody-mediated-1	1	MI 1.8	Lecture
Immune Responses: Cell-mediated and Antibody-mediated-1	1	MI 1.8	Lecture
Hypersensitivity-1	1	MI 1.10	Lecture
Hypersensitivity-2	1	MI 1.10	Lecture
Autoimmunity	1	MI 1.10	Lecture
Immunodeficiency Disorders	1	MI 1.10	Lecture
Transplant and Cancer Immunology	1	MI 1.11	Lecture
Immunoprophylaxis	1	MI 1.9	Lecture
HOSPITAL INFECTION CONTROL (PART-I)			
Hospital acquired infection (definition, risk factors)	1	MI 8.5,8.6, 8.7	Lecture
Biomedical waste	1	MI 8.5,8.6	SDL
BLOODSTREAM AND CARDIOVASCULAR SYSTEM INFECTIONS			
Cardiovascular system infections (infective endocarditis and acute rheumatic fever and others)-1	1	MI 2.1, 2.2	Lecture
Cardiovascular system infections (infective endocarditis and acute rheumatic fever and others)-2	1	MI 2.1, 2.2	Lecture
Blood stream infections and Infections causing anemia	1	MI 2.1, 2.2, 2.4	Lecture
Enteric fever (*Salmonella typhi and S. paratyphi*)	1	MI 3.3	Lecture
Rickettsial infections	1	MI 1.1	Lecture

Miscellaneous bacterial bloodstream infections: Brucellosis, leptospirosis and borreliosis	1	MI 8.1	SDL
HIV/AIDS-1	1	MI 2.7	Lecture
HIV/AIDS-2	1	MI 2.7	Lecture
Viral hemorrhagic fever (VHF) Arboviral VHF (Dengue, Chikungunya, KFD and others) Filoviral VHF (Ebola and Marburg virus), Hantaviral VHF-1	1	MI 1.1	Lecture
Malaria and Babesiosis-1	1	MI 2.5, MI 8.16	Lecture
Malaria and Babesiosis-2	1	MI 2.5, MI 8.16	Lecture
Visceral leishmaniasis and trypanosomiasis (brief)	1	MI 2.5, 8.16	Lecture
Lymphatic filariasis	1	MI 2.5, 8.16	Lecture
Systemic candidiasis and systemic mycoses	1	MI 1.1	Lecture
GASTROINTESTINAL INFECTIONS			
Gastrointestinal infective syndromes	1	MI 3.1	Lecture
Gastrointestinal infections due to enterobacteriaceae: Diarrheagenic E. coli, shigellosis, nontyphoidal salmonellosis and yersiniosis	1	MI 3.1	SDL
Cholera, halophilic Vibrio and Aeromonas infections	1	MI 3.1	Lecture
Viral gastroenteritis (Rotaviruses and others)	1	MI 3.1	SDL
Intestinal Protozoan Infections-1: Intestinal amoebiasis and balantidiasis	1	MI 3.1	Lecture
Intestinal Helminthic Infections-2 Intestinal nematode infections: Trichuris, Enterobius, hookworm, Strongyloides, Ascaris and others	1	MI 3.1	Lecture
Intestinal Helminthic Infections-2 Intestinal nematode infections: Trichuris, Enterobius, hookworm, Strongyloides, Ascaris and others	1	MI 3.1	Lecture
HEPATOBILIARY SYSTEM INFECTIONS			
Infective Syndromes of hepatobiliary system and abdomen Viruses Causing Hepatitis: Hepatitis viruses, yellow fever and others-1	1	MI 3.7	Lecture
Infective Syndromes of hepatobiliary system and abdomen Viruses Causing Hepatitis: Hepatitis viruses, yellow fever and others-2	1	MI 3.7	Lecture

CENTRAL NERVOUS SYSTEM INFECTIONS			
Infective syndromes of central nervous system	1	MI 5.1, 5.2	Lecture
Bacterial meningitis-1 • Acute bacterial (pyogenic) meningitis: Neisseria meningitidis, Streptococcus pneumoniae, Streptococcus agalactiae, Haemophilus influenzae and Listeria • Chronic bacterial meningitis: Tubercular meningitis, spirochaetal meningitis, lyme disease and others	1	MI 5.1	Lecture
Tetanus	1	MI 4.1	Lecture
Viral Encephalitis and Encephalopathy-1 Rabies, HSV encephalitis	1	MI 5.2	Lecture
Viral Encephalitis and Encephalopathy-2 Arboviral encephalitis (Japanese encephalitis and West Nile), Nipah and Hendra, slow virus and prion disease, and others	1	MI 5.2	Lecture
RESPIRATORY TRACT INFECTIONS			
Infective syndromes of respiratory tract	1	MI 6.1	Lecture
Bacterial Lobar pneumoniae: Pneunococcal pneuoniae, H. influenzae and others	1	MI 6.1	Lecture
Tuberculosis including non-tuberculous mycobacteria	1	MI 6.1, 8.16	Lecture
Tuberculosis including non-tuberculous mycobacteria	1	MI 6.1	Lecture
Pertusis	1	MI 6.1	SDL
UROGENITAL TRACT INFECTIONS			
Infective Syndromes of Urinary Tract and Agents • Bacterial infections: Enterobacteriaceae, Enterococcus and others • Viral (BK virus), parasitic (Schistosoma haematobium) and fungal infections	1	MI 7.3	Lecture
Infective Syndromes of Urinary Tract and Agents • Bacterial infections: Enterobacteriaceae, Enterococcus and others • Viral (BK virus), parasitic (Schistosoma haematobium) and fungal infections	1	MI 7.3	Lecture
Infective Syndromes of Genital Tract -1 Classification of sexually-transmitted infections Ulcerative Genital Disease: Syphilis, lymphogranuloma venerum, granuloma inguinale,	1	MI 7.1, 7.2	Lecture

soft chancre and genital herpes			
Infective Syndromes of Genital Tract -3 Vulvovaginitis (Trichomoniasis, bacterial vaginosis, vaginal candidiasis)	1	MI 7.2	SDL
SKIN, SOFT TISSUE INFECTIONS AND MUSCULOSKELETAL SYSTEM INFECTIONS			
Infective syndromes of skin, soft tissue and musculoskeletal systems	1	MI 4.1, MI 4.2, MI 4.3	Lecture
Staphylococcal infections	1	MI 4.2, 4.3	Lecture
Beta-hemolytic streptococcal infections	1	MI 4.3	SDL
Gas gangrene (*Clostridium perfringens*) Infections due to non-spring anaerobes	1	MI 4.1	Lecture
Leprosy	1	MI 4.3, 8.16	SDL
Viral Exanthems and Other Cutaneous Viral Infections Herpesviruses (herpes simplex, varicella-zoster and HHV- 6 and 7 infection), poxviruses (smallpox, molluscum contagiosum), parvovirus, measles, rubella, coxsackieviruses and others	1	MI 4.3	Lecture
Viral Exanthems and Other Cutaneous Viral Infections Herpesviruses (herpes simplex, varicella-zoster and HHV- 6 and 7 infection), poxviruses (smallpox, molluscum contagiosum), parvovirus, measles, rubella, coxsackieviruses and others	1	MI 4.3	Lecture
MISCELLANEOUS INFECTIVE SYNDROMES AND OTHERS			
Organisms with Oncogenic Potential Human papilloma virus, Kaposi sarcoma, HTLV and HIV, epstein-barr virus, hepatitis B and C, and others	1	MI 8.3	Lecture
Opportunistic infections (immunocompromised patients) Transplant infections	1	MI 8.2	Lecture
Emerging and re-emerging infections microbial agents of bioterrorism	1	MI 8.4	Lecture
National Health Programmes for Communicable Diseases	1	MI 8.16	Lecture
HOSPITAL INFECTION CONTROL (PART-II)			
Major healthcare-associated infection types— CAUTI, CRBSI, VAP, SSI	1	MI 8.5, MI 8.6	Lecture
Antimicrobial stewardship, monitoring of antimicrobial therapy and rational use of antimicrobial agents	1	MI 1.6	Lecture

**** Total hours: 80 includes large group discussion (Lectures) and Self Directed Learning (SDL)***

Assessment methods for Theory (Formative and Summative):

- Written (MCQs/SAQs/SEQs/LEQ/case vignette based questions)
- Viva Voce

ii) Small Group Teaching (SGD+DOAP/Practical)

All are core competencies

Sl No	Topic	Hrs		Competency No.	T/L Method
1	Role of Microbiologist in diagnosis & Management of disease.+ Microscopy	0.5	1	MI 1.2	SGD/Practical
2	Microscopy	1		MI 1.2	SGD
3	Morphology of common bacteria, Bacterial growth curve, Types of Staining(Simple, Differential and Special)	0.5	1	MI 1.1	SGD/Practical
4	Morphology of common bacteria, Bacterial growth curve, Types of Staining(Simple, Differential and Special)	1.5		MI 1.1	Practical
5	Specimen collection and transport	1	1	MI 8.9, 8.10	SGD/Practical
6	Culture Media and Culture Methods	0.5	1	MI 1.1	SGD/Practical
7	Identification of Bacteria (Conventional methods, Automations)	1		MI 1.1	SGD
8	Antimicrobials: Antimicrobial Susceptibility Testing	0.5	1	MI 1.6	SGD/Practical
9	Pathogenicity of bacterial infections	1		MI 1.1	SGD
10	Gram staining -1	1.5		MI 1.2	Practical
11	Sterilization and Disinfection	1		MI 1.4, 1.5	SGD
12	Sterilization and Disinfection (including CSSSD visit)	1.5		MI 1.5	Practical

13	Laboratory diagnosis of parasitic infections- Stool microscopy-1, Peripheral blood smear	1.5		MI 1.2	Practical
14	Laboratory diagnosis of viral infections- Microscopy, cultivation, serology, molecular tests	2		MI 1.1	Practical
15	Normal human microbiota	1		MI 1.1	SGD
16	Laboratory diagnosis of fungal infections--KOH mount, Gram stain (yeast), India ink, LPCB mount	1.5		MI 1.1, 1.2	Practical
17	Laboratory diagnosis of fungal infections--KOH mount, Gram stain (yeast), India ink, LPCB mount	1.5		MI 1.1, 1.2	Practical
18	Acid fast staining-1	1.5		MI 1.1	Practical
19	Antigen-Antibody Reaction (conventional)- agglutination and precipitation	1.5		MI 1.8, 8.15	Practical
20	Antigen-Antibody Reaction (newer)- ELISA, ELFA,CLIA, IFA, westernblot, rapid methods	1.5		MI 1.8, 8.15	Practical
21	Gram staining -2	2		MI 1.2	Practical
22	Acid fast staining-2	1.5		MI 1.1	Practical
23	Gram staining-3/Acid Fast-3 /Stool-2	1.5		MI 1.2	Practical
24	Hospital acquired infection (Hand hygiene and PPE)-1	0.5	1	MI 8.5,8.6, 8.7	SGD/ Practical
25	Needle stick injury	1		MI 8.5,8.6	SGD
26	Hand hygiene and PPE-2, Biomedical waste	1.5		MI 8.7	Practical
27	Sepsis, CRBSI, Rheumatic fever, Infective endocarditis	2		MI 2.3, 8.15	Practical
28	Enteric (typhoid) fever, scrub typus, Brucellosis,Leptospirosis	1.5		MI 3.4, 8.15	Practical
29	Viral hemorrhagic fever (VHF) Arboviral VHF (Dengue, Chikungunya, KFD and others) Filoviral VHF (Ebola and Marburg virus), Hantaviral VHF-2	1.5		MI 1.1	SGD

30	HIV and Dengue	1.5		MI 2.7, 8.15	Practical
31	Malaria, visceral leishmaniasis, lymphatic filariasis	1.5		MI 2.6, 8.15	Practical
32	Food poisoning: S. aureus, Bacillus cereus, Clostridium botulinum and others	1		MI 3.5	SGD
33	Gram staining -4	1.5		MI 1.2	Practical
34	*Miscellaneous bacterial infections of gastrointestinal system: Helicobacter, Campylobacter and Clostridioides difficile infections*	1		MI 3.6, MI 3.1	SGD
35	Dysentery (Shigellosis), diarrhea (NTS, cholera)	2		MI 3.2	Practical
36	Acid fast staining-4	1.5		MI 1.1	Practical
37	Intestinal Protozoan Infections-2: Giardiasis, coccidian parasitic infections, blastocystosis, and others	1		MI 3.1	SGD
38	Intestinal Helminthic Infections-1 • Intestinal cestode infections: Diphyllobothrium, Taenia, Hymenolepis and others • Intestinal trematode infections: Fasciolopsis buski, Schistosoma mansoni, S. japonicum and others	1		MI 3.1	SGD
39	Intestinal amoebiasis, giardiasis, intestinal coccidian parasites	1.5		MI 3.2, 1.2	Practical
40	GIT/HB-3: Intestinal cestode and nematode infection	1.5		MI 3.2, 1.2	Practical
41	Parasitic Infections of Hepatobiliary System Amoebic liver abscess, hydatid disease (echinococcosis), trematode infections (Fasciola hepatica, Clonorchis and Opisthorchis) and Others	1		MI 1.1	SGD
42	Viral Hepatitis, parasites causing liver infection	1.5		MI 3.8, 8.15	Practical

43	Bacterial meningitis-1 • Acute bacterial (pyogenic) meningitis: Neisseria meningitidis, Streptococcus pneumoniae, Streptococcus agalactiae, Haemophilus influenzae and Listeria • Chronic bacterial meningitis: Tubercular meningitis, spirochaetal meningitis, lyme disease and others	1		MI 5.1	SGD
44	Demonstrate respect for patient samples sent for lab investigations	1		MI 8.11	Practical/ AETCOM
45	Confidentiality pertaining to patient's identity in lab result	1		MI 8.12	SGD/AETCOM
46	Choose appropriate labaratory test in diagnosis of infectious disease (Rational use of microbiological investigations)	1		MI 8.13	SGD/ AETCOM
47	Demonstrate confidentiality pertaining to patient's identity in lab result	1		MI 8.14	Practical/ AETCOM
48	Stool microscopy-3	1.5		MI 1.2	Practical
49	Laboratory diagnosis of pyogenic meningitis (N. meningit- idis, Streptococcus pneumoniae, S. agalactiae, Haemophilus influenzae)	1.5		MI 5.3, 8.15	Practical
50	Viral meningitis and viral myelitis: Poliomyelitis, coxsackievirus, and others	1		MI 5.1, 8.16	SGD
51	Gram staining-5	1		MI 1.2	Practical
52	Parasitic and Fungal Infections of Central Nervous System-1 • Parasitic infections: Neurocysticercosis, free-living Amoeba infections	1		MI 5.1, 5.2	SGD
53	Parasitic and Fungal Infections of Central Nervous System-2 • Parasitic infections: Toxoplasmosis and others	1		MI 5.1, 5.2	SGD

	• Fungal infections: Cryptococcal meningitis and others				
54	Laboratory diagnosis of aseptic meningitis (tubercular meningitis, cryptococcal meningitis) and encephalitis	1		MI 5.3, 8.15	Practical
55	Acid fast staining-5	2		MI 1.1	Practical
56	URTI (beta hemolytic streptococci, diphtheria)	0.5	1	MI 6.1	SGD/ Practical
57	Bacterial atypical pneumonia**:** Mycoplasma, Chlamydia and Legionella and others	1		MI 6.1	SGD
58	Throat swab Gram staining-1,2,3 (smears made from S.pyogenes, C.diphtheriae Candidia) and certification	1		MI 6.2	Practical
59	Labaratory diagnosis of tuberculosis and Acid fast staining-6	1.5		MI 6.3, 1.2	Practical
60	Infection due to non-fermeneting GNB (*Pseudomonas, Acinetobacter, Burkholderia and others*	1		MI 6.1, 6.3, 4.3	SGD
61	Myxovirus Infections of respiratory tract: Influenza, parainfluenza, mumps, respiratory syncytial virus and others	1		MI 6.1	SGD
62	Sputum Gram staining-1,2,3 (smears made from S.pneumoniae,Klebsiella , H.influenzae) and certification	1.5		MI 6.3	Practical
63	Coronavirus infections including COVID-19	1		MI 6.1	SGD
64	Parasitic and Fungal Infections of Respiratory Tract: • Parasitic Infections: Paragonimiasis and others • Fungal Infections: Zygomycosis, aspergillosis, pneumocystosis and others	1		MI 6.1, 6.2	SGD
65	Sputum Acid fast staining-1,2,3 (smears made from 1+,2+,3+	1.5		MI 6.3	Practical

	sputum specimens) and certification				
66	Infective Syndromes of Genital Tract -2 Urethritis: Gonorrhoea and non-gonococcal urethritis (Chlamydia trachomatis and others)	1		MI 7.2	SGD
67	Other genital tract infections of females and males	1		MI 7.2	SGD
68	Laboratory diagnosis of UTI: Uropathogenic E. coli, Klebsiella, Proteus, Enterococcus, Staphylococcus saprophyticus, and others	1		MI 7.3	Practical
69	Laboratory diagnosis of STI (Gonorrhoea, syphilis, trichomoniasis, candidiasis and others)	1.5		MI 7.1, 7.2	Practical
70	Healthcare as a right	1.5			Practical/ AETCOM
71	Staphylococcal, Streptococcal infections and Anaerobic infections	1.5		MI 4.1, 4.3, 8.15, 1.2	Practical
72	Miscellaneous Bacterial Infections of Skin and Soft Tissues: Anthrax (Bacillus anthracis), actinomycosis, nocardiosis, non-venereal treponematoses and others	1		MI 4.3, 8.13	SGD
73	Gram staining-6	1.5		MI 1.2	Practical
74	Miscellaneous Bacterial Infections of Skin and Soft Tissues: Anthrax (Bacillus anthracis), actinomycosis, nocardiosis, non-venereal treponematoses and others	1		MI 4.3, 8.13	SGD
75	Parasitic Infections of Skin, Soft Tissue and Musculoskeletal System Cutaneous leishmaniasis, cysticercosis, tissue nematodes (filarial tissue nematodes, Dracunculus medinensis, Trichinella spiralis) and larva migrans	1		MI 4.2, 4.3	SGD

76	Fungal Infections of Skin, Soft Tissue and Musculoskeletal System Superficial fungal infections, subcutaneous fungal infections, candidiasis (cutaneous and mucosal) and Penicillium marneffei infection	1		MI 4.3	SGD
77	SSTI due to Superficial and Subcutaneous fungal infections, Cutaneous and mucosal Candidiasis	1		MI 4.3, 8.15	Practical
78	Ocular and ear infections-1	1		MI 1.1	SGD
79	Ocular and ear infections-2	1.5		MI 1.1	SGD
80	Congenital Infections Cytomegalovirus infections, congenital varicella, neonatal herpes, congenital rubella, congenital toxoplasmosis, congenital syphilis, Zika virus infections and others	1		MI 1.1	SGD
81	Acid fast staining-6	1.5		MI 1.2	Practical
82	Zoonotic infections: Classification, plague, tularaemia, bite wound infections and others	1		MI 1.1	SGD
83	Laboratory acquired infections vector-borne infections	1		MI 1.1, 8.1	SGD
84	Hand hygiene and PPE-3, Biomedical waste	1.5		MI 8.7	Practical
85	Environmental surveillance (bacteriology of water, air and surface)	1.5		MI 8.8	SGD
86	Choose appropriate labaratory test in diagnosis of infectious disease (Rational use of microbiological investigations)	2.5		MI 8.13	SGD
87	Stool microscopy-6	1.5		MI 1.2	Practical

iii) Pandemic Module

Sl.N0	Topic	Hours	Competency No	T/L Method
1	Airborne Precautions, Contact Precautions	1	2.1	Lecture
2	Airborne Precautions, Contact Precautions	1.5	2.1	Practical
3	Infection control committee	1	2.3	Lecture
4	Sample Collection-1	1	2.3	SGD
5	Sample Collection-2	1	2.3	SGD
6	Serological tests and their performance parameters-2	1.5	2.3	Practical
7	Microbial diagnosis-1	1	2.3	Lecture
8	Microbial diagnosis-2	1	2.3	Lecture
9	Microbial diagnosis-3	1	2.3	Lecture

iv) Suggested distribution of theory teaching hours

Teaching/Learning Method	**NMC suggested (Hours)**	**SDM (Hours)**
LGT	70	74
SDL	10	10
SGT (SGD+DOAP/Practical)	110	110 Hrs 30 min
Pandemic	10	10
AETCOM	2 Hrs	2 Hrs 30 min

- Large group - Didactic lectures/Interactive lectures/Flipped classroom/**Self-directed learning**
- SGT - Small group teaching/Tutorials/Seminars; CBL - Case based learning.
  Note: The above table containing teaching hours assigned to different topics under large and small group teaching may be used as a guide

4. CERTIFICATION OF SKILLS

To be evaluated using format provided as given in the Logbook.

SL. NO.	Competency number	Competency Description	No. required to certify P
1	**MI 1.2**	Perform and identify the different causative agents of infectious diseases by Gram stain	2
2	**MI 1.2**	Perform and identify the different causative agents of infectious diseases by ZN Stain	2
3	**MI 1.2**	Perform and identify the different causative agents of infectious diseases by Stool routine microscopy	1
4	**MI6.2**	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain) Throat swab Gram staining-1,2,3 (smears made from *S. pyogenes, C. diphtheria,* Candida)	3
5	**MI6.3**	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain)Sputum Gram staining-1,2,3 (smears made from *S. pneumoniae, Klebsiella , H. influenzae*)	3
6	**MI6.3**	Identify the common etiologic agents of lower respiratory tract infections (Acid fast stain)Sputum Acid fast staining-1,2,3 (smears made from 1+,2+,3+ sputum specimens)	3
7	**MI8.7**	Demonstrate Infection control practices and use of Personal Protective Equipment (Hand Hygiene)	**3**
8	**MI8.7**	Demonstrate Infection control practices and use of Personal Protective Equipment (PPE)	**3**

Note: In theory, Practical and certification of skill sections, topics with corresponding competency numbers as mentioned in volume 1 of competency based undergraduate curriculum for Indian Medical Graduate (2018) prescribed by Medical Council of India, have been mentioned.

5. SCHEME OF EXAMINATION

Eligibility criteria pass criteria, formative Assessment marks, Summative / University examination (Theory and practical Pattern and marks). Exam pattern, topic distribution in case more than one theory paper , weightage of marks allotted for topics to be assessed in theory exam and blue printing of the question paper for summative examination also to be provided.

A. FORMATIVE ASSESSMENT:

THEORY INTERNAL ASSESSMENT:

- A minimum of THREE Internal Assessments (IA) to be conducted
- Formative assessment marks shall be calculated based on scoring in written tests/ small group teaching participation/ seminars/ assignments and log book assessment, SDL topics and AETCOM modules as shown below.

PRACTICAL INTERNAL ASSESSMENT

- A minimum of THREE Practical Internal Assessments to be conducted
- Viva/oral examination should assess approach to clinical context in the concepts of basic sciences and included in practical IA marks.

3rd Internal assessment must be conducted similar to the university examination pattern.

The distribution of internal assessment marks shall be as mentioned below

<table>
<tr><th>Theory IA</th><th>Maximum Marks</th><th>Practical IA</th><th>Maximum Marks</th></tr>
<tr><td>Theory written paper</td><td>60</td><td>Practical exam</td><td>60</td></tr>
<tr><td>Formative assessment (FA) from SDL/ Class tests/MCQs/ Tutorials/Seminars/Assignments</td><td>15</td><td>Practical Viva Voce</td><td>20</td></tr>
<tr><td>Formative assessment (FA) from log book assessment</td><td>20</td><td rowspan="2">Formative assessment (FA) from day to day assessment (SGT)</td><td rowspan="2">15</td></tr>
<tr><td>AETCOM modules (one question in theory paper)</td><td rowspan="2">5</td></tr>
<tr><td></td><td>Record book evaluation</td><td>5</td></tr>
<tr><td>TOTAL</td><td>100</td><td></td><td>100</td></tr>
</table>

FINAL INTERNAL ASSESSMENT MARKS

Final IA marks will be calculated as follows:

Final IA marks out of 100 = Average of all three IAs

Level of participation in small group teaching, SDL and AETCOM modules shall be assessed using the format given in the Logbook.

A clear record of all components that add to the internal assessment marks needs to be maintained by the institution/departments and retained by them for at least 5 years after completion of the examination.

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.

The format for providing feedback is given in the logbook.

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.

A. SUMMATIVE ASSESSMENT:

Eligibility criteria:

- Learners must secure at least 50% marks of total marks (combined in theory and practical; not less than 40% marks in theory and practical separately) assigned for internal assessment in microbiology in order to be eligible for appearing at the final University examination.
- Student should get a minimum of 75% attendance in Theory and 80 % in Practical classes to be eligible to appear for university examination.
- Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

Pass criteria:

- University Theory Exam – Student should secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass.
- University Practical Exam – Student shall secure 50% marks (including Viva-voce)
- Internal assessment is considered under separate heading of passing. Students should secure at least 50% of the total marks (combined in theory and practical) assigned for internal assessment in order to be declared successful at the final university of that subject.
- A candidate, who has not secured requisite aggregate in the internal assessment, may be provisionally permitted to appear for university examination. However, he/she has to successfully complete the remediation measures prescribed by the institution / University as the case may be prior to the declaration of his/her

results in that particular phase. Failure to meet prescribed 50% marks in internal assessment after availing remedial measures will lead to annulment of the results of the candidate in that particular subject in the university examination.

MARKS DISTRIBUTION FOR UNIVERSITY SUMMATIVE EXAMINATION:

	THEORY		THEORY TOTAL	PRACTICAL		PRACTICAL TOTAL
	Summative exam written paper	MCQs		Summative exam	Viva	
PAPER 1	80	20	200	60	20	100
PAPER 2	80	20				

THEORY SUMMATIVE EXAMINATION:

Written examination: Paper 1: 100 marks + Paper 2 -100 marks = 200 marks
Time: 3 hours each paper

The pattern of questions in each paper shall be as mentioned below:

Type of Question	Number of Questions	Maximum Marks for each question	Total
Structured Long essay questions (SLEQ)	2	10	20
Short essay questions (SEQ)	8	05	40
Short answer questions (SAQ)	10	02	20
Multiple Choice Questions (MCQs)	20	01	20
		Total Marks	**100**

The question papers shall be based on the blue print of question paper setting.

- Total marks under each type of question from each topic needs to be entered by QP setter.
- It should be in accordance with Shri Dharmasthala Manjunatheshwara University guidelines

Blueprint for the theory examination (To be filled by the question paper setter)

Paper 1 Topic	Total marks as per SDMU guidelines	MCQs 1mark each	LEQs 10 mark each	SEQs 5 mark each	SAQs 2 mark each	Total marks*
General Microbiology	20					
Immunology	20					
Infections of Blood stream and Cardiovascular system	25					
Infections of Gastrointestinal and Hepatobiliary system	25					
Hospital infection Control Part 1	10					
Total	**100**					

Paper 2 Topic	Total marks as per SDMU guidelines	MCQs 1mark each	LEQs 10 mark each	SEQs 5 mark each	SAQs 2 mark each	Total marks*
Infections of Skin, soft tissue and musculoskeletal system	25					
Infections of Central nervous system	15					
Infections of Respiratory tract system	20					
Infections of Genitourinary and sexually transmitted infections	15					
Miscellaneous infective syndromes and others	10					
Hospital infection control Part 2	15					
Total	**100**					

**Total marks include MCQs*

Note: The topics 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 topics is inevitable. Students should be prepared to answer overlapping topics.

PRACTICAL SUMMATIVE EXAMINATION
Practical: 80M
Viva-voce: 20M
Total: 100M

S.No	Type	Marks
Exercise 1	Spotters	10
Exercise 2	Gram Stain	10
Exercise 3	Acid Fast Stain	10
Exercise 4	Stool Exercise	10
Exercise 5	Hand hygiene and Biomedical waste Management	10
Exercise 6	Clinical Microbiology applied exercise Based on clinical infective syndromes such as (Infections of blood stream and cardiovascular system, gastrointestinal tract and hepatobiliary system, skin, soft tissue and musculoskeletal system, central nervous system, respiratory system, genitourinary system)	10
Viva-Voce	General Microbiology, Immunology	10
	Infections of blood stream and cardiovascular system, gastrointestinal tract and hepatobiliary system	10
	Infections of skin, soft tissue and musculoskeletal system, central nervous system,	10
	Infections of respiratory system, genitourinary and sexually transmitted infections, hospital infection and control, Miscellaneous infective syndromes and others	10
Total Marks		**100**

6. SELF DIRECTED LEARNING (SDL)

Suggested topics should be entered in the log book preferably as per the format mentioned in the logbook.

7. INTEGRATION

- May be conducted in the form of sharing/nesting/correlation using CBL/PBL/ Case study approach and involving various departments concerned.
- Department involved may be chosen according to the topic and may be conducted as Horizontal/ Vertical form of integration as per the CBME document.

Competency list for integration in Large group teaching sessions (theory)			
Sl. No	**Topics for integration with competency number**	**Suggested Departments to be involved**	
		Vertical Integration	**Horizontal Integration**
1	**MI 1.3**: Describe the epidemiological basis of common infectious diseases	-	Community Medicine
2	**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	General Surgery	
3	**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	General Surgery	
4	**MI1.6**: Describe the mechanisms of drug resistance, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy	-	Pharmacology
5	**MI1.7**: Describe the immunological mechanisms in health	-	Pathology
6	**MI1.8:** Describe the mechanisms of immunity and response of the host immune system to infections	-	Pathology
7	**MI1.9**: Discuss the immunological basis of vaccines and describe the Universal Immunisation schedule	Paediatrics	-
8	**MI1.10**: Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection	Paediatrics	-
9	**MI2.1:** Describe the etiologic agents in rheumatic fever and their diagnosis.	General Medicine	Pathology
10	**MI2.2**: Describe the classification etiopathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis	General Medicine	Pathology

11	**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.	General Medicine	Pathology
12	**MI2.5**: Describe the etiopathogenesis and discuss the clinical evolution and the laboratory diagnosis of kala-azar, malaria, filariasis and other common parasites prevalent in India	General Medicine	Pathology
13	**MI2.7**: Describe the epidemiology, the etiopathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	General Medicine	Pathology
14	**MI3.1**: Enumerate the microbial agents causing diarrhoea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents	General Medicine Paediatrics	Pathology
15	**MI3.3**: Describe the enteric fever pathogens and discuss the evolution of the clinical course and the laboratory diagnosis of the diseases caused by them.	General Medicine	Pharmacology Pathology
16	**MI3.5**: Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis.	General Medicine	Pharmacology
17	**MI3.6**: Describe the etiopathogenesis of Acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	General Medicine	Pharmacology Pathology
18	**MI3.7**: Describe the epidemiology, the etiopathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis.	General Medicine	Pathology

19	**MI3.8**: Choose the appropriate laboratory test in the diagnosis of viral hepatitis with emphasis on viral markers.	General Medicine	Pathology
20	**MI4.1**: Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections	General Medicine	
21	**MI4.2:** Describe the etiopatho- genesis, clinical course and discuss the laboratory diagnosis of bone & joint infections	Orthopaedics	
22	**MI4.3**: Describe the etiopathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis	Dermatology, Venereology & Leprosy General Surgery	
23	**MI5.1:** Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	General Medicine Paediatrics	Pathology
24	**MI5.2**: Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis	General Medicine Paediatrics	Pathology
25	**MI6.1** : Describe the etio-pathogenesis, laboratory diagnosis and preventionof Infections of upper and lower respiratory tract	General Medicine	
26	**MI7.1**: Describe the etiopathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	General Surgery	
27	**MI7.2**: Describe the etiopathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures	Dermatology, Venereology & Leprosy, Obstetrics & Gynaecology	
28	**MI7.3**: Describe the etiopathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of Urinary tract infections	General Medicine	
29	**MI8.1:** Enumerate the microbial agents and their vectors causing Zoonotic	General Medicine	

	diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course, laboratory diagnosis and prevention		
30	**MI8.2:** Describe the etiopathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	General Medicine	Pathology
31	**MI8.3:** Describe the role of oncogenic viruses in the evolution of virus associated malignancy	General Medicine	Pathology
32	**MI8.4** : Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis.	General Medicine	Community Medicine
33	**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	General Medicine,	Community Medicine
34	**MI8.6:** Describe the basics of Infection control		Community Medicine
35	**MI8.16:** Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)		Community Medicine
36	**MI8.14**: Demonstrate confidentiality pertaining to patient identity in laboratory results	AETCOM	

Competency list for integration in DOAP/ skill lab sessions/ small group discussions (log book maintenance, Practical)			
S. NO	**Topics for integration with competency number**	**Suggested departments to be involved**	
		Vertical Integration	**Horizontal Integration**
1	**MI2.3:** Identify the microbial agents causing Rheumatic Heart Disease & infective Endocarditis	General Medicine	Pathology
2	**MI2.6**: Identify the causative agent of malaria and filariasis.	General Medicine	
3	**MI3.2:** Identify the common etiologic agents of diarrhoea and dysentery.	General Medicine Paediatrics	
4	**MI3.4**: Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness.	General Medicine	Pathology
5	**MI5.3**: Identify the microbial agents causing meningitis	General Medicine, Paediatrics	
6	**MI6.2:** Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)	General Medicine	
7	**MI6.3**: Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain)	General Medicine	
8	**MI8.7:** Demonstrate Infection control practices and use of Personal Protective Equipments (PPE) 3 each in (Hand hygiene & PPE)		General Surgery Community Medicine

8. RECOMMENDED REFERENCE BOOKS AND ATLASES LATEST EDITIONS

1. Ananthanarayan and Paniker's Text Book of Microbiology
2. Essentials of Medial Microbiology by Apurba S. Sastry, Sandhya Bhat
3. Parasitology, Protozoology and Helminthology by KD Chatterjee
4. Essentials of Practical Microbiology by Apurba S Sastry and Sandhya Bhat
5. Immunology – RA Godsby, TJ Kindt, BA Osborne, J Kuby
6. Jawetz (Melnick) et al, Medical Microbiology, ed. Z Appleton and Lange, USA.

FORENSIC MEDICINE AND TOXICOLOGY

1. GOAL

1. To facilitate the IMG to achieve the expected competency in the subject of Forensic Medicine and Toxicology.
2. To inculcate research attitude amongst IMGs in the field of Forensic Medicine and Toxicology.

2. OBJECTIVES

2.1 KNOWLEDGE

To ensure that at the end of the Course the student acquires required

1. Understanding of the medico-legal responsibilities of physicians in primary and secondary care settings,
2. Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
3. Ability to manage medical and legal issues in cases of poisoning / overdose,
4. Understanding of the medico-legal framework of medical practice and medical negligence,
5. Understanding of codes of conduct and medical ethics.

2.2 SKILLS

To ensure acquisition of necessary skills by the student, essential for Medico-legal work.

2.3 ATTITUDE AND COMMUNICATION SKILLS

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

1. Respect autonomy of the deceased and his survivors.
2. Demonstrate empathy towards the relatives of the deceased.
3. Respect privacy and maintain confidentiality
4. Communicate effectively with the survivors of the deceased
5. Respect the deceased.

2.4 INTEGRATION

To ensure that the knowledge and skills acquired in Forensic Medicine and Toxicology help the student to understand the importance of medico-legal, ethical and toxicological issues and apply the same during practice of Medicine.

3. TEACHING HOURS AND COURSE CONTENT

A. **Teaching hours : 50 hrs**
B. **Large group teaching : 15 hrs**
C. **Small group teaching : 30 hrs**

D. **Self-directed learning (SDL) : 5 hrs**

Sl. No	Teaching Learning Method	No. of Hours
1	Large group teaching	15
2	Small group teaching (SGT) (Small group discussions- SGD/Tutorials/Seminars/Case based learning sessions/Integrated teaching sessions/Practicals/AETCOM)	30
3	Self-directed Learning(SDL)	5
	TOTAL	**50**

COURSE CONTENTS

ii) THEORY

Sl. No	TOPIC/ SYSTEM : (WITH COMPETENCY NUMBER) core/ non-core competency	Hours
1	**General Information: (FM1.1 to 1.11)** Non-Core: Introduction to Forensic Medicine (FM1.1 & 1.2) Legal Procedure (FM 1.3) Core: Court orders related to medico-legal practice; Importance of documentation in medical practice (FM 1.5 to 1.11)	5 1 3 1
2	**Forensic Pathology: (FM2.1 to 2.26, FM2.29 to 2.35)** Non-core: NIL Core: Death- Somatic and Molecular; Modes of death (FM2.1, 2.5) Concept of whole brain-death,' cortical death' and brainstem death; Human Organ Transplantation Act (FM2.4) Sudden Deaths (FM2.2, 2.3) Postmortem changes (FM2.6, 2.7, 2.8, 2.9, 2.10) Medico-legal autopsy (FM2.11 to 2.19) Mechanical asphyxia (FM2.20, 2.21, 2.22, 2.23) Thermal & Electrical deaths (FM2.24, 2.25) Deaths due to starvation and neglect (FM2.26)	15 1 1 1 4 1 4 2 1
3	**Clinical Forensic Medicine: (FM3.1 to 3.12, FM3.30 to 3.32)**	14

	Non-core: NIL Core: Identification (FM3.1, 3.2) Mechanical injuries (FM3.3, 3.9, 3.10) Regional injuries (FM3.11, 3.12) Medico-legal aspects of injuries (FM3.4 to 3.8) Torture and Human rights (FM3.30, 3.31, 3.32)	 4 6 2 1 1

i) PRACTICALS

Sl. No	Topic of practical : (with competency number)	Suggested teaching learning method	Domain/ level	Teaching hours
1	Age estimation (FM14.4)	DOAP	S/SH	4
2	Skeletal Remains examination (FM14.9)	DOAP	S/SH	6
3	Issuing cause of death certificate (FM1.10,1.11)	Small group discussion	S/SH	2
4	Wound Certificate (FM 14.1, 14.10)	Bed side Clinic/Small Group Discussion	SH/P	2
5.	Weapon Examination (FM 14.11)	DOAP	KH	2

SUGGESTED DISTRIBUTION OF TEACHING HOURS						
Sl. No.	Topic	Lectures (hrs)	Small group teaching (30 hrs)		Self-directed learning (hrs)	Total teaching Hours (50)
			SGD/Tutorials	Practicals		
1	General Information	2	2	2	1	7
2	Forensic Pathology	7	3	4	3	17
3	Clinical Forensic Medicine	6	4	10	1	21
4	AETCOM		5			5
	TOTAL	**15**	**14**	**16**	**5**	**50**

PRACTICALS: 16 hours

SGT (tutorials, seminars/case based teaching) /Integrated - 9 hours
AETCOM- 5 hours
NOTE: *The above table containing teaching hours assigned to different topics under large and small group teaching may be used as a guide by the Institute.*

4. CERTIFICATION OF SKILLS:

Sl. No	Competency description with competency number	No. required to certify
	NIL	NIL

5. SCHEME OF EXAMINATION:

A. Internal assessment [IA]:

Theory IA:

- A minimum of TWO IA shall be conducted in II Professional Year
- Formative assessment marks shall be calculated based on scoring in written tests/ small group teaching participation/ seminars/ assignments and log book assessment of SDL topics and AETCOM modules.

Practical IA:

- A minimum of TWO IA shall be conducted in II Professional Year
- Practical exam shall include exercises that shall be Case scenario based, Skill stations, OSCE stations
- Viva/oral examination shall be included in practical IA marks.

The distribution of IA marks shall be as mentioned below:

Theory IA	Maximum Marks	Practical IA	Maximum Marks
Theory written paper	30	Practical exam	30
Formative assessment from Class tests/MCQs/Tutorials/Seminars/Assignments	05	Viva Voce	10
Logbook Formative assessment for SDL/ etc	10	Logbook and record book evaluation and formative assessment	10
AETCOM	05		
TOTAL	**50**		**50**

B. University examination/Summative assessment [SA]:

Forensic Medicine and Toxicology is learnt and assessed during professional years 2 and 3 part 1. SA will be held at the end of 3rd professional year part 1. It will comprise of one written theory paper for 100 marks and practicals including viva for 100 marks. IA is documented under a separate heading that includes aggregate IA in theory, practicals, logbook assessment and AETCOM. The university shall identify the students struggling to pass the IA exams or who could not attend the required number of IA exams and prescribe remedial measures. There will be no less than two theory and two practical IA exams during each professional year that forensic medicine is learnt. The results of the IA exams will be declared and displayed on the notice board within 15 days of the IA, feedback provided to the student and documented.

Eligibility criteria

- Learners must have minimum 75% attendance in theory and 80% in practical in each phase of instruction.
- Learners must have completed the Logbook and Practical record book to be eligible for appearing at the final University examination.
- Learners must have completed the required certifiable competencies for that phase of training.
- A student who has not taken minimum required number of tests for IA each in theory and practical will not be eligible for university examinations.
- Learners must secure at least 50% of the total marks combined in theory and practical and not less than 40% marks in theory and practical separately assigned for IA in order to be eligible for appearing at the final University examination.

Pass criteria

- A candidate shall obtain 50% marks in University conducted examination separately in Theory and Practical in order to pass in Forensic Medicine and Toxicology. [SA in Forensic Medicine and Toxicology shall be conducted in Third Professional Year- Part I].
- **IA marks will not be added to University examination marks.**
- **IA will reflect as a separate head of passing at the summative examination.**

6. SELF-DIRECTED LEARNING:

The suggested topics should be entered in the logbook preferably in the form of concept mapping.

7. INTEGRATED TEACHING:

Sl. No	Topics / areas of integration	Suggested Departments to be involved (Vertical Integration)
1	Forensic pathology Sudden death, modes of death, autopsy procedures (FM2.1 to 2.3, FM2.5, FM2.11 to 2.14) Human Organ Transplant Act (FM2.4)	Pathology AETCOM
2	Clinical Forensic Medicine Identification (FM3.1) Injuries (FM3.3 to 3.4, FM3.6 to 3.12)	 Anatomy General Surgery, Orthopaedics

8. Recommended Text and Reference books, Journals and Atlases with editions

Text books:

1. K.S.Narayan Reddy, Essentials of Forensic Medicine and Toxicology, Medical Book company, Hyderabad – 34th Edition 2017.
2. Modi, Test Book of Forensic Medicine Edited by Justice K Kannan. LexisNexis-26th Edition 2018.
3. PV Guharaj, Forensic Medicine and Toxicology, University Press, 3rd Edition, 2019.
4. V.V. Pillay, Modern Medical Toxicology, Jaypee brothers, 4th edition, 2013.

Reference books:

5. Bernard Knight, Forensic Pathology, Arnold, 4th Edition 2016
6. Francis camps, Gradwohl's Legal Medicine, Bristol, John wright and sons, 3rd Edition, 1976.
7. Jason Payne, Simpson's Forensic Medicine, CRC Press, 13th Edition, 2014.

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COMMUNITY MEDICINE

1. GOAL

Broad goal of teaching undergraduate medical students is to prepare the students to function effectively as Community and Primary Care Physician.

2. OBJECTIVES

2.1 KNOWLEDGE

The student shall be able to:

1. Enumerate the principles and practice of medicine in hospital and community setting.
2. Describe the natural history and role of agent, host and environmental factors in health and disease.
3. Describe the concepts of community health and levels of health care with related health interventions.
4. Explain the principles of sociology and identify social factors related to health, disease and disability.
5. Describe and analyse the role of socio-cultural beliefs in health and disease and their impact on individuals, family, and community.
6. Describe the elements of normal psychology and social psychology.
7. Describe the various health education and effective communication methods.
8. Describe the demographic pattern of the country and its relation to health.
9. Describe vital statistics and various methods used to collect the vital statistics in India.
10. Describe the health care delivery system in India
11. Describe the organizations and functions of primary health centre, community health centre and district level health centre.
12. Describe uses and interpretation of basic bio-statistical data.
13. Describe the basics of research in medical field.

2.2 SKILLS

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

1. Practice principles of medicine in hospital and community settings.
2. Interpret health and illness behaviour at individual and community level.
3. Demonstrate art of communication with patients including history taking and role of socio-cultural aspects of diseases.
4. Formulate a research plan to undertake projects funded by ICMR, other universities and funding agencies.
5. Demonstration of various government agencies involved in delivery of health care services to the community.

2.3 ATTITUDE AND COMMUNICATION SKILLS

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

1. Demonstrate ability to communicate to patients in a patient, respectful, non-threatening, non- judgmental and empathetic manner.
2. Counsel individuals, families and communities regarding how to stay healthy, what they can individually and collectively do to maintain health and when to seek help.
3. Demonstrate an understanding of national and regional health care policies including the National Health Mission (NHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
4. Demonstrate an understanding of role of health care team, functions of members of such a team as well as demonstrate ability to function as a leader at the primary care level.
5. Demonstrates an understanding of notifiable diseases, international health regulations, prevention and control of diseases of public health importance.
6. Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability and appropriately identify and refer patients who may require specialized or advanced tertiary care.

2.4 INTEGRATION

The knowledge acquired in Community Medicine should help the students to understand the impact of environment, society and National Health priorities as they relate to the promotion of health and prevention as well as cure of disease.

3. TEACHING HOURS AND COURSE CONTENT

A. **Total Teaching hours: 120 hrs**

SL NO	Teaching learning method		No. of Hours	No. of Hours
1	Large group teaching			20
2	Small group teaching (SGT) (Small group discussions- SGD/Tutorials/Seminars/Case based learning sessions/Integrated teaching sessions/Practical)	Small group discussion/ Tutorials etc	4	30
		Integrated teaching etc	02	
		Practical (Performance and Demonstrations)	24	
3	Self-directed learning (SDL)			10
	Total theory hours			**60**
5	Clinical (Community Health) Posting			**60**
6	Total teaching hours			**120**

B. **Course contents**

i. **THEORY**

Sl. No.	Topic and Competency No.	Teaching hrs
1	**Epidemiology** (CM7.1, CM7.2, CM7.3**,** CM7.4, CM7.5, CM7.6, CM7.7, CM7.8, CM7.9, CM8.4) **Core:** • Aims, Approach, tools, basic measurements & uses of Epidemiology • Epidemiological study designs, Association & causation • Infectious disease epidemiology • Sources of epidemiological data, use of computers in epidemiology	5
2	**Epidemiology of Communicable** (CM 3.3, 3.6, 8.1, CM 8.3, CM8.4, CM8.5, CM8.6, CM8.7) **Core:** Epidemiology, diagnosis & treatment of communicable & non communicable diseases	16

	Planning, implementation & evaluation of control measures, Prevention & surveillance Disease specific National Health Programs • Respiratory infections ○ Diphtheria, pertussis, Measles, Mumps & Rubella ○ Influenza, SARS, Meningococcal meningitis ○ Small pox & Chicken pox ○ ARI ○ TB • Intestinal infections ○ Poliomyelitis ○ Viral hepatitis ○ Acute diarrhoeal diseases, cholera ○ Typhoid, food poisoning ○ Amoebiasis, ascariasis, hook worm infestations, Parasitic – tineasis, hydatid disease • Vector borne infections ○ Dengue, JE, chikungunya, Zika virus ○ Filariasis, Leishmaniasis, NVBDCP • Zoonoses ○ Viral – rabies, yellow fever, Nipah virus, KFD ○ Bacterial – brucellosis, leptospirosis, Plague, Human salmonellosis • Surface infections ○ Trachoma, Tetanus ○ Leprosy with NLEP ○ STD, Yaws ○ HIV /AIDS with NACP • Emerging and re-emerging infections, Rickettsial infections • Hospital acquired infections	
3	**Epidemiology of Non communicable Diseases** (CM 8.2, CM8.3, CM8.5, CM8.6, CM8.7) **Core:** Epidemiology, diagnosis & treatment of communicable & non communicable diseases Planning, implementation & evaluation of control measures, Prevention & surveillance Disease specific National Health Programs	5

	• NCD – Introduction, Coronary heart diseases, Hypertension & Stroke • Diabetes mellitus • Obesity, Rheumatic heart disease, Blindness • Cancer, Accidents, Injuries NPCDCS, NPCB	
4	**Nutrition** (CM5.1, CM5.2, CM5.3, CM5.4, CM5.5, CM5.6, CM5.7, CM5.8) **Core:** • Sources of nutrients and Nutritional requirement • Nutritional problems in public health • Nutritional surveillance, education and rehabilitation • National Nutrition Programs including ICDS • Food borne diseases, Food hygiene, food fortification, additives & adulteration	5
5	**Health planning & management** (CM16.1, CM16.2, CM16.3, CM16.4) **Core:** • Concept of health planning and planning cycle & National health policies • Health management techniques • **Non-core:** • Niti Aayoga	2

ii. PRACTICAL

Sl. No.	Topic with competency number	Suggested teaching learning method	Domain / Level	Teaching Hours
1	Define, calculate and interpret morbidity and mortality indicators (CM 7.4)	Demonstration	S / SH	2
2	Describe and demonstrate the steps in the Investigation of an epidemic (CM 7.7, 20.2)	Demonstration	K, S / KH, SH	4
3	Immunity & immunizing agents (CM 7.2, 10.5)	Demonstration	K / KH	8
4	Enumerate aims, uses & types Evaluate a screening test using various criteria (CM 7.6)	Demonstration	S / SH	2

5	Drugs of Public Health Importance (CM 8.1)	Demonstration	K / KH	2
6	Bacteria & Parasites (CM 8.1)	Demonstration	K / KH	2
7	Diet recommendation for individuals & families (CM 5.4)	Demonstration	S / SH	4

***K – Knowledge, S – Skill, KH – Knows How, SH – Shows How**

iii. CLINICAL (COMMUNITY HEALTH) POSTING

Sl. No.	Topic with competency number	Suggested T/L method	Domain / Level	Teaching Hours
1	Visit to TB Centre (CM8.1, 8.3, 8.6)	SGD	K / KH	3
2	Visit to Malaria Office (CM8.1, 8.3, 8.6)	SGD	K / KH	3
3	Visit to Urban Leprosy Centre (CM8.1, 8.3, 8.6)	SGD	K / KH	3
4	Visit to ICTC (CM8.1, 8.3, 8.6)	SGD	K / KH	3
5	Visit to Corporation (CM 8.7, 9.2)	SGD	K / KH	3
6	Visit to Blind School (CM 1.5)	SGD	K / KH	3
7	Visit to Akshaya Patra Foundation (CM 5.6, 5.7)	SGD	K / KH	3
8	Visit to milk diary (CM 5.7)	SGD	K / KH	3
9	Disinfection, Visit to OT (CM 8.1, 8.5)	SGD	K / KH	3
10	Visit to Hospital Kitchen (CM 5.7)	SGD	K / KH	3
11	Visit to water treatment plant (CM 3.2)	SGD	K / KH	3
12	Visit to sewage treatment plant (CM 3.4)	SGD	K / KH	3
13	Visit to PHC Uppinbetageri / Hebballi (CM 17.5)	SGD	K / KH	3

14	Essential Medicine (CM19.1, 19.2, 19.3)	SGD	K / KH	3
15	Immunisation (Specific defences, UIP schedule, open vial policy, AEFI) Visit to immunisation room (CM 7.2, 10.5)	SGD	S / SH	3
16	Introduction to family study, housing & sanitation, culture & attitude, individual health (CM 2.1, 2.2, 2.4, 3.5, 10.3)	SGD	S / SH	3
17	Vulnerable groups – ANC, PNC, Neonate, Infant, Under-five, school children (CM 10.1, 10.2, 10.3)	SGD	S / SH	3
18	Nutritional Assessment (CM5.2, 5.4)	SGD	S / SH	3
19	Data collection (CM 2.1, 2.2, 2.4, 3.5, 5.2, 5.4, 9.1, 10.1, 10.2, 10.3)	SGD	S / SH	3
20	Diet calculation (CM5.2)	SGD	S / SH	3

***SGD – Small Group discussion, K – Knowledge, S – Skill, KH – Knows How, SH – Shows How**

Note: Content under NON-CORE category cannot be assessed in Summative assessments. However, the same can be assessed in Formative assessments.

SUGGESTED DISTRIBUTION OF TEACHING HOURS								
Sl. no.	**Topic**	**Lectures (20hrs)**	**Small group teaching (30hrs)**			**SDL (10 hrs)**	**CHP (60 hrs)**	**Total (120hrs)**
			SGD (4hrs)	**IT (2hrs)**	**Practicals (24hrs)**			
1	Epidemiology	3	2	-	20	-	3	28
2	Epidemiology of Communicable diseases	11		2		6	18	37
3	Epidemiology	3				2	3	8

	of Non-communicable diseases							
4	Nutrition	2	2	-	4	1	18	27
5	Health Planning and Management	1		-	-	1	-	2
6	Essential Medicines	-	-	-	-	-	3	3
7	Environment & Health						6	6
8	Health care of the Community						3	3
9	Sociology						3	3
10	Reproductive, maternal & child health						3	3

SUGGESTED DISTRIBUTION OF TEACHING HOURS FOR PANDEMIC MANAGEMENT MODULE							
Module	**Broad areas**	**Lecture (2 hrs)**	**Small group teaching (5 hrs)**		**SDL (2hrs)**	**CHP (3hrs)**	**Total (12hrs)**
			SGD (2 hrs)	**Practicals (2 hrs)**			
2.2	Emerging & Re-emerging infections, early identification and control of new infections	2	2	-	2	-	6
2.4*	Vaccination strategies including vaccine development & implementation	-	-	3	-	3	6

***6 hours of module 2.4 will be covered in 120 teaching hours allotted in GMR**

4. CERTIFICATION OF SKILLS – Nil

5. SCHEME OF EXAMINATION:

A. INTERNAL ASSESSMENT [IA]: Department shall do the following formative assessments in the second Professional Year

- One test at the end of 3rd term (2nd Professional Year)
- Second test at the end of 4th term (2nd Professional Year)
- End posting exams at the end of clinical postings during 3rd and 4th term.

IA in the second Professional Year:

Theory tests:

- A minimum of **TWO** theory tests shall be conducted
- Formative assessment theory marks shall be calculated based on scoring in written tests, class tests/ tutorials/ seminars/ assignments and log book assessment of SDL/ AETCOM

Practical tests:

- A minimum of **TWO** practical tests shall be conducted
- Formative assessment practical marks shall be based on practical exam in the form of end posting exam/ Spotters / Problems, Viva voce, day to day assessment and record book evaluation.
- After the completion of community health posting, end posting exam will be conducted as OSPE.

Distribution of marks for IA

Theory IA	Maximum marks	Practical IA	Maximum marks
Theory IA (From written paper)	60	Practical exam performance (OSPE during end posting/ Spotters / Problems)	60
Formative assessment from class tests/ tutorials/seminars/ assignments/creative writing experiences of AETCOM module	20	Viva Voce	10
log book assessment of formative skills/SDL/ etc.	20	Formative assessment logbook assessment	20
		Record Book Evaluation	10
TOTAL	**100**		**100**

B. University examination/Summative assessment [SA]:

Community medicine is learnt and assessed during professional years [PY] 1, 2 and 3 part 1. SA will be held at the end of 3rd professional year part 1. It will comprise of two written theory paper for 100 marks each and practicals including viva for 100 marks. IA is documented under a separate heading that includes aggregate IA in theory, practicals, logbook assessment and AETCOM. The university shall identify the students struggling to pass the IA exams or who could not attend the required number of IA exams and prescribe remedial measures. There will be no less than two theory and two practical IA exams during each professional year that community medicine is learnt. The results of the IA exams will be declared and displayed on the notice board within 15 days of the IA, feedback provided to the student and documented.

Eligibility criteria

- Learners must have minimum 75% attendance in theory and 80% in practical in each phase of instruction.
- Learners must have completed the Logbook and Practical record book to be eligible for appearing at the final University examination.
- Learners must have completed the required certifiable competencies for that phase of training.
- A student who has not taken minimum required number of tests for IA each in theory and practical will not be eligible for university examinations.
- Learners must secure at least 50% of the total marks combined in theory and practical and not less than 40% marks in theory and practical separately assigned for IA in order to be eligible for appearing at the final University examination.

Pass criteria

- A candidate shall obtain 50% marks in University conducted examination separately in Theory and Practical in order to pass in community medicine. [SA in community Medicine shall be conducted in Third Professional Year- Part I].
- **IA marks will not be added to University examination marks.**
- **IA will reflect as a separate head of passing at the summative examination.**

C. Formative assessments – Learners must secure at least 50% marks of the total marks combined in theory and practical and not less than 40% marks in theory and practical separately 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.

Level of participation in small group teaching, SDL and AETCOM modules shall be assessed using the format given in logbook.

A clear record of all components that add to the internal assessment marks needs to be maintained by the institution/departments and retained by them for at least 5 years after completion of the examination.

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. The format for providing feedback is given in logbook.

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.

Note: Summative assessment shall be conducted at the end of MBBS 3rd Professional Year Part 1.

6. SELF DIRECTED LEARNING (SDL)

Suggested topics should be entered in the log book preferably in the form of concept mapping.

7. INTEGRATION:

- May be conducted in the form of sharing/nesting/correlation using CBL/PBL/ Case study approach and involving various departments concerned while preparing the specific learning objectives of the integration topics.
- Department involved may be chosen according to the topic and may be conducted as Horizontal/ Vertical form of integration as per the MCI CBME document.

Competency list for integration in Large group teaching sessions (theory)				
Sl. No	**Competency no.**	**Competency to be integrated by nesting/ sharing/ aligning**	**Vertical integration**	**Horizontal integration**
1.	CM 5.3	Define & Describe common nutrition related health disorders, their control & management – LBW, PEM & Vitamin A deficiency	Paediatrics	-
2.	CM 5.3	Define & Describe common nutrition related health disorders, their control & management –	General Medicine	-

		Nutritional anaemia, iodine deficiency disorders		
3.	CM 5.7	Describe food hygiene	-	Microbiology
4.	CM 7.2	Enumerate, describe & discuss modes of transmission & measures for prevention & control of communicable & non communicable diseases	General Medicine	-
5.	CM 8.1	Describe & discuss the epidemiological & control measures including the use of essential laboratory tests at primary care level for communicable diseases – TB	General Medicine	Pathology Microbiology
6.	CM 8.1	Describe & discuss the epidemiological & control measures including the use of essential laboratory tests at primary care level for communicable diseases – ARI	Paediatrics	-
7.	CM 8.1	Describe & discuss the epidemiological & control measures including the use of essential laboratory tests at primary care level for communicable diseases – HAI	-	Microbiology
8.	CM 8.2	Describe & discuss the epidemiological & control measures including the use of essential laboratory tests at primary care level for non-communicable diseases – Diabetes mellitus	General Medicine	-
9.	CM 19.1	Define & describe the concept of essential medicine list (EML)	-	Pharmacology
10.	CM 19.3	Describe counterfeit medicine & it's prevention	-	Pharmacology

Competency list for integration in Small group teaching sessions (theory)				
Sl. No	**Competency no.**	**Competency to be integrated by nesting/ sharing/ aligning**	**Vertical integration**	**Horizontal integration**
1.	CM 5.2 (DOAP)	Describe & demonstrate the correct method of performing a nutritional assessment of individuals, families & community by using appropriate methods	Paediatrics	-
2.	CM 5.4 (DOAP)	Plan & recommend a suitable diet for individuals & families based on local availability of foods & socioeconomic status etc. in a simulated environment	General Medicine	
3.	CM 7.7 (Practical)	Describe & demonstrate the steps in the investigation of an epidemic of communicable disease & describe the principles of control measures	-	Microbiology

8. RECOMMENDED TEXT BOOKS, REFERENCE BOOKS AND ATLAS

A. **Recommended Books**

1. Park JE, Park K, Text Book of Preventive & Social Medicine, 25th Ed., M/S Banarsidas Bhanot, Jabalpur, India.
2. Sunder Lal, Adarsh, Pankaj. Textbook of Community Medicine, 5th Ed., CBS Publishers, New Delhi, India.
3. CM Dhaar, Rubbani I, Foundation of Community Medicine, 1st Ed., Elsevier, India.
4. Suryakantha AH, Community Medicine With Recent Advances 5th Ed., Jaypee Brothers Medical Publishers, New Delhi, India.
5. Mahajan BK, Methods in Biostatistics for Medical Student and Research Workers, 8th Ed., Jaypee Brothers Medical Publishers, New Delhi, India.
6. Kishore J, National Health Programmes of India , 12thEd., Century Publications, New Delhi, India.
7. Kadri AM, IAPSM 's Textbook of Community Medicine 1st Edition, Jaypee Brothers Medical Publishers, New Delhi, India
8. Mahabalaraju DK, Essentials of Community Medicine Practicals, 2nd Ed., Jaypee Brothers Medical Publishers, New Delhi, India

B. Reference books

1. Wallace RB, Public Health and Preventive Medicine, 15th Ed., McGraw-Hill Medical Publishers, USA.
2. Roger D, Robert B, Mary AL, Martin G, Oxford Textbook of Public Health, 5th Ed., Oxford University Press, USA
3. Gordis L, Epidemiology, 5th Ed., Elsevier Saunders publication, Philadelphia.
4. Sathe PV, Sathe AP, Epidemiology & Management for Health Care for All, 3rd Ed., Popular Prakashan Pvt. Ltd., Mumbai, India.

Note: A single textbook may not cover the entire curriculum. Referring to more than one book is recommended. Students are recommended to use the recent editions as and when the updated editions are released.

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PAEDIATRICS

1. GOAL

The aim of teaching the undergraduate student is to impart such knowledge, skills and attitude that may enable him/her to prevent, diagnose and treat common childhood illness including neonatal disorders, implement national programs and refer when needed to specialist.

2. OBJECTIVES

2.1 KNOWLEDGE

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

1. Explain the principles of optimal growth, development and nutrition of child, and adolescents and identify deviation from normal.
2. Enumerate the principle of optimal neonatal care.
3. Describe and analyze the emergency and routine ambulatory and first level referral unit care for neonate, infants, children and adolescents.
4. Enumerate the principles of health promotion and prevention of disease in children
5. Describe the various causes, types and management of children with special needs.
6. Describe the national programs related to child health including integrated management of neonatal & childhood illness IMNCI

2.2 SKILLS

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

1. Practice principles of paediatrics medicine in hospital and community setting.
2. Interpret the optimal growth, development and nutrition of neonates, children and adolescent and identify deviations from normal.
3. Perform procedure as indicated for children of all ages in the primary care settings.
4. Provide optimal neonatal care at community settings.
5. Demonstration art of communication in regards to child hood illness

2.3 ATTITUDE AND COMMUNICATION SKILLS

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

At the end of the course, the learner shall be able to

1. Respect patient's autonomy
2. Do no harm
3. Understand and follow the principle of beneficence
4. Think and act in a just manner
5. Demonstrate empathy,
6. Respect privacy
7. Maintain confidentiality
8. Communicate effectively to the child and his/her caretakers

9. Educate and counsel the patient and family,
10. Maintain punctuality
11. Work in a team of peers, seniors and interdepartmental personnel.
12. Evaluate the ethics, scientific procedures, social and legal implications involved in the management of childhood illnesses.

2.4 INTEGRATION

The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for neonates, infants, children and adolescents based on a sound
knowledge of growth, development, disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

3. TEACHING HOURS AND COURSE CONTENT

A. **Teaching hours : THEORY-NIL,CLINICAL POSTINGS -30 hrs**

No theory topics in MBBS Professional year II.

	Practical / Clinical Paedaitrics	**30**
1	**General history taking & General physical examination and case sheet writing**	03
2	Core: Assessment of growth and documentation in growth charts.PE1.3 Discuss and describe the methods of assessment of growth including use of WHO and Indian national standards. Enumerate the parameters used for assessment of physical growth in infants, children and adolescents. Anthropometry and growth chart.PE1.4 Perform Anthropometric measurements, document in growth charts and interpret .PE11.5 Calculate BMI, document in BMI chart and interpret	03
3	Core: Assessment of developmental milestones. PE1.5	03
4	Core: Discuss the methods of assessment of development. PE1.6 Perform Developmental assessment and interpret. **PE1.7**	03
5	Core: A child who fails to thrive. PE2.1 Discuss the etio-pathogenesis, clinical features and management of a child who fails to thrive. PE2.2 Assessment of a child with failing to thrive including eliciting an appropriate history and examination. PE2.3 Counselling a parent with failing to thrive child A child with short stature. PE2.4 Discuss the etio-pathogenesis, clinical features and management of a child with short stature.PE2.5 Assessment of a child with short stature:	03

	Elicit history, perform examination, document and present.PE2 6 Enumerate the referral criteria for problems	
6	Core: Method of nutritional status assessment of infants, children and adolescents and planning appropriate diet in health and disease.PE9.1 Describe the age related nutritional needs of infants, children and adolescents including micronutrients and vitamins.PE9.2 Describe the tools and methods for assessment and classification of nutritional status of infants, children and adolescents.PE9.3 Explain the Calorific value of common Indian foods.PE9.4 Elicit document and present an appropriate nutritional history and perform a dietary recall PE9.5 Calculate the age related calorie requirement in Health and Disease and identify gap.PE9.6 Assess and classify the nutrition status of infants, children and adolescents and recognize deviations.PE9.7 Plan an appropriate diet in health and disease	03
7	Noncore: Baby friendly hospital initiatives Advocating breast feeding.PE7.1 Awareness on the cultural beliefs and practices of breast feeding .PE7.2 Explain the physiology of lactation.PE7.3 Describe the composition and types of breast milk and discuss the differences between cow's milk and Human milk.PE7.4 Discuss the advantages of breast milk.PE7.5 Observe the correct technique of breast feeding and distinguish right from wrong technique PE7.6 Enumerate the baby friendly hospital initiatives.PE7.7 Perform breast examination and identify common problems during lactation such as retracted nipples, cracked nipples, breast engorgement, breast abscess.PE7.8 Educate mothers on ante natal breast care and prepare mothers for lactation.PE7.9 Educate and counsel mothers for best practices in Breast feeding.PE7.10 Respects patient privacy.PE7.11 Participate in Breast Feeding Week Celebration	03
8	Core: Best practices in Complimentary Feeding.PE8.1 Define the term Complementary Feeding.PE8.2 Discuss the principles, the initiation, attributes, frequency,	03

	techniques and hygiene related to Complementary Feeding including IYCF.PE8.3 Enumerate the common complimentary foods.PE8.4 Elicit history on the Complementary Feeding habits.PE8.5 Counsel and educate mothers on the best practices in Complimentary Feeding	
9	Core: Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM).PE10.1 Define and describe the etio-pathogenesis, classify including WHO classification, clinical features, complication and management of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM).PE10.2 Outline the clinical approach to a child with SAM and MAM.PE10.3 Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community based intervention, rehabilitation and prevention.PE10.4 Identify children with under nutrition as per IMNCI criteria and plan referral.PE10.5 Counsel parents of children with SAM and MAM.PE10.6 Enumerate the role of locally prepared therapeutic diets and ready to use therapeutic diets	03
10	**End posting exam**	03

Note: Content under NONCORE category cannot be assessed in Summative assessments. However, the same can be assessed in Formative assessments.

SUGGESTED DISTRIBUTION OF TEACHING HOURS					
Sl No	**Topic**	**Large Group**	**SGT/tutorials/ Integrated learning (00 Hrs)**	**Practical (30 Hrs)**	**Self-Directed Learning (SDL)**
		(00 Hrs)	00	(Total- 30 Hrs)	(00 Hrs)
1.	AETCOM	00	00	00	
	TOTAL (30 Hrs)	00	00	30	00

PRACTICAL: 30 HOURS **AETCOM- 00 hours**

4. CERTIFICATION OF SKILLS:

To be evaluated using format provided as Annexure. Checklist can be prepared by subject experts.

Note: *In theory, Practical and certification of skill sections, topics with corresponding competency numbers as mentioned in volume 11 of competency based undergraduate*

curriculum for Indian Medical Graduate (2018) prescribed by Medical Council of India, have been mentioned.

Sl no	Competency Description with Competency number	No. required to certify P
1	PE1.4 Perform Anthropometric measurements, document in growth charts and interpret S P Y 3	5
2	PE1.7 Perform Developmental assessment and interpret S P N 3	3
3	PE11.5 Calculate BMI, document in BMI chart and interpret S P Y 3	3
4	PE7.5 Observe the correct technique of breast feeding and distinguish right from wrong technique S P Y 3	3
Total	**Total number of competencies to be certified - 4**	14

5. SCHEME OF EXAMINATION:

Eligibility criteria: 80% attendance, completion of record book, passing certifiable competencies
Pass criteria: 50% marks
Formative Assessment marks: 40marks 3 hours
There is no theory exam for PY 2
Practical exams:
END POSTING EXAMINATION [EOP] 30+logbook 10

Practical IA	Maximum marks
EOP (OSCE during end posting/ Spotters / Viva Voce)	30
LOGBOOK	10
Total PRACTICALS	40

Summative exams: university summative exams will be held at the end of 3rd PY, PART 2

FINAL INTERNAL ASSESSMENT MARKS

- Internal assessment is considered under separate heading of passing in university exams. Students should secure at least 50% of the total marks (combined in theory and practical) assigned for internal assessment in order to be declared successful at the final university of that subject.
- A candidate, who has not secured requisite aggregate in the internal assessment, will not be permitted to appear for university examination if he/she has not

successfully completed the remediation measures prescribed by the institution / University as the case may be.

- Internal assessments will be again held during 3rd PY part 1 and 2

A clear record of all components that add to the internal assessment marks needs to be maintained by the institution/departments and retained by them for at least 5 years after completion of the examination.

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.

The format for providing feedback is given in annexure.

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.

Distribution of Internal assessment marks pediatrics at university exams [final exams]:

Practicals

Practical IA	**2nd PYmarks**	**3-1 PY**	**3-2PY**	**total**
EOP (including Viva Voce)	30	60	60	150
Logbook	10	20	20	050
Total PRACTICALS	40	80	80	200
Final marks to be considered under heading 'internal assessment PRACTICALS' at university exams [final exams] will be out of 100				200/2=100

THEORY:

THEORY IA	**2nd PY marks**	**3-1 PY**	**3-1 PY**	**3-2PY**	**3-2PY**
written exams +MCQs	-	55	55	65	65
formative assessment as per logbook	-	5	5	5	5
AETCOM	-	10	10	10	10
Total marks		70	70	80	80
Total marks					300
Final marks to be considered under heading 'internal assessment THEORY' at university exams [final exams] will be out of 100					300/3

6. SELF DIRECTED LEARNING (SDL)

NIL

7. INTEGRATION:

- May be conducted in the form of sharing/nesting/correlation using CBL/PBL/ Case study approach and involving various departments concerned while preparing the specific learning objectives of the integration topics.
- Department involved may be chosen according to the topic and may be conducted as Horizontal/ Vertical form of integration as per the MCI CBME document.

Competency list for integration in Large group teaching sessions (theory)				
SL	**Comp No.**	**Competency to be integrated by nesting/ sharing/ aligning**	**Integration (Horizontal)**	**Integration (Vertical)**
1	PE1.3	Discuss and Describe the methods of assessment of growth including use of WHO and Indian national standards. Enumerate the parameters used for assessment of physical growth in infants, children and adolescents.	----	Community Medicine
2	PE1.5	Define development and discuss the normal developmental milestones with respect to motor, behaviour, social, adaptive and language.	----	Psychiatry
3	PE9.1	Describe the age related nutritional needs of infants, children andadolescents including micronutrients and vitamins.	Biochemistry , Community medicine	----
4	PE9.2	Describe the tools and methods for assessment and classification of nutritional status of infants, children and adolescents.	Community medicine	----
5	PE9.3	Explain the Calorific value of common Indian foods.	Biochemistry	----
6	PE9.4	Elicit document and present an appropriate nutritional history and	Community medicine	

	PE9.5 PE9.6 PE9.7	perform a dietary recall Calculate the age related calorie requirement in Health and Disease and identify gap Assess and classify the nutrition status of infants, children and adolescents and recognize deviations Plan an appropriate diet in health and disease		
7	PE7.2 PE7.3	Explain the physiology of lactation. Describe the composition and types of breast milk and discuss the differences between cow's milk and Human milk.	Physiology	
8	PE7.1 PE7.7 PE7.9	Awareness on the cultural beliefs and practices of breast feeding. Perform breast examination and identify common problems during lactation such as retracted nipples, cracked nipples, breast engorgement, breast abscess. Educate and counsel mothers for best practices in Breast feeding.		Obstetrics and Gynecology .
9	PE8.1 PE8.2 PE8.3 PE8.4 PE8.5	Define the term Complementary Feeding Discuss the principles, the initiation, attributes, frequency, techniques and hygiene related to Complementary Feedingincluding IYCF Enumerate the common complimentary foods Elicit history on the Complementary Feeding habits Counsel and educate mothers on the best practices inComplimentary Feeding	Community medicine	
10	PE10.1 PE10.2 PE10.3	Define and describe the etio-pathogenesis, classify including WHO classification, clinical features, complication and management of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition	Physiology Biochemistry	

		(MAM). Outline the clinical approach to a child with SAM and MAM. Assessment of a patient with SAM and MAM, diagnosis,classification and planning management including hospital and community based intervention, rehabilitation and prevention.		
11	PE10.4	Identify children with under nutrition as per IMNCI criteria and plan referral.	Community medicine	

8. RECOMMENDED TEXT BOOKS, REFERENCE BOOKS AND ATLAS

Text Books

Recent Editions:

1. Ghai Essential Paediatrics CBS publications and distributes PVT Ltd
2. IAP textbook of Paediatrics Jaypee brothers Medical Publishers
   Related Authors – A Parthasarathy and PSN Menon and MKC Nair
3. Pediatric Clinical methods Meharban Singh, CBS publications and distribution PVT Ltd.
4. PG Text Book of Pediatrics by Piyush Gupta J P Publishers.

Reference books :

1. Nelson's Text book of paediatrics, 22 Edition 2018. Elsevier
2. Manual of Neonatal care by J. Cloherty, 10th edition 2019. Woltersklower.

Journals :

1. Paediatrics – American Academy of Paediatrics
2. Archives of Disease of childhood – Royal college of Paediatricians
3. Indian Paediatrics - Indian Academy of Paediatrics
4. Indian Journal of Paediatrics – AIIMS Delhi Paediatrics Department

A BRIEF OVERVIEW OF MEDICINE AND ALLIED SUBJECTS

General medicine and its allied subjects [Dermatology venereology and leprosy, Psychiatry and Respiratory medicine] are learnt through multiple professional years [PY] and assessed at the end of professional year 3, part 2.

The teaching hours are as follows:

Subject	PY 2		PY3 PART 1		PY3 PART 2	
	Theory hours	Clinical rotations Weeks [Monday to Friday]	Theory hours	Clinical rotations Weeks [Monday to Saturday]	Theory hours	Clinical rotations Weeks [Monday to Saturday]
General medicine	25	4	65	4	210	4+8
Dermatology		2	30	2		2
Psychiatry		2	40	2		
Respiratory medicine		2	20			

Theory includes interactive lectures, small group teaching and self directed learning hours.
AETCOM is a vertical module that is shared by all the subjects in teaching and assessment.
The learner doctor model is incorporated in clinical rotations as per GMR 2019.

Assessment:

Students are assessed in General medicine and its allied subjects during periodic internal assessment [IA] and summative assessment in university examinations [SA].

Eligibility for university exams:

- Learner should obtain a minimum of 75% attendance in Theory and 80 % in Practical classes to be eligible to appear for university examination.
- Learners must secure at least 50% marks of 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.
- Learner who has not completed the required number of IAs will not be eligible for exams.
- Learners must have completed the required certifiable competencies for that phase of training

- Learners must have completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject
- Learners who do not have at least 75% attendance in the electives [after PY3 part 1] will not be eligible for the Third Professional - Part II examination.

Internal assessment:
IA marks are not added to the SA marks. Instead, IA is a separate heading under university exams that needs passing independently.
One IA in the final year will be a preliminary exam that will be conducted like university exam.
There will be a minimum of 2 IAs during each PY that the subject is taught. End of posting exams will be held after each clinical posting.

Theory IA: The questions in theory written exams will include structured long essays, short essays, short answer questions and MCQs. MCQs in theory written tests will not be more than 20% of marks. Assessment of higher order of thinking will be done for at least 30% of marks. There will be 25% of marks assigned for allied subjects [dermatology, psychiatry and respiratory medicine]
Internal assessment will include formative assessment of day to day learning, AETCOM and Logbook assessment.

Practical IA will include clinical end posting exams [EOP], Viva, logbook and record book assessment and formative assessment in day to day learning. Directly observed procedural skills will be included in IA. End of posting exams will be conducted after each clinical posting in general medicine, dermatology, psychiatry and respiratory medicine. The end posting assessment marks will be in proportion to the number of teaching hours allotted for each subject.
EOP assessment is by practical / clinical tests, Objective Structured Clinical Examination (OSCE) / Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), Mini Clinical Evaluation Exercise (mini-CEX), records book maintenance and
attitudinal assessment.

Attitudinal assessment is based on section IV of AETCOM module which is included in the logbooks.

Formative Assessment or day-to-day assessment. It shall relate to different ways in which learners participate in learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/problem solving exercise, participation in project for health care in the community, proficiency in carrying out a practical or a skill in small research project, a written test etc.

Assessment of Log-book. Log book should record all activities like seminar, symposia, quizzes and other academic activities. Achievement of certifiable competencies, logbook documentation skills, DOAP skills, attitudinal assessment should also be recorded in logbooks. It should be assessed regularly and submitted to the department. Up To twenty percent IA marks (Theory and Practical) should be from Log book assessment.

Internal Assessment for Professional development programme (AETCOM) will include:

a. Written tests comprising of short notes and creative writing experiences in each subject.

b. OSCE based clinical scenarios and/or viva voce. Skill competencies acquired during the Professional Development Programme must be tested during the clinical, practical and viva voce in every subject.

Feedback: Results of the internal assessment will be displayed on the notice board within 2 weeks of conducting the assessment. Feedback will be given to learner and remedial measures will be suggested. Record of IA, feedback with students' signature will be maintained by the department for 5 years.

GENERAL MEDICINE

1. GOAL

Our goal is to train the learner to perform as a clinician who is capable of providing preventive, promotive, curative, palliative and holistic care with compassion to patients having common ailments, who can lead and function in a health care team efficiently, who is capable of communicating with patients and their families appropriately, who is committed to continuous self-improvement in skills and knowledge and who is a professional committed, ethical, responsive and accountable to patients, community and profession.

2. OBJECTIVES:

a. KNOWLEDGE

The Indian Medical Graduate after his/her training in the department of General Medicine at SDMCMS&H should be able to demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of diseases and their investigation and management.

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

1. Competently interview and examine an adult patient and make a clinical diagnosis,
2. Appropriately order and interpret laboratory tests,
3. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,
4. Independently perform common medical procedures safely
5. Document his/her observations accurately,
6. Follow up patients with medical problems and refer whenever required,
7. Communicate effectively, educate and counsel the patient and family,
8. Manage common medical emergencies and refer when required,

2.3 ATTITUDE AND COMMUNICATION SKILLS: At the end of the course, the learner shall be able to

1. Respect patient's autonomy
2. Do no harm
3. Understand and follow the principle of beneficence
4. Think and act in a just manner
5. Demonstrate empathy

6. Respect privacy
7. Maintain confidentiality
8. Communicate effectively,
9. Educate and counsel the patient and family,
10. Maintain punctuality
11. Work in a team of peers, seniors and interdepartmental personnel.

2.4 INTEGRATION

At the end of the course, the learner shall be able to form concepts through aligned and integrated learning experiences in order to provide sound biologic basis incorporating the principles of general medicine into a holistic and comprehensive approach to the care of the patient.

3. TEACHING HOURS AND COURSE CONTENT

A. Teaching hours : 25 hrs+60 hrs+as required for AETCOM
B. Large group teaching : 25 hrs
C. Clinical rotations : 60 hrs [4 weeks excluding Saturdays and Sundays]
D. AETCOM : As per module allotted

Sl. No	Teaching Learning Method	No. of Hours
1	Large group teaching	25
2	Clinical rotations	60
3	AETCOM module	As per module allotted
4	Clinical clerkship hours 5-6 pm	On admission days of the unit
	TOTAL	**85+**

iii. THEORY

Course content

SL. NO.	TOPIC/ SYSTEM : (WITH COMPETENCY NUMBER) core/ non-core competency	Teaching hours
	ROLE OF PHYSICIAN (IM 26) CORE	
1	Cardinal principles of medical ethics 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	1

	principle in patient care IM26.7, Describe and discuss the role of justice as a guiding principle in patient care 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 IM26.11 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	
2	Confidentiality, conflicts of interest, medical errors IM26.10 identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care IM26.22 demonstrate ability to maintain confidentiality in patient care IM26.34 to identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts IM26.33, Demonstrate an understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors	1
	NUTRITION AND VITAMIN DEFICIENCIES (IM 23) CORE	
1	Nutrient requirements and dietary assessment IM23.1 Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses	1
2	Protein energy malnutrition IM23.2 Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital	1
3	Vitamin and *trace minerals* IM23.3 Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin	1
4	Approach to a patient requiring Specialized Nutritional Support IM 23.4 Enumerate the indications for enteral and parenteral nutrition in critically ill patients	1

	OBESITY (IM 14) CORE	
1	Disorders of adipose tissue and obesity IM 14.1, Define and measure obesity as it relates to the Indian population IM 14.2 Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes	1
2	Obesity and metabolic syndrome 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 IM14.13. Describe the indications and interpret the results of tests for secondary causes of obesity IM14.14. Describe and enumerate the indications, Pharmacology and side effects of pharmacotherapy for obesity IM14.15. Describe and enumerate the indications and side effects of bariatric surgery	1
	ANEMIA (IM 9) [FEVER AND FEBRILE SYNDROMES IM (4) GI BLEEDING (IM 15)] CORE	
1	Approach to a patient with 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	1
2	Approach to a patient with anemia continued IM9.8. Describe and discuss the various tests for iron deficiency IM9.10. Describe, perform and interpret a peripheral smear and stool occult blood 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	1
3	Share: enumerate and differentiate causes of splenomegaly PA19.6 enumerate and differentiate the causes of splenomegaly	1
4	Principles of blood transfusion IM9.17. Describe the indications for blood transfusion and the	1

	appropriate use of blood components IM15.12 Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion	
5	Principles of appropriate referral [Hemolytic Anemias, Refractory Anemias, Aplastic Anemia, Anemia Of Chronic Disease, Leukemias] IM9.21 determine the need for specialist consultation	1
6	WBC disorders IM4.5. Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	1
7	Clinical and hematological features of bleeding and clotting disorders PA21.3 differentiate platelet from clotting disorders based on the clinical and hematologic features	1
	LIVER DISEASE (IM 5) CORE	
1	Approach to a patient with jaundice, drug induced liver injury, hepatobiliary disorders 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 IM5.7 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	1
2	Viral hepatitis IM5.4 Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis IM5.16. describe and discuss the management of hepatitis IM5.17. enumerate the indications, precautions and counsel patients on vaccination for hepatitis	1
3	Alcoholic liver disease IM5.5. describe and discuss the pathophysiology, clinical evolution of alcoholic liver disease IM5.16 describe and discuss the management of hepatitis [alcoholic]	1

4	Cirrhosis and its complications IM5.6. describe and discuss the pathophysiology, clinical evolution, complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy	1
5	Cirrhosis and its complications IM5.16. describe and discuss the management of cirrhosis, portal hypertension, ascites, spontaneous bacterial peritonitis, hepatic encephalopathy IM5.18 enumerate the indications for hepatic transplantation	1
	GI BLEEDING (IM 15) CORE	
1	Upper and lower gastrointestinal 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 IM15.6. distinguish between upper and lower gastrointestinal bleeding based on the clinical features IM15.9 Choose and interpret diagnostic tests based on clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test. IM15.10. enumerate the indications for endoscopy, colonoscopy, indications for other imaging procedures in the investigation of GI bleeding 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 IM15.14 describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed IM15.16 enumerate the indications for endoscopic interventions and Surgery	1
2	Peptic ulcer disease IM15.15 describe and enumerate the indications Pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	1
	DIARRHEAL DISORDER (IM 16) CORE	
1	Acute diarrhoeal diseases IM16.1. describe and discuss the etiology of acute diarrhea including infectious and non-infectious causes	1

	IM16.2 describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance IM16.11 enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea IM16.6 distinguish between diarrhea and dysentery based on clinical feature IM16.14 Describe and enumerate the indications, general medicine and side effects of pharmacotherapy for bacterial and viral Diarrhea	
2	Malabsorption syndrome, irritable bowel syndrome IM16.1. describe and discuss the etiology of chronic diarrhea including infectious and noninfectious causes IM16.3 describe and discuss the chronic effects of diarrhea including Malabsorption 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, general medicine and side effects of pharmacotherapy for parasitic causes of Diarrhea	1
3	Inflammatory bowel disease IM16.15 distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis IM16.16 describe and enumerate the indications, general medicine and side effects of pharmacotherapy including immunotherapy IM16.17 describe and enumerate the indications for surgery in inflammatory bowel disease	1
total	Core/noncore:- all core competencies	25

iv. Clinical rotations

SL. NO.	**TOPIC OF PRACTICAL : (WITH COMPETENCY NUMBER) Suggested teaching learning method Domain/ level core/non-core**	**Teaching hours**
1st week		
1	**Introduction to medical wards, job responsibilities, grooming, essential equipment, books** IM26.27 demonstrate personal grooming that is adequate and appropriate for health care responsibilities IM26.36 demonstrate ability to balance personal and	3

	professional priorities IM26.37 demonstrate ability to manage time appropriately IM26.23demonstrate a commitment to continued learning IM26.28 demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning IM26.19 Demonstrate ability to work in a team of peers and superiors IM26.24 demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers IM26.32 demonstrate appropriate respect to colleagues in the profession Introductory class, s/sh, core	
2	**General history taking** IM26.20 demonstrate ability to communicate to patients in a patient ,respectful, non-threatening, non-judgmental and empathetic manner IM26.35 demonstrate empathy in patient encounters Bedside clinics, s/sh, core	3
3	**Obtaining informed consent for examination, sequence of general physical examination as per proforma, case sheet writing technique** IM26.16 identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty) Bedside clinics, s/sh, core	3
4	**General physical examination continued** IM26.21 Demonstrate respect to patient privacy IM26.22 Demonstrate ability to maintain confidentiality in patient care Bedside clinics, s/sh, core	3
5	**Case sheet writing** IM26.26 demonstrate ability to maintain required documentation in health care (including correct use of medical records) Bedside clinics, clinical clerkship, s/sh, core	3
2nd week		
6	**History examination differential diagnosis in a case of 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	3

	IM9.4.perform a systematic examination that includes: general examination for pallor, oral examination, hyperdynamic circulation, lymph node and splenic examination IM9.5 generate a differential diagnosis and prioritize based on clinical features that suggest a specific etiology Bedside clinics, s, core	
7	**Examination of a patient with splenomegaly, differentiate the causes of splenomegaly** PA19.6 perform examination of a patient with splenomegaly, differentiate the causes of splenomegaly Bedside clinics, Shared from pathology, s, core	3
8	**Diagnostic workup and interpretation of tests in a case of anemia** Pharmacological treatment of nutritional deficiency anemia, patient education about nutrition and personal hygiene 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 IM9.13 Prescribe replacement therapy with iron, B12, folate IM9.15 Communicate the diagnosis and the treatment appropriately to patients IM9.16 Incorporate patient preferences in the management of anemia IM26.29 communicate diagnostic and therapeutic opitons to patient and family in a simulated environment IM9.20 Communicate and counsel patients with methods to prevent nutritional anemia Bedside clinics And DOAP shared with pathology and microbiology [2] IT Share IM 9.10 with pathology, s, core	3
9	**Bone marrow biopsy** IM9.11. enlist indications of bone marrow aspirations and biopsy and interpret the results IM4.17 [skill lab]Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment DOAP, s, core	3
10	**Observe and assist in blood transfusion** IM9.19 assist in a packed cell transfusion IM15.13 Observe cross matching and blood component [platelets, fresh frozen plasma] transfusion	3

	DOAP, clinical clerkship hour 5-6 pm, s/sh, core	
3rd WEEK		
11	**Clinical history, examination, differential diagnosis of a patient with jaundice** 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 IM5.11 generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom Bedside clinics, s/sh, core	3
12	**Cirrhosis and its complications** IM5.9 Elicit document and present a medical history that helps delineatethe 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 IM5.11 generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom Bedside clinics, s/sh, core	3
13	**Interpretation of LFT and hepatitis serology** IM5.12 Choose and interpret appropriate diagnostic tests including: CBC, serology bilirubin, function tests, Hepatitis serology, 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 PA25.6 Interpret a liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver function tests IM5.13 Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease	3

	DOAP, IT, s/sh, core	
14	**Management of hepatitis and cirrhosis** IM5.16 Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy IM5.17 Enumerate the indications, precautions and counsel patients onvaccination for hepatitis IM5.18 Enumerate the indications for hepatic transplantation **Paracentesis and ascitic fluid analysis** IM5.15 Assist in the performance and interpret the findings of an ascitic fluid analysis Bedside clinics/DOAP, S/ SH, core	3
15	**History, examination, Per rectal examination, DDs, investigation and emergency management of a case of GI bleed** **Communicating the diagnosis and therapeutic options for GI bleed with patient and relatives** IM15.3 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 IM15.8 generate a differentia 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 IM15.18 counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options IM26.29 Communicate diagnostic and therapeutic options to patient and family in a simulated environment IM26.20 Demonstrate ability to communicate to patients in a patient, respectful, non-threatening non-judgemental and	3

	empathetic manner IM26.31 Demonstrate awareness of limitations and seeks help and consultations appropriately IM15.7 Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent Bedside clinics, [clinical clerkship hour 5-6 pm], DOAP, skill training, S/SH, core	
4th WEEK		
16	**Case of diarrhoea** 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 prioritize 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 Bedside clinics admission day-OPD, s/sh, core	3
17	**Replacement of fluids in a patient of diarrhoea** IM16.2 Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance Observation of nasogastric tube insertion and feeding IM23.4 Enumerate the indications for enteral and parenteral nutrition in critically ill patients DOAP, clinical clerkship hour, S/ SH, core	3
18	**Case of malnutrition** 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 Communication and dietary counselling of a case of malnutrition and illness. IM 23.5 counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet using commonly used food guides	3

	Bedside clinics, DOAP, s/c sh, core	
19	**History, examination, differential diagnosis, investigations and case sheet writing for a case of 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 prioritize based on the most likely diagnosis IM14.9 order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc. IM14.12. demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgmental way Communication and counselling a case of obesity. IM14.11 communicate and counsel an obese patient on behavioral, dietary and lifestyle modifications Bedside clinics-OPD DOAP, s/c sh, core	3
20	End posting exams	3

All are core competencies

Note: Content under NONCORE category cannot be assessed in Summative assessments. However, the same can be assessed in Formative assessments.

Suggested distribution of teaching hours			
Sl no	**Topic**	**Large group Interactive lectures**	**Clinical rotations**
		25 hours	**60 hours**
1.	Role of physician (IM26)	2	15
2.	Nutrition and vitamin deficiencies (IM23)	4	3
3.	Obesity (IM 14)	2	3
4.	Anemia (IM 9)	7	15
5.	Liver disease (IM 5)	5	12
6.	Gi bleeding (IM15)	2	3
7.	Diarrheal disorder (IM16)	3	6

8.	End posting exams	-	3
9.	AETCOM	As per the module allotted	-
	Total	25+ AETCOM hours	60

CLINICAL ROTATIONS: 60 HOURS
THEORY- 25 hours
AETCOM- As per the module allotted
NOTE: *The above table containing teaching hours assigned to different topics under large and small group teaching may be used as a guide by the Institute.*

4. CERTIFICATION OF SKILLS:

No certifiable skills for PYII.

5. SCHEME OF EXAMINATION:

A. FORMATIVE ASSESSMENT:

Eligibility criteria:

- Learners must secure at least 50% marks of total marks (combined in theory and practical; not less than 40% marks in theory and practical separately) assigned for internal assessment in general medicine in order to be eligible for appearing at the final University examination.
- Student should get a minimum of 75% attendance in Theory and 80 % in Practical classes to be eligible to appear for university examination.
- Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

THEORY INTERNAL ASSESSMENT:

- A minimum of **2** Internal Assessments (IAs) to be conducted
- Formative assessment marks shall be calculated based on scoring in written tests and AETCOM modules.
- Written exams will include MCQ's[MCQs not exceeding 20%]/Structured Long Essay Questions/Short essay questions/Short Answer questions/Clinical vignette Based Questions.

PRACTICAL INTERNAL ASSESSMENT

- Clinical end posting exams [EOP] will be conducted
- Viva/oral examination should assess approach to clinical context and included in practical IA marks.

The distribution of internal assessment marks shall be as mentioned below:

	THEORY	
Headings	1st Internal assessment 100 marks	2nd Internal assessment 100 marks
Written paper	40	40
Formative assessment by MCQs	05	05
Logbook	-	05
AETCOM	05	-
TOTAL	100	

Practicals:

Sl no.	Skill/topic	Method of assessment	marks
1	Clinical skills	OSCE	35
8	Interpretation skills of laboratory investigations	VIVA	5
Total EOP marks			40
Log book		Documentation skills in logbook and record books Formative attitudinal assessment as per section IV of AETCOM	10
Total marks			50

Blueprinting of question Paper I and Paper II for formative internal assessment is prepared and available with the department

B. SUMMATIVE ASSESSMENT:

Summative assessment will be at the end of 3rd professional year [part 2]

B. SELF DIRECTED LEARNING (SDL)

SDL hours are not allotted to general medicine during 2nd professional year

C. **INTEGRATION:**

- May be conducted in the form of sharing/nesting/correlation using CBL/PBL/ Case study approach and involving various departments concerned while preparing the specific learning objectives of the integration topics.
- Department involved may be chosen according to the topic and may be conducted as Horizontal/ Vertical form of integration as per the MCI CBME document.

Sl. No	Topics / areas of integration Integration plan	Suggested Departments to be involved	
		vertical	horizontal
1	IM 23 Nutritional and Vitamin Deficiencies	Community Medicine, Biochemistry	Pediatrics
2	IM 14 obesity	Biochemistry, Pathology, Community Medicine	nil
3	IM 9 Anemia IM 9.10 perform and interpret a peripheral smear with pathology PA19.6 enumerate and differentiate the causes of splenomegaly with general medicine Vertical integration: PA21.3 differentiate platelet from clotting disorders based on the clinical and hematologic features	Biochemistry, Pathology, Microbiology	Obstetrics
4	IM 5 Liver disease	Biochemistry, Pathology, Microbiology	Surgery Radiology
5	IM15 GI BLEEDING	Anatomy, Physiology, Pathology, Microbiology	Nil
6	IM 16 Diarrhoeal disorder IM 16.9 microscopy of stools for parasites IM 16.10, examination of hanging drop for vibrio cholerae With microbiology	Microbiology, Community Medicine, Pharmacoogy	Nil
7	IM 26 Role of physician	AETCOM, Forensic Medicine	Aetcom

Competency list for integration in DOAP/ skill lab sessions/ small group discussions (log book maintenance, Practical)			
1	IM9.19	Assist in a packed cell transfusion	Blood bank
2	IM5.15.	Assist in the performance of paracentesis and Interpret the findings of an ascitic fluid analysis	pathology
3	IM15.13.1	Observe cross matching	Blood bank
4	IM15.13.2	Observe platelet transfusion	Blood bank
5	IM 15.13.3	Observe transfusion of fresh frozen plasma	Blood bank
	IM23.5.	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet using commonly used food guides	Community medicine
	IM14.11.	Communicate and counsel an obese patient on behavioral, dietary and lifestyle modifications	Community medicine
	IM14.12. IM 26.20	Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgmental way Demonstrate ability to communicate to patients in a patient, respectful, non-threatening, nonjudgmental and empathetic manner	AETCOM
	IM9.10.1	Interpret a peripheral smear	pathology
	IM9.10.2	Perform stool occult blood and interpret	microbiology
	IM9.11.2	Interpret the results of a bone marrow aspirations and biopsy	pathology
	IM9.13	Prescribe replacement therapy with iron, B12, folate	pharmacology
	IM9.15	Communicate the diagnosis and the treatment appropriately to patients	-
	IM9.16 IM 26.29	Incorporate patient preferences in the management of anemia Communicate diagnostic and therapeutic optons to patient and family in a simulated environment	-
	IM5.12	Choose and interpret appropriate diagnostic tests including: CBC, serology bilirubin, function tests, Hepatitis serology, ascitic fluid examination in patient with liver diseases.	Pathology, microbiology

	IM5.17	Enumerate the indications, precautions and counsel patients on vaccination for hepatitis	Microbiology, community medicine
	IM15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent	surgery
	SDM MEDICINE COMPETENCY 1	**NASOGASTRIC TUBE PLACEMENT [MANNEQUIN]**	-
	IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen	microbology
	IM16.10	Identify vibrio cholera in a hanging drop specimen	microbiology

D. RECOMMENDED TEXT BOOKS, REFERENCE BOOKS AND ATLAS

Text Books

Note: A single textbook may not cover the entire curriculum. Referring to more than one book is recommended.

Recent editions of:

Y P Munjal, API Textbook of medicine
Nicki R.C., Brain R.W. Stuart Davidson's Principles & Practice of Medicine,
Praveen Kumar Michal Clark, Clinical Medicine,
Maxine A P Current medical diagnosis and treatment
Washington manual of medical therapeutics
Michael Glyms, Hutchison's clinical methods
Graham D, Macleod's clinical examination
K R Sethuraman, objective structured clinical examination

Reference books

Harrison's principles of medicine
David A Warrell Oxford Textbook of Medicine
Goldman and Cecil, Medicine
Wolters Kluver, interpretation of diagnostic tests

Journals

Journal Of Association Of Physicians Of India

Evidence based medicine source:

UPTODATE

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DERMATOLOGY, VENEREOLOGY & LEPROSY

1. **GOAL**

Broad goal of teaching undergraduate medical students in Dermatology, Sexually transmitted infections and Leprosy is to impart such knowledge and skills that may enable him to diagnose and treat common ailment and to refer rare diseases or complications/ unusual manifestations of common diseases, to the specialist.

2. **OBJECTIVES**

2.1 KNOWLEDGE

The student shall be able to understand the principles of diagnosis of diseases of the skin, hair, nail and mucosa.

2.2 SKILLS

At the end of the postings, the student shall be able to

1. Recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate

2. Syndromically approach to the recognition, diagnosis, prevention, counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities.

3. Recognize and treat emergencies including drug reactions and refer as appropriate

2.3 ATTITUDE AND COMMUNICATION SKILLS

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

1. Communicate with the patient regarding the course, treatment plan and prognosis of the disease.
2. Motivate patients with chronic diseases to adhere to the line of management as outlined by the health care provider.
3. Follow the treatment guidelines and counsel the patient to adhere and comply.
4. Respect patient's privacy.
5. Maintain confidentiality.
6. Work in a healthcare team efficiently while respecting all its members.
7. Continually strive for updating his/her own knowledge and skill.
8. To treat prolonged illnesses with regular follow-up, monitoring, proper counseling and refer to higher centres if required.

2.4 INTEGRATION

The knowledge acquired in dermatology should help the students to understand the biologic basis of diseases of the skin, sexually transmitted diseases and leprosy and it provide an understanding that skin diseases may be a manifestation of systemic disease.

3. TEACHING HOURS AND COURSE CONTENT

A. **Teaching hours** (Theory, Practical, SDL and total)

- Theory- Nil
- Practicals – 30 hours
- SDL – Not allotted

B. Course Content

i) Theory

SL. NO.	TOPIC/ SYSTEM : (WITH COMPETENCY NUMBER) core/ non-core competency	Teaching hours
	No theory topics in MBBS Phase II. Theory to be started in MBBS Phase III/I	NIL

ii) Practical

SL. NO.	TOPIC OF PRACTICAL : (WITH COMPETENCY NUMBER)	Suggested teaching learning method	Do main	Teaching hours
1	DR5.2 Identify and differentiate scabies from other lesions in adults and children	Bedside clinic	SH	3
2	DR6.2 Identify and differentiate pediculosis from other skin lesions in adults and children	Bedside clinic	SH	3
3	DR7.2 Identify Candida species in fungal scrapings and KOH mount	DOAP	SH	3
4	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 DR8.6 Enumerate the indications, describe the procedure and perform a Tzanck smear	DOAP	SH	3

5	DR8.4 Identify and distinguish viral warts from other skin lesions DR8.5 Identify and distinguish molluscum contagiosum from other skin lesions	DOAP	SH	3
6	DR15.1 Identify and distinguish folliculitis impetigo and carbuncle from other skin lesions DR15.2 Identify staphylococcus on a gram stain MI4.3 Describe the etio-pathogenesis of Skin and soft tissue infections and discuss the clinical course, and the laboratory diagnosis. (NESTING)	Bedside clinic	SH	3
7	DR15.4 Enumerate the indications for surgical referral.	DOAP	KH	3
8	DR10.1 Identify and classify syphilis based on the presentation and clinical manifestations. DR10.7 Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	Bedside clinic	SH	3
9	DR10.2 Identify spirochete in a dark ground microscopy DR10.5 Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease. MI7.2 Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures, wherever relevant. (NESTING)	DOAP	SH	3
10	END POSTING EXAMINATION			3

iii) Suggested distribution of theory teaching hours NIL

SL. NO.	Topic	Large group teaching (hours) NOT APPLICABLE	Small group teaching (hours) NOT APPLICABLE	Total teaching (hours) NIL

PRACTICAL: 30 hours
SGT (tutorials, seminars/case based teaching) /Integrated - nil
AETCOM- not alloted

NOTE: *The above table containing teaching hours assigned to different topics under large and small group teaching may be used as a guide by the Institute.*

4. Certification of skills

SL. NO.	Competency Description with Competency number	No. required to certify P
	nil	nil

5. Scheme of examination: FOR II PY

Eligibility criteria: 80% ATTENDENCE, COMPLETION OF RECORD BOOK
Pass criteria: 50% MARKS
Formative Assessment marks: 25 MARKS 3 HRS
PRACTICALS:

END POSTING EXAMINATION+LOGBOOK=25

ASSESSMENT HEADING		**MARKS**
END OF POSTING	CASE PRESENTATION	10
	SPOTTERS	5
	VIVA	5
LOGBOOK	Logbook, record book, formative assessment as per section IV of AETCOM module	5

Summative exams: university summative exams will be held at the end of 3rd PY, PART 2

Dermatology is an allied subject of general medicine. Hence the marks will be included under the heading general medicine and allied subjects.

6. Self-directed learning: hours are not allotted

7. Integrated Teaching

Sl. No	**Topics / areas of integration**	**Suggested Departments to be involved**	
		Vertical	**Horizontal**
1	DR5.2 Identify and differentiate scabies from other lesions in adults and children	----	pediatrics

2	DR6.2 Identify and differentiate pediculosis from other skin lesions in adults and children	----	pediatrics
3	DR7.2 Identify Candida species in fungal scrapings and KOH mount	Microbiology	----
4	Viral infections	-----	----
5	DR15.2 Identify staphylococcus on a gram stain	Microbiology	----
6	DR10.2 Identify spirochete in a dark ground microscopy DR10.5 Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease.	Microbiology	General medicine

8. Recommended Text and Reference books, Journals and Atlases with editions

Recommended Books

1. Skin disease and STI's –Uday Khopkar -7th edition
2. Skin disease diagnosis and treatment –Habif -2nd edition
3. Common skin disease –Roxburgh's -17th edition
4. Andrew's diseases of the skin ,clinical dermatology -13th edition
5. Handbook of leprosy –WH Jopling and C Mcdougall -5th edition
6. Illustrated synopsis of dermatology and STD – Neena khanna – 6th edition
7. Concise textbook of Dermat ology by IADVL for UGs – 2nd edition
8. Fitzpatrick's color atlas and synopsis of clinical dermatology -8th edition
9. Textbook of Dermatology ,Venerology and Leprosy – DM Thappa – 4th edition
10. Illustrated text book of dermatology –JS Pasricha and Ramji gupta – 4th edition
11. Text book of clinical dermatology – Virendra N Sehgal – 5th edition
12. An introduction to Dermatology ,STD and Leprosy-AK Bajaj and Rajeev sharma – 1st edition

Reference Books

1. Rook's text book of Dermatology – 9th edition
2. Fitzpatricks Dermatology -9th edition
3. Textbook of Dermatology – Jean L Bolognia -4th edition
4. Andrew's diseases of skin – 12th edition
5. IADVL Textbook of Dermatology -4th edition
6. IAL Textbook of Leprosy -2nd edition
7. Sexually Transmitted Diseases – King K Homes – 4th edition

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PSYCHIATRY

1. **GOAL** To Promote Mental Health And Mental Hygiene

2. OBJECTIVES

2.1 KNOWLEDGE

Knowledge of etiology (bio-psycho-social-environmental interactions), clinical features, diagnosis and management of common psychiatric disorders across all ages,

2.2 SKILLS

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

1. Recognize and manage common psychological and psychiatric disorders in a primary care setting, institute preliminary treatment in disorders difficult to manage, and refer appropriately,
2. Recognize alcohol/ substance abuse disorders and refer them to appropriate centers,
3. Assess risk for suicide and refer appropriately
4. Recognize temperamental difficulties and personality disorders
5. Assess mental disability and rehabilitate appropriately
6. Understand national and state programs that address mental health and welfare of patients and community.

2.3 ATTITUDE AND COMMUNICATION SKILLS

At the end of the course, the learner shall be able to

1. Respect patient's autonomy
2. Do no harm
3. Understand and follow the principle of beneficence
4. Think and act in a just manner
5. Demonstrate empathy,
6. Respect privacy
7. Maintain confidentiality
8. Communicate effectively,
9. Educate and counsel the patient and family,
10. Maintain punctuality
11. Work in a team of peers, seniors and interdepartmental personnel.

2.4 INTEGRATION:

The teaching should be aligned and integrated horizontally and vertically in order to allow the students to recognize diagnose and treat TB in the context of society, national health priorities, drug resistance and comorbid conditions like HIV.

- Doctor patient relationship
- Psychotic Disorders

3 TEACHING HOURS AND COURSE CONTENT

Teaching hours : 30 hrs
THEORY: NIL CLINICAL POSTINGS: 30 HOURS [2 WEEKS]

Course contents
THEORY- NIL
PRACTICAL

SL. NO.	TOPIC OF PRACTICAL : (WITH COMPETENCY NUMBER)	Suggested teaching learning method	Domain/ level	Teaching hours
1.	**Doctor patient relationship:-** PS 1.1, 1.3, 1.4	Bedside clinic/DOAP	SH	3 HRS
2	**Introduction to psychiatry:-** PS 3.3, 3.4, 3.5	Bedside clinic/DOAP	SH	3 HRS
3	**Psychotic disorders:-**PS 4.2, 4.3, 4.5, [Substance Abuse Disorders]	Bedside clinic/DOAP	SH	3 HRS
4	**Psychotic disorders:-** PS 5.2, 5.4	Bedside clinic/DOAP	SH	3 HRS
5	**Depression:-**PS 6.2, 6.3, 6.5	Bedside clinic/DOAP	SH	3 HRS
6	**Bipolar disorders:-**PS 7.2, 7.3, 7.5	Bedside clinic/DOAP	SH	3HRS
7	**Stress related disorders:-**PS 9.2, 9.3, 9.5	Bedside clinic/DOAP	SH	3HRS
8	**Anxiety disorders:-**PS 8.2, 8.3, 8.5	Bedside clinic/DOAP	SH	3HRS
9	**Somatoform disorders:-**PS 10.2, 10.3, 10.5	Bedside clinic/DOAP	SH	3HRS
10	**End posting exams**			3 HRS

SUGGESTED DISTRIBUTION OF THEORY TEACHING HOURS

SL NO	TOPIC	Large group teaching (hours) **NOT APPLICABLE**	Small group teaching hours) **NOT APPLICABLE**	Total teaching (hours) **NIL**

4. **CERTIFICATION OF SKILLS - NIL**
5. **SCHEME OF EXAMINATION**

- Attendence: 80%
- Pass criteria: obtaining 50% marks
- Eligibility for exams: 80% attendance in bedside clinics and completion of log and record books
- Formative assessment marks: 25 MARKS
- Weightage : 9 topics equal weightage
- Exam pattern: clinical end posting exams + LOGBOOK

Formative Assessment marks: 25 MARKS 3 HRS
PRACTICALS:
END POSTING EXAMINATION+LOGBOOK=25

ASSESSMENT HEADING		**MARKS**
END OF POSTING	**3 OSCE stations**	15
	VIVA	5
LOGBOOK	Logbook, record book, formative assessment as per section IV of AETCOM module	5

Summative exams: university summative exams will be held at the end of 3rd PY, PART 2
Psychiatry is an allied subject of general medicine. Hence the marks will be included under the heading general medicine

6. **SELF DIRECTED LEARNING:** no self-directed learning hours for this year

7. **INTEGRATED TEACHING**

Sl. No	Topics / areas of integration	Suggested Departments to be involved	
		Vertical	Horizontal
1	Doctor Patient relationship:- PS 1.1, 1.3, 1.4	Aetcom Forensic medicine	General medicine
2	Psychotic disorders:-PS 4.2, 4.3, 4.5, [Substance Abuse Disorders]	Forensic medicine	General medicine

Recommended text and reference books, journals and atlases with editions

1. Kaplan and Sadock's Synopsis of Psychiatry – 11th edition
2. A Short text book of Psychiatry. Niraj Ahuja – 7th edition

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RESPIRATORY MEDICINE

1. GOAL

Our department intends to train the MBBS students to be competent in diagnosis and management of obstructive airway disease and Tuberculosis.

2. OBJECTIVES

2.1 KNOWLEDGE

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

1. Define, discuss and approach respiratory symptoms like cough, shortness of breath , haemoptysis and generate differential diagnosis based on the clinical history.
2. Describe, select, and interpret diagnostic tests based on the clinical presentation.
3. Discuss the epidemiology, clinical manifestations, diagnosis and management of tuberculosis.
4. Describe and discuss the epidemiology, the predisposing factors and therapeutic factors that determine resistance to drugs.
5. Discuss the pharmacology, contraindications, interactions and adverse reactions of anti-tubercular drugs.
6. Define, classify and discuss the epidemiology, clinical manifestations, diagnosis and management of obstructive airway disease.
7. Differentiate between asthma and COPD, describe the severity and risk factors associated with exacerbation of obstructive airway disease.
8. Discuss and describe the impact of OAD on the society and workplace preventive measures to reduce OAD in workplaces.

2.2 SKILLS

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

1. Elicit, document and present an appropriate medical history that includes respiratory symptoms, risk factors.
2. Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes general and systemic examination.
3. Perform and interpret important diagnostic tests like AFB smear, pulmonary function test, peak expiratory flow rate, CXR, mantoux test.
4. Demonstrate and counsel patient on the correct use of inhalers.

2.3 ATTITUDE AND COMMUNICATION SKILLS

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

1. counsel patients appropriately on smoking cessation, compliance with medications and the correct use of inhalers
2. Communicate diagnosis, treatment plan and subsequent follow up plan to patients

2.4 INTEGRATION:

The teaching should be aligned and integrated horizontally and vertically in order to allow the students to recognize diagnose and treat TB in the context of society, national health priorities, drug resistance and comorbid conditions like HIV.

3. TEACHING HOURS AND COURSE CONTENT

Teaching hours : 30 hrs
Theory teaching: nil
Clinical posting 30 hours [2 weeks]

Course contents
THEORY- NIL
PRACTICAL

SL NO	TOPIC OF PRACTICAL : COMPETENCY NUMBER	SUGGESTED TEACHING LEARNING METHOD	DOMAIN/ LEVEL	TEACHING HOURS
1	**CORE:** Elicit, document and present an appropriate medical history that includes risk factor, contacts, and symptoms including cough and fever and other manifestations. **CT-1.5**	Bedside	S/SH	3
2	**CORE:** 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. **CT-1.6**	Bedside	S/SH K/K	3

	CORE: Generate a differential diagnosis based on the clinical history and evolution of the disease that prioritizes the most likely diagnosis**. CT1.8**			
3	**CORE:** Perform and interpret an AFB stain [GENERAL MEDICINE IM4.14 Perform and interpret a sputum AFB and pediatrics competency PE34.11 Perform AFB staining shared] **CT1.10** **CORE:** Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test [shared with pediatrics pe34.7 interpret a mantoux test] **CT-1.7**	DOAP DOAP	S/P S/P	3
4	**CORE:** 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**. CT-1.9** **CORE:**Describe the appropriate diagnostic work up based on the presumed aetiology. **CT-2.13** **CORE:** Enumerate the indications for and interpret the results of: pulse oximetry, ABG, Chest Radiograph. **CT-2.14**	DOAP SMALL GD	K/K S/SH K/SH	3
5	**CORE:** Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration **CT-1.11**	SKILL ASSESSMENT	S/SH	3
6	**CORE:** 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).**CT-1.15** **CORE:** Describe the appropriate	Bedside clinic DOAP	K/SH K/KH	3

	precautions, screening, testing and indications for chemoprophylaxis for contacts and exposed health care **workers. CT-1.16** **CORE:** Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program. **CT-1.18** **CORE:** Communicate with patients and family in an Empathetic manner about the diagnosis, therapy. **CT-1.19**		C/SH	
7	**CORE:** Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants.**CT-2.8** **CORE:** 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**. CT-2.9** **CORE:** Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology. **CT-2.10**	Bedside clinic	S/SH S/SH S/SH	3
8	**CORE:** Describe, discuss and interpret pulmonary Function tests**. CT-2.11** **CORE:** Perform and interpret peak expiratory flow rate. **CT-2.12**	DOAP/ CERTIFIABLE SKILL	S/SH S/P	3
9	**CORE:-** Develop a management plan for acute Exacerbations including bronchodilators, systemic steroids, antimicrobial therapy CT2.19 Demonstrate and counsel patient on the correct use of inhalers. **CT-2.22**	BEDSIDE CLINICS/DOAP	K/SH S/C/SH K/C/SH A/KH A/KH	3

	CORE:-Communicate diagnosis treatment plan and subsequent follow up plan to patients. **CT-2.23** **CORE:-**Demonstrate an understanding of patient's inability to change working, living and environmental factors that influence progression of airway disease. **CT-2.27** **CORE:-**Demonstrate an understanding for the difficulties faced by patients during smoking cessation. **CT-2.28**			
10	END POSTING EXAMS			3

SUGGESTED DISTRIBUTION OF THEORY TEACHING HOURS

SL NO	TOPIC	Large group teaching (hours) **NOT APPLICABLE**	Small group teaching (hours) **NOT APPLICABLE**	Total teaching hours **NIL**

4. CERTIFICATION OF SKILLS

SL NO	**Competency Description with Competency number**	**No. required to certify P**
1	CT 1.10 Perform & interpret AFB staining	1
2	CT 2.12 Perform & interpret PEFR	3

5. SCHEME OF EXAMINATION

- **Eligibility criteria:** 80% attendance, completion of certifiable competencies, logbook and record book completion,
- **Pass criteria:** obtaining at least 50% of marks
- **Formative Assessment marks:** MARKS

Formative Assessment marks: 25 MARKS 3 HRS

PRACTICALS:

END POSTING EXAMINATION+LOGBOOK=25

ASSESSMENT HEADING		**MARKS**
END OF POSTING	**CASE PRESENTATION [3]**	**15**
	VIVA	**5**
LOGBOOK	Logbook, record book, formative assessment as per section IV of AETCOM module	**5**

Summative exams: university summative exams will be held at the end of 3rd PY, PART 2

Respiratory Medicine is an allied subject of general medicine. Hence the marks will be included under the heading general medicine

6. **SELF DIRECTED LEARNING: hours not allotted**
7. **INTEGRATED TEACHING**

SL NO	Topics / areas of integration	Suggested Departments to be involved	
1	**CT1.10** Perform and interpret an AFB stain **CT1.7** Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test	MICROBIOLOY COMMUNITY MEDICINE	GENERAL MEDICINE **IM4.14** Perform and interpret a sputum AFB PEDIATRICS **PE34.11** Perform AFB staining [SHARED WITH PEDIATRICS **PE34.7** Interpret a Mantoux test]

8. **RECOMMENDED TEXT AND REFERENCE BOOKS, JOURNALS AND ATLASES WITH EDITIONS**
    1. Macleod's Clinical Examination, 14th Edition
    2. Hutchison's Clinical Methods, 24th Edition
    3. Davidson's Principles and Practice of Medicine, 23rd Edition
    4. Technical and Operational Guidelines for TB Control in India 2016
    5. Tuberculosis by S.K.Sharma, 2nd edition

GENERAL SURGERY

1. GOALS :

- To groom a professional doctor who is ethically guided, clinically sound, skilful, empathetic, oriented towards the needs of the community, an inspiring leader and a good communicator.
- To stimulate the interest of the learner towards surgical diseases and to make him/her understand the concepts as well as be able to apply them in clinical setting.
- To hone the skills of the learner so as to gradually upgrade the knowledge of science into the fine art of surgery.

2. OBJECTIVES

- **Knowledge :**

- 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,
- Ability to recognize, resuscitate, 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.

- **Skill :**

- Ability to obtain a thorough history from the patient,
- To perform a complete general physical examination of the patient,
- To perform local and systemic examination in a surgical patient.
- Ability to write a detailed and accurate case sheet (Case record).

- **Integration :**

- To deliver teaching that is 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.

3. TEACHING HOURS

- **Theory :** 25 hours
- **Practical :** 60 hours
- **SDL :** None
- **Total :** 85hours

4. COURSE CONTENT :

- **Theory:**

1. METABOLIC RESPONSE TO INJURY		
SU1.1	Describe Basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.	1 hour
SU1.2	Describe the factors that affect the metabolic response to injury.	
SU1.3	Describe basic concepts of perioperative care.	
2. NUTRITION AND FLUID THERAPY		
SU12.1	Enumerate the causes and consequences of malnutrition in the surgical patient	2 Hours
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	
3. PRNCIPLES OF BLOOD TRANSFUSION		
SU3.1	Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion.	1 hour
4. INVESTIGATION AND PREOPERATIVE MANGEMENT OF A SURGICAL PATIENT		
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	1 hour
SU9.2	Biological basis for early detection of cancer and multidisciplinary approach in management of cancer	
SU10.1	Describe the principles of perioperative management of common surgical procedures	
SU10.2	Describe the steps and obtain informed consent in a simulated environment	
5. SHOCK		
SU2.1	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring.	2 hours
SU2.2	Describe the clinical features of shock and its appropriate treatment.	

6. CLASSIFICATION OF WOUNDS WOUND HEALING AND WOUND CARE		
SU17.7	Describe the clinical features of soft tissue injuries. Chose appropriate investigations and discuss the principles of management.	2hours
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	
7. BURNS		
SU4.1	Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns.	2 hours
SU4.2	Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.	
SU4.3	Discuss the Medicolegal aspects in burn injuries.	
8. ASEPSIS, STERILIZATION & DISINFECTION		
SU14.1	Describe Aseptic techniques, sterilization and disinfection.	1 hour
9. SURGICAL SITE INFECTIONS		
SU6.1	Define and describe the aetiology and pathogenesis of surgical Infections	1 hour
SU6.2	Enumerate Prophylactic and therapeutic antibiotics Plan appropriate management	
10. SKIN & SUBCUTANEOUS INFECTIONS		
SU18.1	Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections.	2 hours
	Tetanus, Gas gangrene and Rabies	
11. SKIN TUMORS		
SU18.2	Classify skin tumors Differentiate different skin tumors and discuss their management.	1 hour
12. PERIPHERAL VASCULAR DISEASE		
SU27.1	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.	2 hours
SU27.3	Describe clinical features, investigations and principles of management of vasospastic disorders	
SU27.4	Describe the types of gangrene and principles of amputation	
13. VARICOSE VEINS & DVT		
SU27.5	Describe the applied anatomy of venous system of lower limb	3 hours
SU27.6	Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins	

14. LYMPHOEDEMA, LYMPHANGITIS, LYMPHADENITIS AND LYMPHOMA		
SU27.7	Describe pathophysiology, clinical features, investigations and principles of management of Lymph edema, lymphangitis and Lymphomas	2 hours
	Chronic lymphadenitis / Tubercular lymphadenitis	1 hour
15. ETHICS IN SURGERY		
SU8.1	Describe the principles of Ethics as it pertains to General Surgery	1 hour

- **Bedside clinics / Practical:**

1. EXAMINATION OF AN ULCER		
SU5.2	**<u>Bedside Clinics / DOAP session:</u>** Elicit, document and present a history in a patient presenting with wounds.	**To certify in MBBS professional year 2**
2. EXAMINATION OF A SWELLING		
SU18.3	**<u>Bedside Clinics / DOAP session:</u>** Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.	**To certify in MBBS professional year 2**
3. EXAMINATION OF A CASE OF PERIPHERAL VASCULAR DISEASE		
SU27.2	**<u>Bedside Clinics / DOAP session:</u>** Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	To certify in MBBS professional year 3
4. EXAMINATION OF A CASE OF VARICOSE VEINS		
SU27.2	**<u>Bedside Clinics / DOAP session:</u>** Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	To certify in MBBS professional year 3
5. EXAMINATION OF THE LYMPHATIC SYSTEM		
SU27.8	**<u>Bedside Clinics / DOAP session:</u>** Demonstrate the correct examination of the lymphatic system	To certify in MBBS professional year 3
6. EXAMINATION OF A CASE OF HERNIA		
SU28.2	**<u>Bedside Clinics / DOAP session:</u>**	To certify in

	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.	MBBS professional year 3
7. EXAMINATION OF A CASE OF SCROTAL SWELLING		
SU30.5	**Bedside Clinics / DOAP session:** Describe the applied anatomy, clinical features, investigations and principles of management of Hydrocele	To certify in MBBS professional year 3
SU30.6	Describe classification, clinical features, investigations and principles of management of tumours of testis	
8. BLOOD TRANSFUSION : WARD OBSERVATION		
SU3.2	**DOAP / Small Group Discussion** Observe blood transfusions	**To certify in MBBS professional year 2**
9. ATTITUDE ETHICS & COMMUNICATION		
SU2.3	**DOAP / Role-play / Small Group Discussion** Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care	**To certify in MBBS professional year 2**
SU3.3	**DOAP / Role-play / Small Group Discussion** Counsel patients and family/ friends for blood transfusion and blood donation	**To certify in MBBS professional year 2**
10. SKILL LAB DEMONSTRATIONS		
SU11.3	**Airway** Demonstrate maintenance of an airway in a mannequin or equivalent	**To certify in MBBS professional year 2**
SU17.2	**BLS** Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	**To certify in MBBS professional year 2**

5. Certification of skills :

- As per above table
- Certification to be done in logbook soon after the completion of the session

6. Scheme of theory examination :

- Formative assessment: Two internal assessment tests.

- 1st test held in month of February 2021.
- 2nd test held in month of April 2021.
- Both tests will be of 50 mark each.
- Both tests will carry equal weightage
- Marks division of each test.

THEORY INTERNAL ASSESSMENT **Marks distribution**			
Type of question	**Number**	**Marks allotted to each question**	**Total marks**
MCQ	10	01 marks	10 marks
Long Essay	01	10 marks	10 marks
Short Essay	03	05 marks	15 marks
Short Answer	05	03 marks	15 marks
			50 Marks

7. Blueprinting of question paper :

- Not applicable for internal assessment
- However the syllabus for each test will be notified at least 15 days prior to each test.

8. Practical / Clinical examination :

- Clinical assessment of each student will be carried out at the end of his/her clinical posting.
- At the end of the scheduled 4 week clinical posting in surgery the student will have to undergo an OSCE (Objective Structured Clinical Examination).
- This OSCE examination will NOT be conducted unit wise, instead all the students in department of Surgery will be pooled together and examination conducted as below,

CLINICAL / PRACTICAL INTERNAL ASSESSMENT **Marks distribution**			
Type of station in OSCE	**Number**	**Marks allotted to each station**	**Total marks**
Anatomy spotters	05	2 marks	10 marks
Clinical photograph spotters	05	2 marks	10 marks
History taking stations	02	10 marks	20 marks
Clinical examination stations	01	10 marks	10 marks
			50 marks

9. Integrated teaching : As per schedule of the subjects of Professional Year 2

10. Recommended books :

THEORY	PRACTICAL
Bailey & Love's Short Practice of Surgery 27th edition Authors : Norman Williams, P Ronan O'Connell	A Manual On Clinical Surgery 13th edition Author : S Das
Manipal Manual of Surgery 5th edition Author : Dr. K. RajgopalShenoy	Manipal Manual of Clinical Methods in Surgery: Differential Diagnosis and Clinical Discussion 1st edition Author : Dr. AnithaShenoy and Dr. K. RajgopalShenoy
SRB's Manual of Surgery 6th edition Author : Dr. Sri Ram Bhat	SRB's Clinical Methods in Surgery 3rd edition Author : Dr. Sri Ram Bhat
Sabiston Textbook Of Surgery, The Biological Basis Of Surgical Practice 20th edition Authors : R. Daniel Beauchamp MD, B. Mark Evers MD, Kenneth L. Mattox MD	Hamilton Bailey s Demonstrations of Physical Signs in Clinical Surgery 19th edition Authors : Lumley
Schwartz's Principles of Surgery 10th edition Authors : F. Charles Brunicardi, Dana K. Andersen, Timothy R. Billiar, David L. Dunn	Bedside Clinics in Surgery 3rd edition Makhan Lal Saha
A Textbook On Surgical Short Cases By Das Author: S. Das Edition: 5th	Browse's Introduction to the Symptoms & Signs of Surgical Disease Edition ; 5 Kevin G. Burnand ,John Black ,Steven A. Corbett , William E.G. Thomas

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DEPARTMENT OF OBSTETRICS & GYNAECOLOGY

SDM COLLEGE OF MEDICALSCIENCES AND HOSPITAL, DHARWAD

COURSE CURRICULUM

(MBBS, Professional Year 2)

1. Departmental goals:

- To groom a professional doctor who is ethically guided, clinically sound, skilful, empathetic, oriented towards the needs of the community, an inspiring leader and a good communicator.
- To stimulate the interest of the learner towards Obstetrics and Gynaecology and make him/her understand the concepts as well as be able to apply them in clinical setting.
- To hone the skills of the learner so as to gradually upgrade the knowledge of science into the fine art of surgery.

2. Objectives

a. Knowledge:

- Understanding of the physiology of pregnancy, principles of diagnosis and management of Obstetric complications.
- Ability to choose, calculate and administer appropriately intravenous fluids, common drugs in pregnancy and labour, 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,
- Ability to recognize, resuscitate, stabilize and provide Basic & Advanced Life Support to women during pregnancy and child birth.
- Ability to administer informed consent and counsel patient prior to surgical procedures in Obstetrics and Gynaecology, and to patients in Obstetric shock.
- Commitment to advancement of quality and patient safety in surgical practice.

b. Skill:

- Ability to obtain a thorough history from the patient,
- To perform a complete general physical examination of the patient,
- To perform Obstetric examination in a pregnant woman and gynaecological examination in a non-pregnant women.
- Ability to write a detailed and accurate case sheet (Case record).

c. Integration:

- To deliver teaching that is aligned and integrated horizontally and vertically in order to provide a sound biologic basis and a holistic approach to the care of the pregnant and non-pregnant women.

3. Teaching hours

a. **Theory:** 25 hours
b. **Practical :** 60 hours
c. **SDL :** None
d. **Total :** 85hours

SL. NO. 4	**TOPIC/ SYSTEM: (WITH COMPETENCY NUMBER) core/ non-core competency**	**Teaching hours 25 HOURS**		
	Topic	**Large group teaching**	**Small group teaching**	**Total teaching**
		HOURS		
1	OG 1.**1 DEMOGRAPHIC AND VITAL STATISTICS** Define and discuss birth rate maternal mortality and morbidity	Lecture,		1 hour 1.1,1.2,1.3
	OG 1.2 Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and morbidity audit	Lecture,		
	OG 1.3 Define and discuss still birth and abortion	Lecture,		
2	OG 2.**1 ANATOMY OF THE FEMALE REPRODUCTIVE TRACT** 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.	Lecture,		1 hour

3	OG 3.1 **PHYSIOLOGY OF CONCEPTION** Describe the physiology of ovulation, menstruation, fertilization, implantation and gametogenesis.	Lecture,		1 hour
4	OG 4.1 **DEVELOPMENT OF THE FETUS AND THE PLACENTA** Describe and discuss the basic embryology of fetus, factors influencing fetal growth and development, anatomy and physiology of placenta, and teratogenesis	Lecture,		1 hour
5	OG 6.1 **DIAGNOSIS OF PREGNANCY** Describe, discuss and demonstrate the clinical features of pregnancy, derive and discuss its differential diagnosis, elaborate the principles underlying and interpret pregnancy tests.	Lecture		1 hour
6	OG 7.1 **MATERNAL CHANGES IN PREGNANCY** Describe and discuss the changes in the genital tract, cardiovascular system, respiratory, haematology, renal and gastrointestinal system in pregnancy	Lecture		1 hour
7	OG 8.1 **ANTENATAL CARE** Enumerate, describe and discuss the objectives of antenatal care, assessment of period of gestation; screening for high-risk factors.	Lecture		2 hours 8.1,8.2,8.7,8.8
	OG 8.2 Elicit document and present an obstetric history including menstrual history, last menstrual period, previous obstetric history, comorbid conditions, past medical history and surgical history	Lecture		

8	OG 8.7 Enumerate the indications for and types of vaccination in pregnancy	Lecture		
	OG 8.8 Enumerate the indications and describe the investigations including the use of ultrasound in the initial assessment and monitoring in pregnancy	Lecture		
	GYNAECOLOGY			
	Topic	**Large group teaching**	**Small group teaching**	**Total teaching**
		HOURS		
1	OG 24.1 **ABNORMAL UTERINE BLEEDING** Define, classify and discuss abnormal uterine bleeding, its aetiology, clinical features, investigations, diagnosis and management	Lecture		1 hour
	OG 25-1 **AMENORRHOEA** Describe and discuss the causes of primary and secondary amenorrhea, its investigation and the principles of management.	Lecture,		1 hour
	OG 22.1 **VAGINAL DISCHARGE** Describe the clinical characteristics of physiological vaginal discharge.	Lecture		1 hour 22.1 22.2
2	OG 22.2 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	Lecture,		
3	OG 28.1 **INFERTILITY** Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis;	Lecture,		1 hour

	investigations; principles of management of infertility – methods of tubal patency, ovulation induction, assisted reproductive techniques			
4	OG 26.1 **GENITAL INJURIES AND FISTULAE** Describe and discuss the etiopathogenesis, clinical features; investigation and implications on health and fertility and management of endometriosis and adenomyosis	Lecture		1 hour
5	OG26.2 Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae	Lecture		1 hour
6	OG 27.1 **GENITAL INFECTIONS** Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of sexually transmitted infections	Lecture,		1 hour 27.1 27.2 27.3
7	OG 27.2 Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of genital tuberculosis	Lecture,		
	OG27.3 Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of HIV	Lecture,		
8	OG31.1 **UTERINE PROLAPSE** Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus	Lecture		1 hour
	OG 29.1 **UTERINE FIBROIDS** Describe and discuss the etiology;	Lecture,		1 hour

	pathology; clinical features; differential diagnosis; investigations; principles of management, complications of fibroid uterus			
	OG 33.**2** **BENIGN,PREMALIGNANT,MALIGNANT LESIONS OF THE CERVIX** Describe the principles of management including surgery and radiotherapy of Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix	Lecture		1 hour 33.2 33.4
	OG 33.4 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	Lecture		
	OG 33.1 Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer	Lecture		1 hour
	OG 34.1 **BENIGN AND MALIGNANT LESIONS OF THE UTERUS AND OVARIES** Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer	Lecture		1 hour
	OG 34.2 Describe and discuss the etiology, pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principal of management including staging laparotomy	Lecture		1 hour

SL. NO.	TOPIC OF PRACTICAL : (WITH COMPETENCY NUMBER)	Suggested teaching learning method	Domain / level	Teaching hours
1	OG5.1 **PRECONCEPTION COUNSELLING** Describe, discuss and identify pre-existing medical disorders and discuss their management; discuss evidence-based intrapartum care	Bedside Clinics	K/S Core-Y	SL NO 1-5 =2 Hours
2.	OG5.2 Determine maternal high risk factors and verify immunization status	Bedside Clinics	K/S Core-Y	
3	OG8.3 **ANTENATAL CARE** Describe, demonstrate, document and perform an obstetrical examination including a general and abdominal examination and clinical monitoring of maternal and fetal well-being;	Bedside Clinics	K/S Core-Y	
4	OG8.4 Describe and demonstrate clinical monitoring of maternal and fetal well-being	Bedside Clinics	K/S Core-Y	
5	OG8.6 Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy	Bedside Clinics	K/S Core-Y	
6	OG10.1 **ANTEPARTUM HAEMORRHAGE** Define, classify and describe the aetiology, pathogenesis, clinical features, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy	Bedside Clinics	K Core-Y	2 hours
7	OG11.1 **MULTIPLE PREGNANCIES** Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies	Bedside Clinics	K Core-Y	2 hours
8	OG12.1 **MEDICAL DISORDERS IN PREGNANCY** Define, classify and describe the etiology and pathophysiology,	Bedside Clinics	K Core-Y	2 hours

	early detection, investigations; principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.			
9	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	Bedside Clinics	K Core-Y	2 hours
10	OG12.3 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 diabetes in pregnancy	Bedside Clinics	K Core-y	2 hours
11	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	Bedside Clinics	K Core-Y	2 hours
12	OG12.8 Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of isoimmunization in pregnancy	Bedside Clinics	K Core-Y	2 hours
13	OG13.2 LABOUR Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy	Bedside Clinics	K Core-Y	2 hours
14	OG14.1 **MATERNAL PELVIS** Enumerate and discuss the diameters of maternal pelvis and types	Bedside Clinics, DOAP session, Small group discussion	K Core-Y	2 hours
15	OG16.3 IUGR Describe and discuss causes, clinical	Bedside Clinics	K/S Core-Y	2 hours

	features, diagnosis, investigations; monitoring of fetal well-being, including ultrasound and fetal Doppler; principles of management; prevention and counselling in intrauterine growth retardation			
16	OG19.1 **NORMAL AND ABNORMAL PUERPERIUM** Describe and discuss the physiology of puerperium, its complications, diagnosis and management; counselling for contraception, puerperal sterilization	Bedside Clinics	K Core-Y	2 hours
17	OG21.1 **CONTRACEPTION** Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including Ocps, male contraception, emergency contraception and IUCD	Bedside Clinics	K Core-Y	2 hours
18	OG22.2 **VAGINAL DISCHARGE** 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	Bedside Clinics	K Core-Y	2 hours
19	OG24.1 **ABNORMAL BLEEDING** Define, classify and discuss abnormal uterine bleeding, its aetiology, clinical features, investigations, diagnosis and management	Bedside Clinics	K Core-Y	2 hours
20	OG29.1 **UTERINE FIBROIDS** Describe and discuss the etiology; pathology; clinical features; differential diagnosis; investigations; principles of management, complications of fibroid uterus	Bedside Clinics	K Core-Y	2 hours

21	OG31.1 **UTERINE PROLAPSE** Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus	Bedside Clinics	K Core-Y	2 hours
22	OG32.2 MENOPAUSE Enumerate the causes of postmenopausal bleeding and describe its management	Bedside Clinics	K Core-Y	1 hour
23	OG33.1 **BENIGN, PREMALIGNANT, MALIGNANT LESIONS OF THE CERVIX** Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer	Bedside Clinics	K Core-Y	SL NO 24,25, 26 =2 hours
24	OG33.2 Describe the principles of management including surgery and radiotherapy of Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix	Bedside Clinics	K Core-Y	
25	OG34.1 **BENIGN & MALIGNANT LESIONS OF THE UTERUS AND OVARIES** Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer		K Core-Y	
26	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	Bedside Clinics, Intraoperative	K Core -Y	1 hour
27	OG28.1 Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis;	Bedside Clinics	K Core-Y	SL NO 27,28, 29,30

	investigations; principles of management of infertility – methods of tubal patency, ovulation induction, assisted reproductive techniques			=2 hours
28	OG28.2 Enumerate the assessment and restoration of tubal patency	Bedside Clinics	K Core-N	
29	OG28.3 Describe the principles of ovulation induction	Bedside Clinics	K Core-Y	
30	OG28.4 Enumerate the various Assisted Reproduction Techniques	Bedside Clinics	K Core-N	
1.	OG35.1 **OBSTETRICS AND GYNECOLOGICAL SKILLS & WARD OBSERVATIONS** Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (perrectal and per-vaginal) K	Bedside Clinics	K/S Core-Y	SL NO 1,2,3,4 =2 hours
2	OG35.2 Arrive at a logical provisional diagnosis after examination.	Bedside Clinics	K/S Core-Y	
3	OG35.3 Recognize situations, which call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment	Bedside Clinics	K/S Core-Y	
4	OG35.6 Demonstrate ethical behaviour in all aspects of medical practice	Bedside Clinics	A/C Core-Y	
	OT			
5	OG9.2 **COMPLICATIONS IN EARLY PREGNANCY** Describe the steps and observe/ assist in the performance of an MTP evacuation	Bedside Clinics, Intraoperative	K Core-Y	
6	OG15.1 **OPERATIVE OBSTETRICS** Enumerate and describe the indications and steps of common obstetric procedures, technique and complications: Episiotomy, vacuum extraction; low forceps; Caesarean section, assisted breech delivery; external cephalic version; cervical cerclage	Bedside Clinics, Intraoperative	K Core-Y	1 hour

7.	OG34.4 Operative Gynaecology : Understand and describe the technique and complications: Dilatation & Curettage (D&C); EA-ECC; cervical biopsy; abdominal hysterectomy; myomectomy; surgery for ovarian tumours; staging laparotomy; vaginal hysterectomy including pelvic floor repair; Fothergill's operation, Laparoscopy; hysteroscopy; management of postoperative complications	Bedside Clinics, Intraoperative	K Core-Y	2 hours
8	OG19.2 PUERPERIUM Counsel in a simulated environment, contraception and puerperal sterilisation	Bedside Clinics	A/C Core-Y	
9	OG19.3 Observe/ assist in the performance of tubal ligation	Bedside Clinics, Intraoperative, DOAP session	K/S Core-Y	
10	OG35.11 O AND G SKILLS Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis and counsel patients	Bedside Clinics, Intraoperative	K/S/A/C Core-Y	
11	OG35.5 Determine gestational age, EDD and obstetric formula	Bedside Clinics	K/S Core-Y	
12	OG35.7 Obtain informed consent for any examination / procedure	Bedside Clinics	S Core-Y	
13	OG35.8 Write a complete case record with all necessary details	Bedside Clinics	S Core-Y	
14	OG35.9 Write a proper discharge summary with all relevant information	Bedside Clinics	S Core-Y	
15.	OG35.10 Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.	Bedside Clinics	S Core-Y	

	Outpatient Department			
1.	OG35.12 SKILLS Obtain a PAP smear in a stimulated environment	DOAP session	K/S Core-Y	SL NO 43,44, 45,46, 47 =1 hours
2.	OG33.4 Enumerate the methods to prevent cancer of cervix,perform assist including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine (VILI), pap smear and colposcopy	DOAP SESSION	K Core-Y	
3.	OG35.15 SKILLS Demonstrate the correct technique to insert and remove an IUD in a simulated/ supervised environment	Bedside Clinics, DOAP session	K/S	
4	OG20.3 MEDICAL TERMINATION OF PREGNANCY Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC& PNDT) Act 1994 & its amendments	Bedside Clinics	K Core-Y	
5	OG22.2 VAGINAL DISCHARGE 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	Bedside Clinics	K Core-Y	
1	OG8.5 ANTENATAL CARE Describe and demonstrate pelvic assessment in a model	DAOP session	K/S	
2.	OG13.4 Demonstrate the stages of normal labor in a simulated environment / mannequin and counsel on methods of safe abortion.	Bedside Clinics, DOAP session	K/S Core-Y	SL 66,67, 68 =1 hour

	LABOUR ROOM			
1.	OG13.1 LABOUR 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; management of third stage of labor	Bedside Clinics, Small group discussion	K Core-Y	SL 64,65 =1 hour
2.	OG13.3 Observe/ assist in the performance of an artificial rupture of Membranes	DOAP Session	K Core-N	
3.	OG13.5 Observe and assist the conduct of a normal vaginal delivery	Bedside Clinics, DOAP session	K/S Core-Y	1 hr
4.	OG18.2 CARE OF THE NEWBORN Demonstrate the steps of neonatal resuscitation in a simulated environment	DOAP session	K Core-Y	
5	OG20.2 MEDICAL TERMINATION OF PREGNANCY In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy	Bedside Clinics	K/S/A/ C Core-Y	SL NO 69-71 =1 hour
6.	OG35.14 Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment	Bedside Clinics	K Core-Y	
	i) PRACTICAL--4 weeks,5 days in a week,2 hours /day			

5. AETCOM OBG –Module

FOUNDATION OF COMMUNICATION PART 2

AREAS OF COMPETANCIES ADDRESSED:

Communicate to the patient in a patient, respectful,

non-threatening, non-judge mental and empathetic manner

LEVELS OF COMPETANCY: SH

LEARNING HOURS: 1 HOURS

TEACHING LEARNING METHOD: 1. Small group sessions with role play
2. Interactive discussion on gathering data

ASSESSMENT METHOD: FA: WRITTEN/OSCE

RESOURCE: CASE STUDY PROVIDED

Students will be engaged in 60 minutes class with specific emphasis on

- Introducing oneself to the patient
- Making the patient comfortable and empathetic
- How to encourage the patient to being co-operative
- Detailed obstetric history taking
- Correct sequence of history taking will be dealt with
- Importance of knowing patient's personal history, socio-economic status
- Enquiring about presenting complaints, history regarding on-going pregnancy
- History abut previous pregnancies, personal history, menstrual history, any past medical and surgical histories
- Assessment
- Antenatal case histories being recorded in the log book
- Practical assessment of history taking at the end of the posting

6**. Certification of skills** : As per guidelines provided in the LOG book skill acquisition.

7**. Scheme of theory examination** :

- Formative assessment : Two internal assessment tests.
- 1st test held in month of May 2021
- 2nd test held in month of August 2021
- Both tests of 50 marks each.
- Both tests carry equal weightage.

Type of question	Number	Marks allotted to each question	Total marks
MCQ	10	01 marks	10 marks
Long Essay	02	10 marks	20 marks
Short Essay	05	01 marks	5 marks
Short Answer	05	01marks	5 marks
Log book & AETCOM		05 marks 05 marks	10 marks
Total			50 marks

The distribution of internal assessment marks shall be as mentioned below:

Theory IA	Maximum Marks	Practical End postings	Maximum Marks
Theory written paper	30	OSCE/viva voce	40
Formative assessment from MCQ	10		
Formative assessment from log book assessment/ AETCOM modules	5 5	Formative assessment from day to day assessment	5
		Record book evaluation	5
TOTAL	**50**		**50**

OSCE stations-

I Spotter – Instruments, specimens (10 marks)
II Clinical Photographs - X rays, NST, Ultrasound pictures (05 marks)
III History taking and Clinical Examination including AETCOM (20 MARKS)
IV Interpretation of laboratory reports (05 marks)
V Checking of record books (05 marks)
VI Day to assessment (05marks)

Type of station in OSCE	Number	Marks allotted to each station	Total marks
Spotters	05	02 marks	10 marks
Clinical photograph spotters	05	1 marks	05 marks
History taking &Clinical examination stations including AETCOM	01	20 marks	20 marks
Interpretation of laboratory reports	05	01 marks	05 marks
			50 marks

8. Practical / Clinical examination :

- Clinical assessment of each student will be carried out at the end of his/her clinical posting.
- At the end of the scheduled 4 week clinical posting in OBGYN the student will have to undergo an OSCE (Objective Structured Clinical Examination).
- This OSCE examination will NOT be conducted unit wise, instead all the students in department of OBG will be pooled together and examination will be conducted .

9. Integrated teaching : As per schedule of the subjects of Professional Year 2

10. RECOMMENDED BOOKS:

Obstetrics :

1. Mudaliar & Menon, Clinical Obstetrics, Sarala Gopalan, Vanita Jain, 12th edition, University Press.
2. Dutta D.C., Text book of Obstetrics 9th edition, Jaypee Publication.
3. Holland and Brews, Textbook of Obstetrics. 4th Edition, B. I. Publication, New Delhi,
4. Williams Obstetrics — Cunningham, Bloom, Sponge, et al 25th edition, Mc Craw Hill education Publication.
5. Fernando Arias Amarnath Bhinde, savaratanum Arulkumaran et al 5th edition, Elsevier publication.
6. Munrokerr's operative obstetrics, Thomas F, Baskett Andrew, Savratanum Arulkumaran, 12th edition, Bailliere Tindall, London.

Gynaecology:

1. Shaw's A Text book of Gynaecology, Padubidri VG, Shirish N Daftary, 17th edition, Elsevier publication
2. Dutta DC, Text book of Gynaecology, 8th edition,
3. Jeffcoate's Principles of Gynaecology, Pratap kumar, Narendra malhotra, 9th edition, Jaypee publication.
4. Williams Gynaecology Hoffman, John, Joseph et al, 3rd edition, Mc Craw Hill education Publication.
5. Shaw's operative Gynaecology, Christopher Hudson, Marcus Setchell, 7th edition, Elsevier publication.

APPOINTMENT OF EXAMINERS:

- There shall be 4 examiners for 100 Students.
- 2 External and 2 Internal Examiners.
- Person appointed as an examiner in the particular 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.
- 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 his/her subject.
- External examiners shall rotate at an interval of 2 years.
- The Chairman of the BOE will moderate the QP
- 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.

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OPHTHALMOLOGY

1. GOAL

The broad goal of undergraduate teaching in ophthalmology is to impart appropriate knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a primary care physician of first contact for ocular disorders and also function as a community health leader to assist in the implementation of NPCB and to familiarize the recent advances in ophthalmology.

2. OBJECTIVES

2.1 KNOWLEDGE

At the end of the course, the student should have knowledge of :

1. Common problems affecting the eye
2. Magnitude of blindness in India and its main causes
3. Principles of management of major ophthalmic emergencies
4. Major systemic diseases affecting the eye
5. Effect of local and systemic diseases on the patient's vision and the necessary action required to minimise the sequelae of such diseases
6. Adverse drug reactions with special reference to ophthalmic manifestations
7. National programme for prevention of blindness and its implementation at various level
8. Eye care education for prevention of eye problems
9. Role of Primary Health Centres
10. Organisation of primary health care and the functioning of the Ophthalmic assistant
11. Integration of the National programme for control of blindness with the other National health programmes
12. Eye bank organisation

2.2 SKILLS

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

1. Elicit a history pertinent to general health and ocular status
2. Perform procedures such as visual acuity testing, extraocular movements testing, digital tonometry, instillation of eye drops, eye wash and ocular bandaging.

3. Observe basic procedures like Indirect ophthalmoscopy, epilation, conjunctival/corneal foreign body removal, corneal staining, perimetry, etc
4. Diagnose and treat common problems affecting the eye
5. Interpret ophthalmic signs in relation to common systemic disorders
6. Provide first aid in major ophthalmic emergencies
7. To be part of community surveys for visual health
8. To be part of primary eye care services through Primary Health Centres

2.3 ATTITUDE AND COMMUNICATION SKILLS

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

1. Use effective means of communication with the public and individuals to motivate them for surgery for cataract, glaucoma ,etc and for eye donation
2. Establish rapport with his seniors, colleagues and paramedical workers, so as to effectively function as a member of the eye care team

2.4 INTEGRATION

From the integrated teaching of other basic sciences, student should be able to apply this knowledge to diagnose and manage common eye problems and to function effectively as a primary care physician of first contact for ocular disorders.

3. TEACHING HOURS AND COURSE CONTENT

Theory – No theory classes in Phase II
Clinical posting: - Total 8 weeks

A. During II Phase – 4 weeks - 20 sessions of 3 hours each = 60 hours
B. During Phase III/Part I - 4 weeks - 24 sessions of 3 hours each = 72 hours
C. Total : 44 sessions of 3 hours each - 132 hours

Clinics	Weeks	Number of 3 hours Sessions	Total hours
During Phase II	4	20	60
During Phase III/Part I	4	24	72
TOTAL	**8**	**44**	**132**

Course contents

i) THEORY- No theory classes in Phase II
ii) PRACTICAL

DOAP SESSIONS IN OPHTHALMOLOGY – Phase II

SL. NO.	TOPIC	Competency No	Suggested teaching learning method	Domain / level	Teaching hours
1	Demonstrate the symptoms and signs of lids and adnexa including Hordeolumexternum/ internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag, lagopthalmos	2.2	DOAP	S/S	3
2	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	2.3	DOAP	S/SH	3
3	Elicit document and present an appropriate history in a patient presenting with a “red eye” including congestion, discharge, pain	3.1	DOAP	S/SH	3
4	Demonstrate document and present the correct method of examination of a “red eye” including vision assessment, corneal lustre, pupil abnormality, ciliary tenderness	3.2	DOAP	S/SH	3
5	Demonstrate correct technique of removal of foreign body from the eye in a simulated environment	3.8	DOAP	S/SH	3
6	Demonstrate the correct	3.9	DOAP	S/SH	3

	technique of instillation of eye drops in a simulated environment				
7	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	8.3	SGD/DOAP	S/SH	3

V. SUGGESTED DISTRIBUTION OF THEORY TEACHING HOURS – No teaching of theory classes in Phase II

4. CERTIFICATION OF SKILLS: No skills will be certified in Phase II

5. <u>SCHEME OF EXAMINATION</u>:

A. SUMMATIVE ASSESSMENT: No summative exam in Phase II

B. FORMATIVE ASSESSMENT:

THEORY INTERNAL ASSESSMENT: No theory internal assessment will be conducted in Phase II

PRACTICAL INTERNAL ASSESSMENT

- One clinical end posting of 40 marks will be conducted at the end of 4 weeks.
- Formative assessment marks shall be calculated based on case presentation, OSCE stations, Viva, DOAP sessions and Record book evaluation.
- Viva/oral examination shall include use of common ophthalmic instruments, ophthalmic drugs and trial lenses.

<u>The distribution of internal assessment marks shall be as mentioned below:</u>

Practical IA	**Maximum Marks**
Case presentation	20
OSCE + Viva	10
Formative assessment from DOAP sessions	5
Record book evaluation	5
	40

FINAL INTERNAL ASSESSMENT MARKS

Final IA marks will be calculated as follows:

Final IA marks (40Marks) = Case presentation(20 Marks)**+** OSCE + Viva (10 Marks)+DOAP sessions(5 Marks)+Record book evaluation(5 Marks)

A clear record of all components that add to the internal assessment marks needs to be maintained by the institution/departments and retained by them for at least 5 years after completion of the examination.
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.
The format for providing feedback is given in annexure.
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.
Blueprint for the theory examinations– No written Theory exam in Phase II

9. SELF DIRECTED LEARNING (SDL)

No SDL will be conducted in Phase II.

10. INTEGRATION:

- May be conducted in the form of sharing/nesting/correlation using CBL/PBL/ Case study approach and involving various departments concerned while preparing the specific learning objectives of the integration topics.
- Department involved may be chosen according to the topic and may be conducted as Horizontal/ Vertical form of integration as per the MCI CBME document.

Competency list for integration in Large and small group teaching sessions (theory)			
SL	**Competency NO.**	**Competency to be integrated by nesting/ sharing/ aligning**	**Integration with departments**
1	PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	Pathology
2	PH1.58	Describe drugs used in Ocular disorders	Pharmacology

RECOMMENDED TEXT BOOKS, REFERENCE BOOKS AND ATLAS

Text Books

Note: A single textbook may not cover the entire curriculum. Referring to more than one book is recommended.

Recent editions of:

1. Parsons JH. Parsons' Diseases of the Eye. 23rd ed. Sihota R, Tandon R, editors. New Delhi: Elsevier India; 2019.
2. Khurana AK. Comprehensive Ophthalmology. 7th ed. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2019.
3. Basak SK. Essentials of Ophthalmology. 7th ed. Essentials of Ophthalmology. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2019.
4. Nema H V., Nema N. Textbook of ophthalmology. 6th ed. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2012.

Reference books :

1. Kanski JJ. Kanski's clinical ophthalmology: a systematic approach. 9th ed. Salmon JF, editor. Philadelphia: Elsevier; 2020.
2. Yanoff M, Duker J. Ophthalmology. 5th ed. Philadelphia: Elsevier; 2018.
3. Kanski JJ. Kanski test yourself atlas in ophthalmology. 3rd ed. Philadelphia: Elsevier; 2008.

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ENT : OTORHINOLARYNGOLOGY

SL. NO	COURSE CURRICULUM
1	**DEPERTMENT GOALS:** 1.1 Thorough understanding of Surgical Anatomy of Ear, Nose, Throat and Head & neck region. 1.2 To Orient students for common ENT Diseases and their management. 1.3 To Orient student for common ENT Surgeries and emergency conditions. 1.4 Identity malignant neoplasms of in Ear, Nose, Throat, Head& neck region. 1.5 Ability to recognize hearing impairment and rehabilitation of the same. 1.6 Prescribe drugs rationally by Understanding the importance of both the non-drug and drug treatment, selection of drugs based on suitability, tolerability, efficacy and cost. 1.7 Foresee, prevent and manage adverse drug events and drug interactions. 1.8 Use antimicrobials judiciously for therapy and prophylaxis in ENT diseases.
2.	**OBJECTIVE** 2.1 Knowledge: Anatomy of Ear Nose Throat and Head& Neck region. 2.2 Skill: Clinical Examination of ENT 2.3 AETCOM: At the end of the course the student should be able to communicate with the patient in a respectful non- judgmental and empathetic manner. Identify discuss and define socio economical ethical and medico legal issue pertaining to consent for surgical procedure and confidentiality. Identify discuss physician's role and responsibility to society and community that he or she serves. 2.4 Integration: Integrated teachings of basic sciences in relate to Ear Nose and Throat and students should be able to comprehend, the functions and regulation and integration of functions of organs in related to Ear, Nose and Throat. Students should be able to interpret the anatomical Physiological and pathological basis of disease process.
3	**TEACHING HOURS** A. Teaching Hours: 66 hrs. B. Small group Teaching :40hrs C. Self-directed learning(SDL):10hrs D. Surgical Demonstration:10hrs

Course Content

i. Theory—NOT APPLICABLE

Assessment:6 hrsSl. No	TOPIC/SYSTEM: (WITH COMPETENCY NUMBER) core/ non-core competency	Teaching hours 66 hours

ii. Practical—NA CLINICS 10AM TO 1PM

Domain	Level	DOAP
K-KNOWLEDGE	K-KNOW	D-DEMONSTRATION
S- SKILL	KH- KNOW HOW	O-OBSERVE
A-ATTITUDE	S-SKILL	A-ASSIST
C-COMMUNICATION	SH-SHOW	P-PERFORM
	P-PERFORM	

Sl. No	TOPIC OF PRACTICAL: (WITH COMPETENCY NUMBER)	Suggested teaching learning method	Domain	Level	Teaching hours
1	Describe the Anatomy & physiology of ear, nose, throat, head & neck (EN 1.1)	Small group	K	K.H	2hours
2	Describe the pathophysiology of common diseases in ENT (EN 1.2)	Small group	K	K.H	2hours
3	Elicit document and present an appropriate history in a patient presenting with an ENT complaint(EN 2.1)	Small group	K/S/A/C	S.H	2hours

	4	Demonstrate the correct use of a head lamp in the examination of the ear, nose and throat(EN 2.2)	DOAP	S	S.H	2hours
	5	Demonstrate the correct technique of examination of the ear including Otoscopy (EN 2.3)	DOAP	K/S/A	SH	2 hours
	6	Demonstrate the correct technique of performance and interpret tuning Fork tests (EN 2.4)	DOAP	K/S/A	SH	2 hours
	7	Observe and describe the indications for and steps involved in the performance of Otomicroscopic examination in a simulated environment (EN 3.1)	Small group, Demonstrati on	S	KH	2 hours
	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 Otalgia (EN 4.1)	Small group, bedside	K/S	SH	2 hours
	9	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 (EN 4.2)	Small group ,Bedside	K/S	SH	2 hours
	10	Elicit document and present a correct history, demonstrate and describe the clinical features, choose	Small group, Bed side	K/S	SH	2 hours

		the correct investigations and describe the principles of management of ASOM (EN 4.3)				
	11	Demonstrate the correct technique to hold visualize and assess the mobility of the tympanic membrane and its mobility and interpret and diagrammatically represent the findings (EN 4.4)	Small group, Bedside	K/S/A	SH	2 hours
	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 OME (EN4.5)	Small group, Bedside	K/S	SH	2 hours
	13	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 (EN 4.6)	Small group, Bedside	K/S	SH	2 hours
	14	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of CSOM (EN4.7)	Small group , bedside	K/S	SH	2 hours

	15	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 (EN 4.8)	Small group, bedside	K/S	SH	2 hours
	16	Demonstrate the correct technique for syringing wax from the ear in a simulated environment (EN4.9)	DOAP	S	SH	2 hours
	17	Observe and describe the indications for and steps involved myringotomy and myringoplasty (EN 4.10)	DOAP	S	KH	2 hours
	18	Describe the clinical features, investigations and principles of management of Facial Nerve palsy (EN4.18)	Small group, bedside	K	KH	2 hours
	19	Demonstrate the correct technique of examination of the nose & Paranasal sinuses including the use of nasal speculum(EN2.5)	DOAP, Bedside	S	SH	2 hours
	20	Observe and describe the indications for and steps involved in the performance of diagnostic nasal Endoscopy (EN3.2)	Demonstrati on	S	KH	2 hours
	21	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations	Small group, bedside	K/S	SH	2 hours

	and describe the principles of management of Nasal Obstruction EN(4.22)				
22	Describe the clinical features, investigations and principles of management of DNS (EN4.23)	Small group, bedside	K	KH	2 hours
23	Enumerate the indications observe and describe the steps in a Septoplasty(EN4.24)	DOAP	S	KH	2 hours
24	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 (EN4.25)	Bedside, small group	K/S	SH	2 hours
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 Adenoids (EN4.26)	Bedside	K/S	SH	2 hours
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 Allergic Rhinitis (EN4.27)	Small group, bedside	K/S	SH	2 hours
27	Demonstrate the correct technique of examining the throat including the use of a	Bedside	S	SH	2 hours

	tongue depressor (EN 2.6)				
28	Demonstrate the correct technique of examination of neck including Elicitation of laryngeal crepitus (EN2.7)	Bedside	S	SH	2 hours
29	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of dysphagia (EN 4.38)	Small group	K/S	SH	2 hours
30	Observe and describe the indications for and steps involved in the surgical procedures in ear, nose & throat (EN3.5)	Demonstration	K	KH	2 hours
31	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 (EN4.39)	SMALL GROUP ,BEDSIDE	K/S	SH	2 hours
32	Observe and describe the indications for and steps involved in a tonsillectomy / adenoidectomy (EN4.40)	DOAP	S	KH	2 hours
33	Observe and describe the indications for and steps involved in Tracheostomy (EN4.50)	DOAP	S	KH	2 hours

	34	Observe and describe the care of the patient with a tracheostomy (EN4.51)	DOAP	S	KH	2 hours

iii. Suggested distribution of theory teaching hours

Students are only posted for two weeks of clinical posting in second professional year

4 Certification of skills - None

5 Scheme of examination: Eligibility criteria pass criteria, formative Assessment marks, University examination (Theory and practical Pattern and marks). Exam pattern, topic distribution in case more than one theory paper , weightage of marks allotted for topics to be assessed in theory exam and blue printing of the question paper for summative examination also to be provided.

THEORY	MCQs 1 mark each	LEQ 5 mark each	SEQ 2 mark each	SAQ 1 mark each	Theory Total marks
Formative/ Summative Exam written paper	NA	NA	NA	NA	NA

Distribution of topics for Paper 1 for University summative examination

Topic wise weightage:

NOT APPLICABLE : ONLY 1 PAPER

Blueprinting of question Paper I

Sl No	Topic	Total marks as per SDMU guideline	MCQs 1 mark each	LEQ 10 marks each	SEQ 5 marks each	SAQ 2 marks each	Total marks from each topic

Practical exam (OSCE) :

Internal assessment for practical's 40 Marks

End postings 20 marks		Viva	Day to Day assessment	Record book
Case Discussion	10	05 marks	05 marks	05 marks
OSCE	15 (5+5+5 (3stations))			

	6	Integrated Teaching – As applicable	
	7	**<u>Recommended Text and Reference books, Journals and Atlases with editions</u>** *A.* ***<u>Text Books</u>***<u>:</u> 1. Logan Turner's Diseases of the Nose, Throat and Ear, Head and Neck Surgery *Edited BySMusheerHussain* ,Edition11th Edition , ImprintCRC Press. 2. Mohan Bansal- Essential of Ear Nose & Throat – 1st edition Publishers- JayPee Brothers Medical Publications. 3. Prof.K K Ramalingam – A short Practice of Otorhinolaryngology – 4th edition, All India publishers and distributers 4. P.L Dhingra- Diseases of Ear ,Nose ,Throat and Head& Neck Surgery 6th Edition Published by Elsevier, a Division of Reed Elsevier India Private Ltd. 5. K BBhargava – A Short book of ENT Diseases –11th edition Publishers: Usha Publication 6. Md. Maqbool Text book of Ear Noseand Throat diseases- 12th edition ,Publishers:JayPee Brothers Medical Publications 7. Hazarika P – Text book of Ear,NoseThroat and Head& Neck surgery clinical 4th edition , Publisher: C B S Publishers *B.* ***<u>Reference books</u>***<u>:</u> 1. John c *Watkinson* Scott –Brown's: Otorhinolaryngology & Head and Neck Surgery 8th edition CRP Press, 3 Volume set 2. Flint, Cummings, Otorhinolaryngology & Head and Neck Surgery 6th Edition , 3 Volume set Elsevier Publication ***<u>Journals and Atlases witheditions</u>***<u>:</u> • Indian journal of Otolaryngology and Head & Neck Surgery. • Journal of Laryngology & Otology • Laryngoscope ***<u>Atlas books:</u>*** • Color Atlas On Temporal Bone Dissection 1st Edition by HONNURAPPA, Jaypee Brothers Medical Publishers • Color Atlas of Ear Disease 2nd Edition by Richard A Chole ,JamesW.Forsen	

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ORTHOPAEDICS

SECOND MBBS SCHEDULE (COMPETENCY BASED)

DEPARTMENT OF ORTHOPAEDICS

Second professional year MBBS

Clinical postings in orthopaedics –2 weeks (no theory class in the clinical postings in the second professional shall be 15 hours per week (3 hrs. per day from Monday to Friday)

TOTAL 30 HOURS

NUMBER	COMPETENCY K/S/A/C	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integratio	HOURS
OR1.5	Describe and discuss the aetiopatho - genesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic	Written/ Viva voce/ OSCE/ Simulation				6
Or 1.6	Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation	K/S/A/C	SH	Y	Simulation, DOAP session,	OSCE/SIMULATION				3
OR2.15	Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome	K/S	SH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		HUMAN ANATOMY		6
OR2.16	Describe and discuss the mechanism of injury, clinical features, investigations and principles of	K	K/KH	Y	Lecture, Small group discussion, Bedside clin	Written/ Viva voce/ OSCE		HUMAN ANATOM		3

	management of open fractures with focus on secondary infection prevention and management							Y		
OR11.1	Describe and discuss the aetiopatho-genesis, 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	K/H	Y	Lecture, Small group discussion, case discussion	Written/ Viva voce/ OSCE		HUMAN ANATOMY	General Medicine, General surgery	9
										27 HOURS+ 3HOURS FOR END POSTING

End posting will be conducted for all students based on a combination of written, OSCE and OSPE, clinical cases and case scenarios. Total marks-12

The pattern of end postings will be divided into
1 History taking and physical examination (40%)
2 case scenarios and spotters including OSCE and OSPE depending upon the topics (60%)

RADIODIAGNOSIS

SL No.	UNDER GRADUATE COURSE CURRICULUM RADIODIAGNOSIS
1	**Departmental Goals** The broad goal of teaching the undergraduate medical students in the field of Radio-diagnosis should be aimed at making the students realize the basic need of various radio diagnostic tools in medical practice. They shall be aware of the techniques to be undertaken in different situations for the diagnosis of various ailments as wells as during prognostic estimations.
2	**Objectives** **2.1 Knowledge:** At the end of the course in Radio-diagnosis, the students should: 1. Understand basics of x-rays production, its uses and hazards. 2. Be aware of radiation hazards and protection with reference to self, patient and the public. 3. Be familiar with various imaging techniques, their advantages and disadvantages.Be aware of indications for common x-ray investigations, know the indications for C.T. Scan and Ultrasound. 4. Appreciate and diagnose changes in bones – like fractures, infections, tumors and metabolic bone diseases. 5. Identify and diagnose various radiological changes in disease conditions of chest and mediastinum, Gastro intestinal tract, Hepatobiliary system and Genito Urinary (G.U) system and central nervous system. 6. Learn about various imaging techniques, including computerized Tomography (C.T scan), Ultrasound with color Doppler, Magnetic Resonance Imaging (M.R.I) and D.S.A. **2.2 Skills:** At the end of the course the students shall be able to: 1. Use basic protective techniques during various imaging procedures. 2. Interpret common x-ray, radio-diagnostic techniques in various community situations. 3. Advise appropriate diagnostic procedures in specialized circumstances to appropriate specialists. **2.3 Integration:** The knowledge acquired in radiology should help the students to integrate and correlate the diagnostic and prognostic imaging studies with clinical conditions in health and disease.

3 **A. Teaching Hours:**

- **MBBS professional year II – 2 weeks clinical posting**(3 Hours per day)
- **MBBS professional year III – 20 Hours**(Lecture – 10 hours, SGD – 8 Hours, SDL – 2 Hours)

B. Course Content:

i) Practical -Clinical postings MBBS professional year II – 2 Weeks (3 Hours per day)

SL No.	Topic of practical (with competency number)	Suggested teaching learning method	Domain	Level	Teaching hours
1	**RD1.2** Describe the evolution of Radiodiagnosis. Identify various radiological equipments In the current era.	SGD/ DEMO	S	SH	6 Hours
2	**RD1.1** Define radiation and the interaction of radiation and importance of radiation protection	SGD/ DEMO	K	KH	3 Hours
3	**RD1.12** Describe the effects of radiation in pregnancy and the methods of prevention/ minimization of radiation exposure	SGD/ DEMO	K	KH	3 Hours
4	**RD1.13** Describe the components of the PC & PNDT Act and its medicolegal implications	SGD/ DEMO	K	KH	3 Hours
5	**RD1.11** Describe preparation of patient for common imaging procedures	SGD/ DEMO	K	KH	3 Hours
6	**RD1.10** Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments	SGD/ DEMO	K	KH	6 Hours
7	**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 Ob &Gy	SGD/ DEMO	K/S	SH	3 Hours
8	**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	SGD/ DEMO	K/S	SH	3 Hours

9	**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 disorder in Surgery	SGD/ DEMO	K/S	SH	3 Hours
10	**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	SGD/ DEMO	K/S	SH	3 Hours

*K – Knowledge, S – Skill, SH – Shows how, KH – Knows how

- **FORMATIVE ASSESSMENT AT THE END OF POSTING – 30 Marks (Spotters)**

ii) Theory - MBBS professional year III (20 Hours)

SL No	Topic / System: (with competency number)	Core / Non-core competency	Suggested teaching learning method	Domain	Level	Teaching hours
1	**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	Core	Lecture/ SGD/SDL	K/S	SH	2 Hours
2	**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	Core	Lecture/ SGD/SDL	K/S	SH	3 Hours

		Ob &Gy					
	3	**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	Core	Lecture/ SGD/SDL	K/S	SH	4 Hours
	4	**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	Core	Lecture/ SGD/SDL	K/S	SH	4 Hours
	5	**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	Core	Lecture/ SGD/SDL	K/S	SH	2 Hours
	6	**RD1.8** Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions	Core	Lecture/ SGD/SDL	K/S	SH	3 Hours

	pertaining to common malignancies					
7	**RD1.9** Describe the role of Interventional Radiology in common clinical conditions	Core	Lecture/ SGD/SDL	K	KH	2 Hours

iii) Suggested distribution of theory teaching hours

Large group teaching - 10 hours	Small group teaching - 8 hours	Self-directed learning - 2 hours	Total teaching - 20 hours

- **FORMATIVE ASSESSMENT AT THE END OF SYLLABUS - 30 Marks (MCQs)**

4 **Certification of skills**

SL. NO	Competency Description with Competency number	No. required to certify
	NIL	

5 **Scheme of examination:**

Since Radiodiagnosis comes under Surgery and Allied subjects in MCI UG curriculum, and there is no separate paper for Radiodiagnosis for Undergraduate students, Questions from Radiology can be included in the Surgery paper during summative assessment.

- Formative assessment at the end of clinical posting (II MBBS) - 30 Marks (Spotters)
- Formative assessment at the end of theory syllabus (III MBBS Part I) - 30 marks (MCQs)

6 **Integrated Teaching**

Sl. No	Topics / areas of integration	Suggested Departments to be involved
1	Describe the components of the PC & PNDT Act and its medicolegal implications	Obstetrics &Gynaecology, Forensic Medicine & Toxicology

7 **Recommended Text and Reference books, Journals and Atlases with editions**

Sl.No.	Name of the textbook	Authors	Publisher
1.	Sutton's text book of Radiology for Undergraduates	David Sutton	Saunders Elsevier
2.	Aids to Radiological Differential Diagnosis	Chapman &Nakielny	Saunders Elsevier
3.	A Guide to Radiological procedures	Chapman &Nakielny	Saunders. Elsevier
Sl.No.	**Name of the Reference book**	**Authors**	**Publisher**
1.	Grainger & Allison's Diagnostic Radiology	Ronald G, Grainger David, Allison	Churchill Livingstone
2.	Radiology and Imaging for Medical students	Sutton,	Churchill Livingstone
3.	Felson's Principles of Chest Roengentology	Lawrence R. Goodman	Saunders. Elsevier
4.	Chest X-Rays Made easy	Corne&Carrol	Churchill Livingstone
5.	Chistensen's Physics of Diagnostic Radiology	Curry T.S. &Dowdey J.E.,	Williams &Willkins
6.	Text Book of Radiology & Imaging Vol. I & II	David Sutton	Churchill Livingstone

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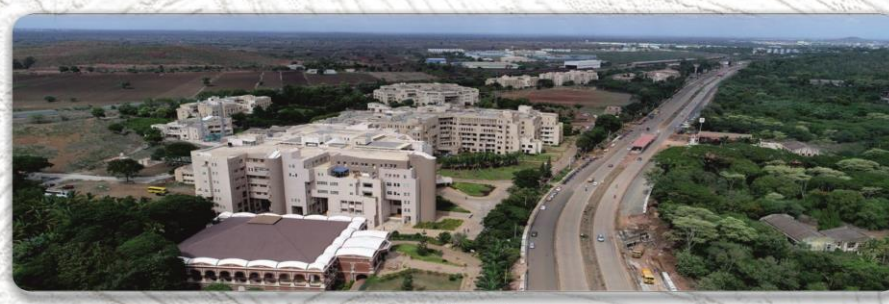

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