



**MALWANACHAL UNIVERSITY, INDORE**

**Curriculum implemented by statutory body (MCI/NMC) for MBBS Programme and PHARMACOLOGY (Programme Code: - MUM-01MBB)**

**Programme name:-I M.B.B.S.  
Course Code: - MBS-203  
Course name: - PHARMACOLOGY**

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
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**DEPARTMENT OF PHARMACOLOGY**

**KNOWLEDGE: Topic: Pharmacology**

**Number of competencies: (64 )**

**Number of procedures that require certification : (NIL)**

PH1.1	Define and describe the principles of pharmacology and pharmacotherapeutics	K	K	Y	Lecture	Written/ Viva voce			
PH1.2	Describe the basis of Evidence based medicine and Therapeutic drug monitoring	K	KH	Y	Lecture	Written/ Viva voce			
PH1.3	Enumerate and identify drug formulations and drug delivery systems	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.4	Describe absorption, distribution, metabolism & excretion of drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.5	Describe general principles of mechanism of drug action	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.6	Describe principles of Pharmacovigilance & ADR reporting systems	K	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.7	Define, identify and describe the management of adverse drug reactions (ADR)	K/S	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.8	Identify and describe the management of drug interactions	K/S	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.9	Describe nomenclature of drugs i.e. generic, branded drugs	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.10	Describe parts of a correct, complete and legible generic prescription. Identify errors in prescription and correct appropriately	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.11	Describe various routes of drug administration, eg., oral, SC, IV, IM, SL	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction.	K/S	SH	Y	Lecture, practical	Written/ Viva voce		Pediatrics, General Medicine	
PH1.13	Describe mechanism of action, types, doses, side effects, indications and contraindications of adrenergic and anti-adrenergic drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.14	Describe mechanism of action, types, doses, side effects, indications and contraindications of cholinergic and anticholinergic drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.15	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology, Physiology	
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	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.17	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anesthetics	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology	
PH1.18	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and pre-anesthetic medications	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology	
PH1.19	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, anti-psychotic, anti-depressant drugs, anti-maniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs)	K	KH	Y	Lecture	Written/ Viva voce		Psychiatry, Physiology	
PH1.20	Describe the effects of acute and chronic ethanol intake	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.21	Describe the symptoms and management of methanol and ethanol poisonings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PH1.22	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	Forensic Medicine
PH1.23	Describe the process and mechanism of drug deaddiction	K/S	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
PH1.24	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs affecting renal systems including diuretics, antidiuretics- vasopressin and analogues	K	KH	Y	Lecture	Written/ Viva voce			
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	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	
PH1.26	Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin-angiotensin and aldosterone system	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	
PH1.27	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.28	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.29	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.30	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the antiarrhythmics	K	KH	N	Lecture	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.31	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemias	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PH1.32	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Respiratory Medicine	
PH1.33	Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussives, expectorants/ mucolytics)	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Respiratory Medicine	
PH1.34	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below: 1. Acid-peptic disease and GERD 2. Antiemetics and prokinetics 3. Antidiarrhoeals 4 .Laxatives 5. Inflammatory Bowel Disease 6. Irritable Bowel Disorders, biliary and pancreatic diseases	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		General Medicine	
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	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Physiology	Pharmacology
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)	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.37	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	K	KH	Y	Lecture	Written/ Viva voce			
PH1.38	Describe the mechanism of action, types, doses, side effects, indications and contraindications of corticosteroids	K	KH	Y	Lecture	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.39	Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics & Gynaecology	
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	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics & Gynaecology	
PH1.41	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics & Gynaecology	
PH1.42	Describe general principles of chemotherapy	K	KH	Y	Lecture	Written/ Viva voce			
PH1.43	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology
PH1.44	Describe the first line antitubercular dugs, their mechanisms of action, side effects and doses.	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	
PH1.45	Describe the dugs used in MDR and XDR Tuberculosis	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	Microbiology
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy	Microbiology
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	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Microbiology
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	K	KH	Y	Lecture	Written/Viva voce			Microbiology
PH1.49	Describe mechanism of action, classes, side effects, indications and contraindications of anticancer drugs	K	KH	Y	Lecture	Written/Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.50	Describe mechanisms of action, types, doses, side effects, indications and contraindications of immunomodulators and management of organ transplant rejection	K	KH	Y	Lecture	Written/ Viva voce			
PH1.51	Describe occupational and environmental pesticides, food adulterants, pollutants and insect repellents	K	KH/	Y	Lecture	Written/ Viva voce			
PH1.52	Describe management of common poisoning, insecticides, common sting and bites	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.53	Describe heavy metal poisoning and chelating agents	K	KH	N	Lecture	Written/ Viva voce			
PH1.54	Describe vaccines and their uses	K	KH	Y	Lecture	Written/ Viva voce			
PH1.55	Describe and discuss the following National Health Programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filariasis, Kala Azar, Diarrhoeal diseases, Anaemia & nutritional disorders, Blindness, Non-communicable diseases, cancer and Iodine deficiency	K	KH	Y	Lecture	Written/ Viva voce			Community Medicine
PH1.56	Describe basic aspects of Geriatric and Pediatric pharmacology	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	
PH1.57	Describe drugs used in skin disorders	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy	
PH1.58	Describe drugs used in Ocular disorders	K	KH	Y	Lecture	Written/ Viva voce		Ophthalmology	
PH1.59	Describe and discuss the following: Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines	K	KH	Y	Lecture	Written/ Viva voce			
PH1.60	Describe and discuss Pharmacogenomics and Pharmacoeconomics	K	KH	N	Lecture	Written/ Viva voce			
PH1.61	Describe and discuss dietary supplements and nutraceuticals	K	KH	N	Lecture	Written/ Viva voce			

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PH1.62	Describe and discuss antiseptics and disinfectants	K	KH	Y	Lecture	Written/ Viva voce			
PH1.63	Describe Drug Regulations, acts and other legal aspects	K	KH	Y	Lecture	Written/ Viva voce			
PH1.64	Describe overview of drug development, Phases of clinical trials and Good Clinical Practice	K	KH	Y	Lecture	Written/ Viva voce			
<b>SKILLS: Topic: Clinical Pharmacy</b>									
		<b>Number of competencies: (04)</b>			<b>Number of procedures that require certification : (NIL)</b>				
PH2.1	Demonstrate understanding of the use of various dosage forms (oral/local/parenteral; solid/liquid)	S/C	SH	Y	DOAP sessions	Skills assessment			
PH2.2	Prepare oral rehydration solution from ORS packet and explain its use	S/C	SH	Y	DOAP sessions	Skills assessment			
PH2.3	Demonstrate the appropriate setting up of an intravenous drip in a simulated environment	S	SH	Y	DOAP sessions	Skills assessment			
PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations	S	SH	Y	DOAP sessions	Skills assessment		Pediatrics, General Medicine	
<b>SKILLS: Topic: Clinical Pharmacology</b>									
		<b>Number of competencies: (08)</b>			<b>Number of procedures that require certification : (04)</b>				
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient	S/C	P	Y	Skill station	Skill station	5	General Medicine	
PH3.2	Perform and interpret a critical appraisal (audit) of a given prescription	S	P	Y	Skill Lab	Maintenance of log book	3		
PH3.3	Perform a critical evaluation of the drug promotional literature	S	P	Y	Skill Lab	Maintenance of log book/ Skill station	3	General Medicine	
PH3.4	To recognise and report an adverse drug reaction	S	SH	Y	Skill station	Maintenance of log book/ Skill station			



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH3.5	To prepare and explain a list of P-drugs for a given case/condition	S	P	Y	Skill station	Maintenance of log book	3	General Medicine	
PH3.6	Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drugs	S	SH	N	Skill station	maintenance of log book			
PH3.7	Prepare a list of essential medicines for a healthcare facility	S	SH	Y	Skill station	Maintenance of log book			
PH3.8	Communicate effectively with a patient on the proper use of prescribed medication	C/A	SH	Y	Skill Lab	Skill station			
<b>SKILLS: Topic: Experimental Pharmacology</b>		<b>Number of competencies: (02)</b>		<b>Number of procedures that require certification : (NIL)</b>					
PH4.1	Administer drugs through various routes in a simulated environment using mannequins	S	SH	Y	DOAP sessions	Skills assessment			
PH4.2	Demonstrate the effects of drugs on blood pressure (vasopressor and vaso-depressors with appropriate blockers) using computer aided learning	S	SH	Y	Skill lab	Skill station			
<b>Communication Topic: Pharmacology</b>		<b>Number of competencies: (07)</b>		<b>Number of procedures that require certification : (NIL)</b>					
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use	A/C	SH	Y	Small group discussion	skill station		General Medicine	
PH5.2	Communicate with the patient regarding optimal use of a) drug therapy, b) devices and c) storage of medicines	A/C	SH	Y	Small group discussion	Skill station			
PH5.3	Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider	A/C	SH	Y	Small group discussion	short note/skill station			
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance	A/C	SH	Y	Small group discussion	short note/ viva voce		General Medicine	
PH5.5	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management	K	KH	Y	Small group discussion	short note/ Viva voce		Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs	A/C	SH	Y	Small group discussion	Skill station		Psychiatry	
PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	K	KH	Y	Small group discussion	short note/ Viva voce			Forensic Medicine

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.

Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,

Column F: DOAP session – Demonstrate, Observe, Assess, Perform.

Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation

## Integration

Physiology									
PY3.5	Discuss the action of neuro-muscular blocking agents	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Anaesthesiology, Pharmacology	

## Microbiology

MI1.6	Describe the mechanisms of drug resistance, methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy.	K	K	Y	Lecture , Small group discussion	Written  Viva			Pharmacology
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.5	Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology
MI3.6	Describe the etio-pathogenesis of Acid Peptic Disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology

## Community Medicine

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM3.8	Describe the mode of action & application cycle of commonly used insecticides and rodenticides	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
CM19.1	Define and describe the concept of Essential Medicine List (EML)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
CM19.2	Describe roles of essential medicine in primary health care	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
CM19.3	Describe counterfeit medicine and its prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology

#### Forensic Medicine & Toxicology

FM4.11	Describe and discuss euthanasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.12	Discuss legal and ethical issues in relation to stem cell research	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.17	Describe and discuss ethical Principles: Respect for autonomy, non-maleficence, beneficence & justice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.22	Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.23	Describe the modified Declaration of Geneva and its relevance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.25	Clinical research & Ethics: Discuss human experimentation including clinical trials	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.26	Discuss the constitution and functions of ethical committees	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.27	Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM8.1	Describe the history of Toxicology	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM8.2	Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.3	Describe the various types of poisons, Toxicokinetics & Toxicodynamics and diagnosis of poisoning in living and dead	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.4	Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.5	Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSPE		Pharmacology	
FM8.6	Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce /OSCE		Pharmacology	
FM8.7	Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce /OSCE		Pharmacology, General Medicine	
FM8.8	Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Caustics Inorganic – sulphuric, nitric, and hydrochloric acid Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids.	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.2	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.3	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	

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FM9.4	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.5	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide	K	K/KH	Y	Lectures, Small group discussion Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	Pharmacology
FM9.6	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM10.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: i. Antipyretics – Paracetamol, Salicylates ii. Anti-Infectives (Common antibiotics – an overview) iii. Neuropsychotoxicology Barbiturates, benzodiazepines, phenytoin, lithium, haloperidol, neuroleptics, tricyclics iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis vi. Gastro-Intestinal and Endocrinal Drugs – Insulin	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	Pharmacology

**Dermatology, Venereology & Leprosy**

DR5.3	Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies for scabies	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pediatrics	Pharmacology
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical). agents Enumerate side effects of antifungal therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology ,Pharmacology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
DR8.7	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
DR9.4	Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology
DR9.5	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on National Guidelines	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
DR9.6	Describe the treatment of Leprosy based on WHO guidelines	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
DR9.7	Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Psychiatry
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR11.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR14.5	Enumerate the indications and describe the pharmacology indications and adverse reactions of drugs used in the urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
DR15.3	Enumerate the indications and describe the pharmacology indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Surgery	Microbiology, Pharmacology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
<b>Anesthesiology</b>									
AS3.6	Choose and write a prescription for appropriate premedications for patients undergoing surgery	S	SH	Y	DOAP session, Bedside clinic session	Skill station		Pharmacology	
AS4.1	Describe and discuss the pharmacology of drugs used in induction and maintenance of general anaesthesia (including intravenous and inhalation induction agents, opiate and non-opiate analgesics, depolarising and non-depolarising muscle relaxants, anticholinesterases	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pharmacology	
AS4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pharmacology	
AS5.4	Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anesthesia	S	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	
AS8.3	Describe the pharmacology and use of drugs in the management of pain	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	
AS8.4	Describe the principles of pain management in palliative care	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine
AS8.5	Describe the principles of pain management in the terminally ill	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine
AS10.4	Define and describe common medical and medication errors in anaesthesia	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine

**Psychiatry**

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PS4.4	Describe the treatment of alcohol and substance abuse disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS4.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS5.3	Describe the treatment of schizophrenia including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS5.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
PS6.4	Describe the treatment of depression including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS6.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in depression	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS7.4	Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS7.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS8.4	Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS8.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS10.4	Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS10.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PS11.4	Describe the treatment of <b>personality</b> disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS11.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS12.4	Describe the treatment of <b>psychosomatic</b> disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS12.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS13.4	Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS18.1	Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs in psychiatric disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

#### General Medicine

IM1.24	Describe and discuss the pharmacology of drugs including indications & contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease	K	KH	Y	Bedside clinic, Small group discussion	Written		Microbiology Pharmacology	
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient	S	SH	Y	Bedside clinic, Skill assessment	log book documentation of completion		Pharmacology	
IM2.15	Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM2.18	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology, Biochemistry	
IM2.20	Discuss and describe the assessment and relief of pain in acute coronary syndromes	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
IM2.23	Describe and discuss the indications for nitrates, anti platelet agents, gpIIb - IIIa inhibitors, beta blockers, ACE inhibitors etc in the management of coronary syndromes	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM4.22	Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance	K	KH	Y	Small group, Lecture	Written/ Viva voce		Pharmacology	
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and National Programs	S	SH	Y	Skill assessment	Skill assessment		Microbiology, Pharmacology	
IM4.26	Counsel the patient on malarial prevention	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Pharmacology	
IM5.16	Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy	K	KH	Y	Written, Small group	Skill Assessment/ Written/ Viva voce		Pharmacology	General Surgery
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM6.17	Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM6.18	Discuss and describe the principles and regimens used in post exposure prophylaxis	K	K	Y	Lecture Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM7.21	Select, prescribe and communicate appropriate medications for relief of joint pain	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	Orthopedics
IM7.22	Select, prescribe and communicate preventive therapy for crystalline arthropathies	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM7.23	Select, prescribe and communicate treatment option for systemic rheumatologic conditions	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM7.24	Describe the basis for biologic and disease modifying therapy in rheumatologic diseases	K	KH	Y	Bed side clinic, Small group discussion	Skill assessment/ written		Pharmacology	
IM8.14	Develop an appropriate treatment plan for essential hypertension	K	KH	Y	Small group discussion	Skill assessment/ Written/ Viva voce		Pharmacology	
IM8.15	Recognise, prioritise and manage hypertensive emergencies	S	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM9.14	Prescribe replacement therapy with iron, B12, folate	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pharmacology	
IM9.15	Describe the national programs for anemia prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Community Medicine	
IM10.25	Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis	K/C	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM11.16	Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM11.18	Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM11.19	Demonstrate and counsel patients on the correct technique to administer insulin	S/C	SH	Y	DOAP session	Skill assessment		Pharmacology	
IM12.13	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs	K	KH	Y	Lecture, Small group discussion	Viva voce/ short note		Pharmacology	General Surgery
IM12.14	Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status	S/C	SH	Y	Skill assessment	Skill assessment		Pharmacology	
IM12.15	Describe and discuss the indications of thionamide therapy, radio iodine therapy and General Surgery in the management of thyrotoxicosis	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pharmacology	
IM13.13	Describe and assess pain and suffering objectively in a patient with cancer	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.14	Describe the indications for General Surgery, radiation and chemotherapy for common malignancies	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.17	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	Anesthesiology
IM14.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology	
IM15.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed	K	K	Y	Lecture, Small group discussion	Viva voce/ short note		Pharmacology	General Surgery

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology, Microbiology	General Surgery
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology, Microbiology	
IM16.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pharmacology, Microbiology	
IM16.16	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology	
IM17.11	Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.13	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.14	Counsel patients with migraine on lifestyle changes and need for prophylactic therapy	A/C	SH	N	DOAP session	Skill Assessment		Pharmacology	
IM19.8	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM19.9	Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Surgery
IM20.1	Enumerate the poisonous snakes of your area and describe the distinguishing marks of each	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM20.7	Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti-snake venom	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM20.8	Describe the diagnosis, initial approach, stabilisation and therapy of scorpion envenomation	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM20.9	Describe the diagnosis, initial approach, stabilisation and therapy of bee sting allergy	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM21.1	Describe the initial approach to the stabilisation of the patient who presents with poisoning	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.5	Observe and describe the functions and role of a poison center in suspected poisoning	S	KH	Y	DOAP session	document in log book		Forensic Medicine, Pharmacology	
IM21.6	Describe the medico-legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico-legal report on a suspected poisoning	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ Skill assessment		Forensic Medicine, Pharmacology	
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico-legal aspects with empathy	A/C	SH	Y	DOAP session	Skill assessment		Forensic Medicine, Pharmacology	
IM22.3	Describe the approach to the management of hypercalcemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM25.11	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	

**Pediatrics**

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PE13.5	Propose a management plan for Fe Deficiency Anaemia	S	SH	Y	Bed side clinics, Skill lab	Skill Assessment		Pathology, Pharmacology	
PE13.6	Discuss the National Anaemia Control Program and its recommendations	K	K	Y	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology, Community Medicine	
PE14.1	Discuss the risk factors, clinical features, diagnosis and management of Lead Poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	
PE14.3	Discuss the risk factors, clinical features, diagnosis and management of Organo phosphorous poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	General Medicine
PE14.4	Discuss the risk factors, clinical features, diagnosis and management of paracetamol Poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	
PE24.5	Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti-emetics in acute diarrheal diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE24.8	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE34.3	Discuss the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine, Pharmacology	Respiratory Medicine
PE34.4	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine, Pharmacology	Respiratory Medicine

**General Surgery**

SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate indications, describe surgical principles, management of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
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**Physical Medicine & Rehabilitation**

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PM3.5	Enumerate the indications and describe the therapies for spasticity including medications, serial casts, nerve blocks, botulinum toxin injections	K	KH	Y	Lectures, Small group discussion			Pharmacology	Pediatrics, Orthopedics
PM7.6	Enumerate the indications and describe the pharmacology and side effects of commonly used drugs in neuropathic bladder	K	KH	Y	Lectures, Small group discussion	Written / Viva voce		Pharmacology	General Medicine

#### Respiratory Medicine

CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology, Pharmacology	
CT1.14	Describe and discuss the pharmacology of various antituberculous agents, their indications, contraindications, interactions and adverse reactions	K	KH	Y	Lecture, Small group discussion	short note/ Viva voce		Pharmacology, Microbiology	
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and co-morbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)	K	SH	Y	Bedside clinic, Small group discussion, Lecture	Skill assessment		Pharmacology, Community Medicine	
CT2.16	Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilisers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

#### Orthopaedics



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/S H	Y	Lecture, Small group Discussion, Video assisted lecture	Written/ Viva voce/ OSCE	–	Pathology, Microbiology	General surgery



## **MALWANCHAL UNIVERSITY, INDORE**

**Curriculum implemented by statutory body (MCI/NMC) for MBBS Programme and PATHOLOGY course (Programme Code: - MUM-01MBB)**

**Programme name:-I M.B.B.S.**

**Course Code: - MBS-201**

**Course name: - PATHOLOGY**

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
<b>DEPARTMENT OF PATHOLOGY</b>									
<b>Topic: Introduction to Pathology</b>		<b>Number of competencies: (03)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA1.1	Describe the role of a pathologist in diagnosis and management of disease	K	K	Y	Departmental orientation	Written/ Viva voce			
PA1.2	Enumerate common definitions and terms used in Pathology	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			
PA1.3	Describe the history and evolution of Pathology	K	K	N	Lecture, Small group discussion	Written/ Viva voce			
<b>Topic: Cell Injury and Adaptation</b>		<b>Number of competencies: (08)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA2.1	Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.2	Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.3	Intracellular accumulation of fats, proteins, carbohydrates, pigments	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.4	Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.5	Describe and discuss pathologic calcifications, gangrene	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.6	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA2.7	Describe and discuss the mechanisms of cellular aging and apoptosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			
PA2.8	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	S	SH	Y	DOAP session	Skill assessment			
<b>Topic: Amyloidosis</b>		<b>Number of competencies: (02)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA3.1	Describe the pathogenesis and pathology of amyloidosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA3.2	Identify and describe amyloidosis in a pathology specimen	S	SH	N	DOAP session	Skill assessment			
<b>Topic: Inflammation</b>		<b>Number of competencies:(04)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA4.2	Enumerate and describe the mediators of acute inflammation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA4.3	Define and describe chronic inflammation including causes, types, non-specific and granulomatous; and enumerate examples of each	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA4.4	Identify and describe acute and chronic inflammation in gross and microscopic specimens	S	SH	Y	DOAP session	Skill assessment			
<b>Topic: Healing and repair</b>		<b>Number of competencies: (01)</b>			<b>Number of procedures that require certification:(NIL)</b>				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA5.1	Define and describe the process of repair and regeneration including wound healing and its types	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
<b>Topic: Hemodynamic disorders</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification :(NIL)</span>									
PA6.1	Define and describe edema, its types, pathogenesis and clinical correlations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA6.2	Define and describe hyperemia, congestion, hemorrhage	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.3	Define and describe shock, its pathogenesis and its stages	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA6.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.5	Define and describe embolism and its causes and common types	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.6	Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.7	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	S	SH	Y	DOAP session	Skill Assessment			
<b>Topic: Neoplastic disorders</b> <span style="float: right;">Number of competencies: (05)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>									
PA7.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, biologic, behaviour and spread. Differentiate between benign from malignant neoplasms	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.2	Describe the molecular basis of cancer	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA7.3	Enumerate carcinogens and describe the process of carcinogenesis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.4	Describe the effects of tumor on the host including paraneoplastic syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.5	Describe immunology and the immune response to cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			Microbiology
<b>Topic: Basic diagnostic cytology</b> <span style="float: right;">Number of competencies:(03)</span> <span style="float: right;">Number of procedures that require certification:(NIL)</span>									
PA8.1	Describe the diagnostic role of cytology and its application in clinical care	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA8.2	Describe the basis of exfoliative cytology including the technique & stains used	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		General Surgery	
PA8.3	Observe a diagnostic cytology and its staining and interpret the specimen	S	KH	Y	DOAP session	Skill assessment			
<b>Topic: Immunopathology and AIDS</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>									
PA9.1	Describe the principles and mechanisms involved in immunity	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
PA9.2	Describe the mechanism of hypersensitivity reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.4	Define autoimmunity. Enumerate autoimmune disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA9.5	Define and describe the pathogenesis of systemic Lupus Erythematosus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

<b>Number</b>	<b>COMPETENCY</b> The student should be able to	<b>Domain</b> K/S/A/C	<b>Level</b> K/KH/S H/P	<b>Core</b> Y/N	<b>Suggested Teaching Learning methods</b>	<b>Suggested Assessment methods</b>	<b>Number required to certify P</b>	<b>Vertical integration</b>	<b>Horizontal Integration</b>
PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA9.7	Define and describe the pathogenesis of other common autoimmune diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
<b>Topic: Infections and Infestations</b> <b>Number of competencies: (04)</b> <b>Number of procedures that require certification:(NIL)</b>									
PA10.1	Define and describe the pathogenesis and pathology of malaria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
<b>Topic: Genetic and paediatric diseases</b> <b>Number of competencies: (03)</b> <b>Number of procedures that require certification :(NIL)</b>									
PA11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA11.2	Describe the pathogenesis and pathology of tumor and tumour-like conditions in infancy and childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
<b>Topic: Environmental and nutritional diseases</b> <b>Number of competencies:(03)</b> <b>Number of procedures that require certification:(NIL)</b>									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Community Medicine
PA12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Pediatrics	
PA12.3	Describe the pathogenesis of obesity and its consequences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
<b>Topic: Introduction to haematology</b> <span style="margin-left: 200px;"><b>Number of competencies: (05)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification:(NIL)</b></span>									
PA13.1	Describe hematopoiesis and extramedullary hematopoiesis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.2	Describe the role of anticoagulants in hematology	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.3	Define and classify anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.4	Enumerate and describe the investigation of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.5	Perform, Identify and describe the peripheral blood picture in anemia	S	SH	Y	DOAP session	Skill assessment		General Medicine	
<b>Topic: Microcytic anemia</b> <span style="margin-left: 200px;"><b>Number of competencies: (03)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification:(NIL)</b></span>									
PA14.1	Describe iron metabolism	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PA14.2	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA14.3	Identify and describe the peripheral smear in microcytic anemia	S	SH	Y	DOAP session	Skill assessment		General Medicine	
<b>Topic: Macrocytic anemia</b> <span style="margin-left: 200px;"><b>Number of competencies: (04)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification:(NIL)</b></span>									



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA15.2	Describe laboratory investigations of macrocytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA15.3	Identify and describe the peripheral blood picture of macrocytic anemia	S	SH	Y	DOAP session	Skill assessment			
PA15.4	Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
<b>Topic: Hemolytic anemia</b> <span style="float: right;">Number of competencies: (07)</span> <span style="float: right;">Number of procedures that require certification: (01)</span>									
PA16.1	Define and classify hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.3	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.4	Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.5	Describe the peripheral blood picture in different hemolytic anaemias	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA16.6	Prepare a peripheral blood smear and identify hemolytic anaemia from it	S	P	Y	DOAP session	Skill assessment	1		
PA16.7	Discribe the correct technique to perform a cross match	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce			
<b>Topic: Aplastic anemia</b> <span style="float: right;">Number of competencies: (02)</span> <span style="float: right;">Number of procedures that require certification:(NIL)</span>									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA 17.1	Enumerate the etiology, pathogenesis and findings in aplastic anemia	K	K	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA17.2	Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	K	K	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
<b>Topic: Leukocyte disorders</b> <span style="float: right;">Number of competencies: (02)      Number of procedures that require certification:(NIL)</span>									
PA18.1	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA 18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
<b>Topic: Lymph node and spleen</b> <span style="float: right;">Number of competencies: (07)      Number of procedures that require certification:(NIL)</span>									
PA19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.3	Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen	S	SH	Y	DOAP session	Skill assessment			
PA19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.5	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen	S	SH	Y	DOAP session	Skill assessment		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA19.6	Enumerate and differentiate the causes of splenomegaly	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery, General Medicine	
PA19.7	Identify and describe the gross specimen of an enlarged spleen	S	SH	Y	DOAP session	Skill assessment			
<b>Topic: Plasma cell disorders</b>		<b>Number of competencies: (01)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA20.1	Describe the features of plasma cell myeloma	S	SH	Y	DOAP session	Skill assessment			
<b>Topic: Hemorrhagic disorders</b>		<b>Number of competencies: (05)</b>			<b>Number of procedures that require certification:(NIL)</b>				
PA21.1	Describe normal hemostasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA21.2	Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA21.4	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA21.5	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
<b>Topic: Blood banking and transfusion</b>		<b>Number of competencies: (07)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA22.1	Classify and describe blood group systems (ABO and RH)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA22.2	Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA22.4	Enumerate blood components and describe their clinical uses	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery, General Medicine	
PA22.5	Enumerate and describe infections transmitted by blood transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA22.7	Enumerate the indications and describe the principles and procedure of autologous transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
<b>Topic: Clinical Pathology</b>		<b>Number of competencies: (03)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA23.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	S	SH	Y	DOAP session	Skill Assessment			
PA23.2	Describe abnormal findings in body fluids in various disease states	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA23.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests	S	SH	Y	DOAP session	Skill Assessment			
<b>Topic: Gastrointestinal tract</b>		<b>Number of competencies: (07)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Dentistry	
PA24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA24.3	Describe and identify the microscopic features of peptic ulcer	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA24.4	Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.7	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
<b>Topic: Hepatobiliary system</b> <span style="margin-left: 200px;"><b>Number of competencies: (06)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification: (01)</b></span>									
PA25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA25.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA25.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	
PA25.5	Describe the etiology, pathogenesis and complications of portal hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	
PA25.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests	S	P	Y	DOAP session	Skill assessment	1	General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
<b>Topic: Respiratory system</b>		<b>Number of competencies: (07)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	Microbiology
PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA26.7	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	K	KH	N	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	
<b>Topic: Cardiovascular system</b>		<b>Number of competencies: (10)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA27.1	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.2	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA27.3	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	
PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.5	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.7	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes	S	SH	Y	DOAP session	Skill Assessment		Physiology, General Medicine	
PA27.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	
PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
<b>Topic: Urinary Tract</b>		<b>Number of competencies: (16)</b>			<b>Number of procedures that require certification: (NIL)</b>				
PA28.1	Describe the normal histology of the kidney	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			
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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA28.3	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.4	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA28.6	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.7	Enumerate and describe the findings in glomerular manifestations of systemic disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.8	Enumerate and classify diseases affecting the tubular interstitium	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.9	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, General Surgery	
PA28.11	Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA28.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
<b>Topic: Male Genital Tract</b>									
			<b>Number of competencies: (05)</b>			<b>Number of procedures that require certification: (NIL)</b>			
PA29.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA29.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
<b>Topic: Female Genital Tract</b> <span style="margin-left: 200px;"><b>Number of competencies: (09)</b></span> <span style="margin-left: 100px;"><b>Number of procedures that require certification: (NIL)</b></span>									
PA30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the cervix	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.6	Describe the etiology and morphologic features of cervicitis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.8	Describe the etiology and morphologic features of adenomyosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA30.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
<b>Topic: Breast</b> <span style="float: right;">Number of competencies: (04)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>									
PA31.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast	S	SH	N	DOAP session	Skill Assessment		General Surgery	
PA31.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics, General Medicine	
<b>Topic: Endocrine system</b> <span style="float: right;">Number of competencies: (09)</span> <span style="float: right;">Number of procedures that require certification: (NIL)</span>									
PA32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	K	KH	Y	Lecture, Small group	Written/ Viva voce		Physiology, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.5	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.6	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology, General Medicine, General Surgery	

**Topic: Bone and soft tissue**

**Number of competencies: (05)**

**Number of procedures that require certification: (NIL)**

PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopaedics	Microbiology
PA33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	
PA33.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	
PA33.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
<b>Topic: Skin</b> <span style="float: right;">Number of competencies: (04)</span> <span style="float: right;">Number of procedures that require certification:(NIL)</span>									
PA34.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology & Leprosy	
PA34.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology & Leprosy	
PA34.4	Identify, distinguish and describe common tumors of the skin	S	SH	N	DOAP session	Skill Assessment		Dermatology, Venereology & Leprosy	
<b>Topic: Central Nervous System</b> <span style="float: right;">Number of competencies:(03)</span> <span style="float: right;">Number of procedures that require certification: (01)</span>									
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA35.3	Identify the etiology of meningitis based on given CSF parameters	S	P	Y	DOAP session	Skill Assessment	1	General Medicine	Microbiology

**Topic: Eye** **Number of competencies: (01)** **Number of procedures that require certification:(NIL)**

PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Ophthalmology	
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**Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.**  
**Column D: K – Knows, KH - Knows How, S - Shows how, P- performs independently,**  
**Column F: DOAP session – Demonstrate, Observe, Assess, Perform.**  
**Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**

**Integration**

**Human Anatomy**

AN5.8	Define thrombosis, infarction & aneurysm	K	KH	N	Lecture	Written		Pathology	Physiology
AN66.2	Describe the ultrastructure of connective tissue	K	KH	N	Lecture, Practical	Written		Pathology	
AN70.1	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN71.1	Identify bone under the microscope, Classify various types and describe the structure-function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
AN71.2	Identify cartilage under the microscope & describe various types and structure- function correlation of the same describe various types and structure-function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
<b>Physiology</b>									
PY1.4	Describe apoptosis – programmed cell death	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PY2.5	Describe different types of anemia & Jaundice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	Biochemistry
PY2.8	Describe the physiological basis of hemostasis and anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PY2.9	Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion	K	KH	Y	Lecture, Small group discussion, ECE- Visit to blood bank	Written/ Viva voce		Pathology	
PY2.11	Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT	S	SH	Y	DOAP sessions	Practical/OSPE/ viva voce		Pathology	
PY2.12	Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc	K	KH	Y	Demonstration	Written/ Viva voce		Pathology	
PY2.13	Describe steps for reticulocyte and platelet count	K	KH	Y	Demonstration sessions	Written/ Viva voce		Pathology	
PY3.6	Describe the pathophysiology of Myasthenia gravis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
<b>Biochemistry</b>									
BI2.4	Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes	K	KH	Y	Lecture, small group discussions	Written/ Viva voce		Pathology, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
BI2.5	Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions	K	KH	Y	Lecture, small group discussions	Written/ Viva voce		Pathology, General Medicine	
BI2.6	Discuss use of enzymes in laboratory investigations (Enzyme-based assays)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	
BI2.7	Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions	K	KH	Y	Lecture, Small group discussion /DOAP sessions	Written/ Viva voce		Pathology, General Medicine	
BI3.8	Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	
BI5.2	Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.11	Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.12	Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.13	Describe the functions of the kidney, liver, thyroid and adrenal glands.	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.14	Describe the tests that are commonly done in clinical practice to assess the functions of kidney, liver, thyroid and adrenal glands	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
BI6.15	Describe the abnormalities of kidney, liver, thyroid and adrenal glands	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI7.7	Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	
BI8.1	Discuss the importance of various dietary components and explain importance of dietary fibre	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.2	Describe the types and causes of protein energy malnutrition and its effects	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.4	Describe the causes (including dietary habits), effects and health risks associated with being overweight/obesity	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	
BI8.5	Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance)	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Community Medicine, General Medicine, Pediatrics	
BI10.1	Describe the cancer initiation, promotion oncogenes & oncogene activation	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	
BI10.2	Describe various biochemical tumor markers and the biochemical basis of cancer therapy	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	
BI10.3	Describe the cellular and humoral components of the immune system & describe the types and structure of antibody	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
BI10.4	Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	Physiology
BI10.5	Describe antigens and concepts involved in vaccine development	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, Pediatrics, Microbiology	
BI11.17	Explain the basis and rationale of biochemical tests done in the following conditions: diabetes mellitus, dyslipidemia, myocardial infarction, renal failure, gout, proteinuria, nephrotic syndrome, edema, jaundice, liver diseases, pancreatitis, disorders of acid-base balance, thyroid disorders	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	
<b>Microbiology</b>									
MI1.7	Describe the immunological mechanisms in health	K	KH	Y	Lecture	Written/ Viva voce			Pathology
MI1.8	Describe the mechanisms of immunity and response of the host immune system to infections	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	Pathology
MI2.1	Describe the etiologic agents in rheumatic fever and their diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.2	Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.3	Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis	S	SH	Y	DOAP session	Skill assessment		General Medicine	Pathology
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	K	KH	Y	Lecture, Small group discussion	Written/ viva voce		General Medicine	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
MI2.5	Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kala azar, malaria, filariasis and other common parasites prevalent in India	K	KH	Y	Lecture, Small group discussion	Written/ viva voce		General Medicine	Pathology
MI2.7	Describe the epidemiology, the etio-pathogenesis, evolution, complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI3.1	Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features, and diagnostic modalities of these agents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.4	Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness	S	KH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI3.6	Describe the etio-pathogenesis of Acid Peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.7	Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis, and prevention of viral hepatitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI3.8	Choose the appropriate laboratory test in the diagnosis of viral hepatitis	K	KH	Y	small group discussion, Case discussion	Written/ Viva voce/ OSPE		General Medicine	Pathology
MI5.1	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis.	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
MI8.2	Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Pathology
MI8.3	Describe the role of oncogenic viruses in the evolution of virus associated malignancy	K	KH	Y	Lecture	Written		General Medicine	Pathology
<b>Community Medicine</b>									
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology, Pathology
<b>Forensic Medicine &amp; Toxicology</b>									
FM2.1	Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical death and Brainstem death	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.2	Describe and discuss natural and unnatural deaths	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.3	Describe and discuss issues related to sudden natural deaths	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.5	Discuss moment of death, modes of death-coma, asphyxia and syncope	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.11	Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/viva voce/ OSPE			Pathology
FM2.12	Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/viva voce/ OSPE			Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
FM2.13	Describe and discuss obscure autopsy	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM3.28	Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion	K	K/KH	Y	Lecture, Small group discussion	Written/viva voce		Obstetrics & Gynaecology, Pathology	
FM6.1	Describe different types of specimens and tissues to be collected both in the living and dead: body fluids (blood, urine, semen, faeces, saliva), skin, nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting. Describe Locard's Exchange Principle	K	K/KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM14.7	Demonstrate & identify that a particular stain is blood and identify the species of its origin	S	KH	Y	Small group discussion, Lecture	Log book/ skill station/ Viva voce		Forensic Medicne, Physiology	
FM14.8	Demonstrate the correct technique to perform and identify ABO & RH blood group of a person	S	SH	Y	Small group discussion, DOAP session	Log book/ skill station/ Viva voce		Forensic Medicne, Physiology	
<b>Dermatology, Venereology &amp; Leprosy</b>									
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions	S	SH	Y	Bedside clinic	Skill assessment	1	General Medicine	Pathology, Microbiology
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology, Pathology
DR16.1	Identify and distinguish skin lesions of SLE	S	SH	Y	Bedside clinic discussion	Skill assessment	2	General Medicine	Pathology
DR16.2	Identify and distinguish Raynaud's phenomenon	S	SH	Y	Bedside clinic discussion	Skill assessment	2	General Medicine	Pathology
<b>Anesthesiology</b>									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
AS9.4	Enumerate blood products and describe the use of blood products in the preoperative period	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pathology	General Surgery
<b>ENT</b>									
EN1.2	Describe the pathophysiology of common diseases in ENT	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pathology	
<b>Ophthalmology</b>									
OP7.2	Describe and discuss the aetio-pathogenesis, stages of maturation and complications of cataract	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
OP8.1	Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Pathology	
<b>Dentistry</b>									
DE4.1	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity	K	K	N	Lecture, Small group discussion	Viva voce		Pathology	ENT
DE4.2	Discuss the role of etiological factors in the formation of precancerous /cancerous lesions	K	KH	Y	Lecture, Small group discussion	Viva voce		Pathology	ENT
DE4.3	Identify potential pre-cancerous / cancerous lesions	S	SH	N	Observation, Bed side clinics	Skill assessment		Pathology	ENT
DE4.4	Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.	A/C	SH	Y	DOAP session	Document in Log book	2	Pathology	ENT
<b>General Medicine</b>									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.2	Describe and discuss the genetic basis of some forms of heart failure	K	KH	N	Lecture, Small group discussion	Written		Pathology, Physiology	
IM1.3	Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Microbiology	
IM1.4	Stage heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.5	Describe, discuss and differentiate the processes involved in R vs L heart failure, systolic vs diastolic failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.7	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias, anemia, thyrotoxicosis, dietary factors drugs etc.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.8	Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Community Medicine	
IM2.2	Discuss the aetiology of risk factors both modifiable and non-modifiable of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.4	Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.5	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Human Anatomy, Pathology, Microbiology	
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Microbiology	
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	K	KH	Y	Lecture, Small group discussion	written		Pathology, Microbiology	
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC	K	SH	Y	Bed side clinic, Skill assessment	Skill assessment		Pathology, Microbiology	
IM4.16	Enumerate the indications and describe the findings in tests of inflammation and specific rheumatologic tests, serologic testing for pathogens including HIV, bone marrow aspiration and biopsy	K	KH	N	Lecture, Small group discussion	written		Pathology	
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment	S	SH	N	skills lab	log book documentation/ DOAP session		Pathology	



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia	K	K	Y	Lecture, Small group discussion	Written/Viva voce		Pathology, Physiology	
IM5.2	Describe and discuss the aetiology and pathophysiology of liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM5.3	Describe and discuss the pathologic changes in various forms of liver disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM5.5	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.6	Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Pharmacology	
IM5.12	Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases	S	KH	Y	Bedside clinic, DOAP session	Skill assessment		Pathology	
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	S	SH	Y	Bedside clinic, Small group discussion	viva voce/ written		Pathology, Microbiology	
IM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies	K	KH	Y	Lecture, Small group discussion	short notes/ Viva voce		Pathology, Microbiology	
IM6.6	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions	K	KH	Y	Lecture, Small group discussion	short notes/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	K	KH	Y	Bed side clinic, DOAP session, Small group discussion	written/ Skill assessment		Pathology, Microbiology	
IM6.19	Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections	K/C	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM7.1	Describe the pathophysiology of autoimmune disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM7.2	Describe the genetic basis of autoimmune disease	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM7.16	Enumerate the indications for and interpret the results of: CBC, anti CCP (Anti-cyclic citrullinated peptide), RA, ANA, DNA and other tests of autoimmunity	K	SH	Y	Bed side clinic, small group	Skill assessment/ written		Pathology	
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM8.2	Describe and discuss the pathophysiology of hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM8.3	Describe and discuss the genetic basis of hypertension	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.4	Define and classify hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.5	Describe and discuss the differences between primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.7	Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.8	Describe, discuss and identify target organ damage due to hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM9.1	Define, describe and classify anemia based on red blood cell size and reticulocyte count	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM9.2	Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM9.6	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	S	SH	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment/ written		Pathology	
IM9.7	Describe the appropriate diagnostic work up based on the presumed aetiology	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	
IM9.8	Describe and discuss the meaning and utility of various components of the hemogram	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.9	Describe and discuss the various tests for iron deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.10	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate.	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	
IM9.11	Describe, perform and interpret a peripheral smear and stool occult blood	S	SH	P	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	
IM9.12	Describe the indications and interpret the results of a bone marrow aspirations and biopsy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.13	Describe, develop a diagnostic plan to determine the aetiology of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.18	Describe the indications for blood transfusion and the appropriate use of blood components	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM10.1	Define, describe and differentiate between acute and chronic renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM10.2	Classify, describe and differentiate the pathophysiologic causes of acute renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.3	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.4	Describe the evolution, natural history and treatment of ARF	K	KH	Y	Lecture, small group	Written/ Viva voce		Pathology	
IM10.5	Describe and discuss the aetiology of CRF	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.6	Stage Chronic Kidney Disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.7	Describe and discuss the pathophysiology and clinical findings of uraemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.8	Classify, describe and discuss the significance of proteinuria in CKD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.9	Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.10	Describe and discuss the association between CKD glycemia and hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.11	Describe and discuss the relationship between CAD risk factors and CKD and in dialysis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.16	Enumerate the indications for and interpret the results of: renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap	K	KH	Y	DOAP session, Small group discussion	Skill assessment/ Written/ Viva voce		Pathology	
IM10.17	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)	S	SH	Y	DOAP session, Small group discussion	Skill assessment/ Written/ Viva voce		Pathology	
IM11.2	Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM11.3	Describe and discuss the epidemiology and pathogenesis and risk factors, economic impact and clinical evolution of type 2 diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM11.5	Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile	S	SH	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment		Pathology	
IM11.12	Perform and interpret a capillary blood glucose test	S	P	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment	2	Pathology, Biochemistry	
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick	S	P	Y	Bed side clinic, DOAP session	Skill assessment	2	Pathology, Biochemistry	
IM11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.1	Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.3	Describe and discuss the physiology of the hypothalamo-pituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function	K	K	Y	Lecture, Small group discussion	short notes		Pathology, Physiology	
IM13.1	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Biochemistry	
IM13.2	Describe the genetic basis of selected cancers	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM13.3	Describe the relationship between infection and cancers	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Microbiology	
IM13.4	Describe the natural history, presentation, course, complications and cause of death for common cancers	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology	
IM13.15	Describe the need, tests involved, their utility in the prevention of common malignancies	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pathology	
IM14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM14.3	Describe and discuss the monogenic forms of obesity	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM14.4	Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology, Community Medicine	
IM14.5	Describe and discuss the natural history of obesity and its complications	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	General Surgery
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed	S	SH	Y	DOAP session, Small group discussion, Lecture	Written/ Viva voce/ Skill assessment		Pathology	General Surgery
IM15.3	Describe and discuss the physiologic effects of acute blood and volume loss	K	K	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology, Physiology	General Surgery
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	S	SH	Y	Bedside clinic, DOAP session, Small group discussion	Skill assessment/ Short note/ Viva voce		Pathology	General Surgery

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
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	S	KH	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology	General Surgery
IM15.12	Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion	K	K	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology	General Surgery
IM15.13	Observe cross matching and blood / blood component transfusion	S	SH	Y	Bedside clinic	Short note/ Viva voce/ Skill assessment		Pathology	General Surgery
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel, sexual history and other concomitant illnesses	S	SH	Y	Bedside clinic skills lab	Skill assessment		Microbiology, Pathology	
IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination	S	SH	Y	Bedside clinic, Skills lab, Small group discussion	Skill assessment/ Short note/ Viva voce		Microbiology, Pathology	
IM16.12	Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	General Surgery
IM16.15	Distinguish, based on the clinical presentation, Crohn's disease from ulcerative colitis	S	SH	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology	General Surgery
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis	K	K	Y	Small group, Bedside clinic	Skill Assessment		Microbiology, Pathology	
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	S	SH	Y	DOAP session	Skill assessment		Microbiology, Pathology	
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	S	SH	Y	Small group discussion, Bedside clinic	Skill assessment		Microbiology, Pathology	
IM18.2	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM18.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident	S	SH	Y	Bedside clinic	Skill assessment		Pathology	
IM22.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM22.2	Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	General Surgery
IM22.4	Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM25.7	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC	K	SH	Y	Bed side clinic, Skill assessment	Skill assessment		Pathology, Microbiology	
<b>Obstetrics &amp; Gynaecology</b>									
OG10.2	Enumerate the indications and describe the appropriate use of blood and blood products, their complications and management	K	KH	Y	Lecture, Small group discussion			Pathology	
<b>Pediatrics</b>									
PE11.1	Describe the common etiology, clinical features and management of obesity in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry, Pathology	
PE11.2	Discuss the risk approach for obesity and discuss the prevention strategies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE12.7	Describe the causes, clinical features, diagnosis and management of deficiency /excess of Vitamin D ( Rickets and Hypervitaminosis D)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.8	Identify the clinical features of dietary deficiency of Vitamin D	S	p	Y	Bedside clinics, Skills lab	Document in log book	3	Biochemistry, Physiology Pathology	
PE12.9	Assess patients with Vitamin D deficiency, diagnose, classify and plan management	S	SH	Y	Bed side clinics	Document in log book		Biochemistry, Physiology, Pathology	
PE12.13	Discuss the RDA , dietary sources of Vitamin K and their role in Health and disease	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.14	Describe the causes, clinical features, diagnosis, management and prevention of Deficiency of Vitamin K	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE13.1	Discuss the RDA, dietary sources of Iron and their role in health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Biochemistry	
PE13.2	Describe the causes, diagnosis and management of Fe deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology Biochemistry	
PE13.3	Identify the clinical features of dietary deficiency of Iron and make a diagnosis	S	SH	Y	Bed side clinics, Skill Lab	Document in log book		Pathology, Biochemistry	
PE13.4	Interpret hemogram and Iron Panel	S	P	Y	Bed side clinic, Small group discussion	Skill Assessment	5	Pathology, Biochemistry	
PE13.5	Propose a management plan for Fe Deficiency Anaemia	S	SH	Y	Bed side clinics, Skill lab	Skill Assessment		Pathology, Pharmacology	
PE21.2	Enumerate the etio-pathogenesis, clinical features, complications and management of Acute post streptococcal Glomerular Nephritis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.3	Discuss the approach and referral criteria to a child with Proteinuria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE21.5	Enumerate the etio-pathogenesis clinical features, complications and management of Acute Renal Failure in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.6	Enumerate the etio-pathogenesis, clinical features, complications and management of Chronic renal Failure in Children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.7	Enumerate the etio-pathogenesis clinical features, complications and management of Wilms Tumor	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.11	Perform and interpret the common analytes in a Urine examination	S	SH	Y	Bed side clinic Labs, Skill lab	Skill assessment		Biochemistry, Pathology	
PE23.1	Discuss the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases – VSD, ASD and PDA	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.2	Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases – Fallot's Physiology	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.3	Discuss the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.4	Discuss the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.5	Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.6	Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology, Microbiology	
PE24.1	Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE24.2	Discuss the classification and clinical presentation of various types of diarrheal dehydration	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE25.1	Discuss the etio-pathogenesis, clinical presentation and management of Malabsorption in children and its causes including celiac disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE26.1	Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.2	Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.3	Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.4	Discuss the etio-pathogenesis, clinical features and management of Portal Hypertension in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology	
PE26.9	Interpret Liver Function Tests, viral markers, ultra sonogram report	S	SH	Y	Bedside clinics, Skills lab	Skill Assessment		Pathology	
PE29.1	Discuss the etio-pathogenesis, clinical features, classification and approach to a child with anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.2	Discuss the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.3	Discuss the etiopathogenesis, clinical features and management of VIT B12, Folate deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.4	Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic anaemia and hemolytic uremic syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE29.6	Discuss the cause of thrombocytopenia in children: describe the clinical features and management of Idiopathic Thrombocytopenic Purpura (ITP)	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.7	Discuss the etiology, classification, pathogenesis and clinical features of Hemophilia in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.8	Discuss the etiology, clinical presentation and management of Acute Lymphoblastic Leukemia in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.9	Discuss the etiology, clinical presentation and management of lymphoma in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
<b>General Surgery</b>									
SU2.1	Describe pathophysiology of shock, types of shock, principles of resuscitation including fluid replacement and monitoring	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
SU3.1	Describe the indications and appropriate use of blood and blood products and complications of blood transfusion.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce.		Pathology	
SU5.1	Describe normal wound healing and factors affecting healing.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Microbiology, Pathology	
SU22.2	Describe the etiopathogenesis of thyroidal swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology,	
<b>Respiratory Medicine</b>									
CT2.1	Define and classify obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.2	Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
CT2.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.6	Describe the role of the environment in the cause and exacerbation of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
CT2.7	Describe and discuss allergic and non-allergic precipitants of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology,	
CT2.11	Describe, discuss and interpret pulmonary function tests	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Physiology, Pathology	
<b>Orthopaedics</b>									
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/S H	Y	Lecture, Small group discussion, Video assisted lecture	Written/ Viva voce/ OSCE		Pathology, Microbiology	General surgery
OR4.1	Describe and discuss the clinical features, investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abscess and caries spine	K	K/KH	Y	Lecture, Small group discussion, Case discussion	Written/ Viva voce/ OSCE		Pathology	General surgery
OR10.1	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures	K	K/KH	Y	Lecture, Small group discussion, Video assisted interactive lecture	Written/ Viva voce OSCE		Pathology	General surgery, Radiotherapy
<b>Radiotherapy</b>									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/S H/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
RT1.3	Enumerate, describe and discuss classification and staging of cancer (AJCC, FIGO etc.)	K	KH	Y	Lecture	Written/ Viva voce		Pathology	General Surgery, General Medicine
RT4.5	Describe and discuss role of radiation in management of common malignancies in India (region specific)	K	KH	Y	Lecture and Bed side clinic	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology
RT4.6	Describe and discuss radiotherapy for benign disease	K	KH	Y	Lecture	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology
RT4.7	Counsel patients regarding acute and late effects of radiation and supportive care	K/A/S	KH	Y	Bed side clinic, Group discussion	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology
RT5.1	Describe and discuss cancer prevention, screening, vaccination, cancer registry	K	K	Y	Group discussion	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology



## **MALWANCHAL UNIVERSITY, INDORE**

**Curriculum implemented by statutory body (MCI/NMC) for MBBS Programme and MICROBIOLOGY course (Programme Code: - MUM-01MBB)**

**Programme name:-I M.B.B.S.  
Course Code: - MBS-202  
Course name: - MICROBIOLOGY**

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
<b>DEPARTMENT OF MICROBIOLOGY</b>									
<b>Topic: General Microbiology and Immunity</b>		<b>Number of competencies: (11)</b>			<b>Number of procedures that require certification : (01)</b>				
MI1.1	Describe the different causative agents of Infectious diseases+A208, the methods used in their detection, and discuss the role of microbes in health and disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI1.2	Perform and identify the different causative agents of Infectious diseases by Gram Stain, ZN stain and stool routine microscopy	S	P	Y	DOAP session	Skill assessment	5		
MI1.3	Describe the epidemiological basis of common infectious diseases	K	KH	Y	Lecture	Written/ Viva voce			Community Medicine
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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
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	K	KH	Y	Small group discussion, Case discussion	Written/Viva voce/ OSPE		General Surgery	
MI1.6	Describe the mechanisms of drug resistance, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
MI1.7	Describe the immunological mechanisms in health	K	KH	Y	Lecture	Written/ Viva voce			Pathology
MI1.8	Describe the mechanisms of immunity and response of the host immune system to infections	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	Pathology



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI1.9	Discuss the immunological basis of vaccines and describe the Universal Immunisation schedule	K	KH	Y	Lecture	Written/ Viva voce		Paediatrics	
MI1.10	Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection.	K	KH	Y	Lecture	Written/ Viva voce		Paediatrics	
MI1.11	Describe the immunological mechanisms of transplantation and tumor immunity	K	KH	Y	Lecture	Written/ Viva voce			
<b>Topic: CVS and Blood</b> <span style="margin-left: 200px;"><b>Number of competencies: (7)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>									
MI2.1	Describe the etiologic agents in rheumatic fever and their diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.2	Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.3	Identify the microbial agents causing Rheumatic Heart Disease & infective Endocarditis	S	SH	Y	DOAP session	Skill assessment		General Medicine	Pathology
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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.5	Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kalaazar, malaria, filariasis and other common parasites prevalent in India	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.6	Identify the causative agent of malaria and filariasis	K/S	SH	Y	DOAP session	Skill assessment		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI2.7	Describe the epidemiology, the etio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
<b>Topic: Gastrointestinal and hepatobiliary system</b> <span style="float: right;">Number of competencies: (8)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span>									
MI3.1	Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Paediatrics	Pathology
MI3.2	Identify the common etiologic agents of diarrhea and dysentery	S	SH	Y	DOAP session	Skill assessment		General Medicine, Paediatrics	
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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.4	Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness	S	KH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI3.5	Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology
MI3.6	Describe the etio-pathogenesis of Acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.7	Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI3.8	Choose the appropriate laboratory test in the diagnosis of viral hepatitis with emphasis on viral markers	K	KH	Y	Small group discussion, Case discussion	Written/ Viva voce/ OSPE		General Medicine	Pathology
<b>Topic: Musculoskeletal system skin and soft tissue infections</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span>									
MI4.1	Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
MI4.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections	K	KH	Y	Lecture	Written/ Viva voce		Orthopaedics	
MI4.3	Describe the etio-pathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy, General Surgery	
<b>Topic: Central Nervous System infections</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures that require certification : (NIL)</span>									
MI5.1	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.3	Identify the microbial agents causing meningitis	S	SH	Y	DOAP session	Skill assessment		General Medicine, Pediatrics	
<b>Topic: Respiratory tract infections</b> <span style="float: right;">Number of competencies: (3)</span> <span style="float: right;">Number of procedures that require certification : (02)</span>									
MI6.1	Describe the etio-pathogenesis, laboratory diagnosis and prevention of Infections of upper and lower respiratory tract	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)	S	P	Y	DOAP session	Skill assessment	3	General Medicine	
MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain)	S	P	Y	DOAP session	Skill assessment	3	General Medicine	
<b>Topic: Genitourinary &amp; Sexually transmitted infections</b>									
			<b>Number of competencies: (3)</b>			<b>Number of procedures that require certification : (NIL)</b>			
MI7.1	Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
MI7.2	Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology & Leprosy, Obstetrics & Gynaecology	
MI7.3	Describe the etio-pathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of Urinary tract infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
<b>Topic: Zoonotic diseases and miscellaneous</b>									
			<b>Number of competencies: (16)</b>			<b>Number of procedures that require certification : (01)</b>			
MI8.1	Enumerate the microbial agents and their vectors causing Zoonotic diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course, laboratory diagnosis and prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
MI8.2	Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Pathology
MI8.3	Describe the role of oncogenic viruses in the evolution of virus associated malignancy	K	KH	Y	Lecture	Written		General Medicine	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI8.4	Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Community Medicine	
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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Community Medicine	
MI8.6	Describe the basics of Infection control	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Community Medicine
MI8.7	Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)	S	P	Y	DOAP session	Skill assessment	3 each in (Hand hygiene & PPE)	General Surgery	Community Medicine
MI8.8	Describe the methods used and significance of assessing the microbial contamination of food, water and air	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI8.9	Discuss the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing infectious diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI8.10	Demonstrate the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing Infectious diseases	S	SH	Y	DOAP session	Skill assessment			
MI8.11	Demonstrate respect for patient samples sent to the laboratory for performance of laboratory tests in the detection of microbial agents causing Infectious diseases	A	SH	Y	DOAP session	Skill assessment			
MI8.12	Discuss confidentiality pertaining to patient identity in laboratory results	A	KH	Y	Lecture, Small group discussion	Viva voce			
MI8.13	Choose the appropriate laboratory test in the diagnosis of the infectious disease	K	KH	Y	Small group discussions, Case discussion	Written/ Viva voce/ OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI8.14	Demonstrate confidentiality pertaining to patient identity in laboratory results	A	SH	Y	DOAP session	Skill assessment		AETCOM	
MI8.15	Choose and Interpret the results of the laboratory tests used in diagnosis of the infectious diseases	K/S	SH	Y	Small group discussion, Case discussion	Written/ Viva voce/ OSPE			
MI8.16	Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)	K	K	Y	Lecture	Written/ Viva voce			Community Medicine
	*causative agents of Infectious diseases are inclusive of bacterial, viral, parasites and fungal agents causing various clinical conditions.								
	<b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b> <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b> <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b> <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b>								
<b>Integration</b>									
<b>Biochemistry</b>									
BI10.5	Describe antigens and concepts involved in vaccine development.	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Pathology, Pediatrics, Microbiology	
<b>Pathology</b>									
PA7.5	Describe the immunology and the immune response to cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.1	Describe the principles and mechanisms involved in immunity	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
PA9.2	Describe the mechanism of hypersensitivity reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.1	Define and describe the pathogenesis and pathology of malaria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA22.5	Enumerate and describe infections transmitted by blood transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		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	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	Microbiology
PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology, microscopic appearance and complications of tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic, features diagnosis and complications of infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopaedics	Microbiology
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA35.3	Identify the etiology of meningitis based on given CSF parameters	S	P	Y	DOAP session	Skill Assessment	1	General Medicine	Microbiology
<b>Pharmacology</b>									
PH1.43	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	K	KH	Y	Lecture	Written/ Viva voce		General Medicine Pediatrics	Microbiology
PH1.45	Describe the drugs used in MDR and XDR Tuberculosis	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	Microbiology
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy	Microbiology
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	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Microbiology



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
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	K	KH	Y	Lecture	Written/Viva voce			Microbiology
<b>Community Medicine</b>									
CM3.3	Describe the aetiology and basis of water borne diseases/ jaundice/hepatitis/ diarrheal diseases	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Microbiology, General Medicine, Pediatrics	
CM3.6	Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
CM3.7	Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures	S	SH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ Skill assessment		Microbiology	
CM5.7	Describe food hygiene	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures	S	SH	Y	Small group discussion, DOAP sessions	Written/ Skill assessment		General Medicine	Microbiology
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology, Pathology
CM14.1	Define and classify hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written/ Viva voce			Microbiology
CM14.2	Describe various methods of treatment of hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written/ Viva voce			Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
CM14.3	Describe laws related to hospital waste management	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
<b>Dermatology, Venereology &amp; Leprosy</b>									
DR6.1	Describe the etiology pathogenesis and diagnostic features of pediculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR7.1	Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of dermatophytes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR7.2	Identify candida species in fungal scrapings and KOH mount	S	SH	Y	DOAP session	Skill assessment			Microbiology
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology ,Pharmacology
DR8.1	Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR9.1	Classify, describe the epidemiology, etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of Leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology, Community Medicine
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR10.2	Identify spirochete in a dark ground microscopy	S	SH	Y	DOAP session	Skill assessment			Microbiology
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
DR10.6	Describe the etiology, diagnostic and clinical features of non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Microbiology
DR11.1	Describe the etiology, pathogenesis and clinical features of the dermatologic manifestations of HIV and its complications including opportunistic infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
DR11.2	Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR11.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology Microbiology
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Pathology, Microbiology
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology, Pathology
DR15.2	Identify staphylococcus on a gram stain	S	SH	Y	Bedside clinic	Skill assessment			Microbiology
DR15.3	Enumerate the indications and describe the pharmacology, indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	Microbiology, Pharmacology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
<b>Dentistry</b>									
DE1.2	Discuss the role of causative microorganisms in the aetio-pathogenesis of dental caries	K	KH	Y	Lecture, Small group discussion	Viva voce		Microbiology	
DE1.4	Discuss the role of dental caries as a focus of sepsis	K	KH	Y	Lecture, Small group discussion	Viva voce		Microbiology, General Medicine	
<b>General Medicine</b>									
IM1.3	Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Microbiology	
IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture	S	SH	Y	DOAP session	Skill assessment		Microbiology	
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease	K	KH	Y	Bedside clinic, Small group discussion	Written		Microbiology, Pharmacology	
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Human Anatomy, Pathology, Microbiology	
IM3.2	Discuss and describe the aetiology of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Microbiology	
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	KH	Y	Lecture , Small group discussion	short note/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Radiodiagnosis, Microbiology	
IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture	S	SH	Y	DOAP session	Skill assessment		Microbiology	
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Radiodiagnosis, Microbiology	
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum.	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.14	Perform and interpret a sputum gram stain and AFB	S	P	Y	DOAP session	Skill assessment		Microbiology	
IM3.19	Discuss, describe and enumerate the indications and communicate to patients on pneumococcal and influenza vaccines	S/C	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Microbiology	
IM4.1	Describe and discuss the febrile response and the influence of host immune status, risk factors and co-morbidities on the febrile response	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.2	Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel	K	K	Y	Lecture, Small group discussion	Written		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g. Dengue, Chikungunya, Typhus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM4.4	Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	K	KH	Y	Lecture, Small group discussion	Written		Pathology, Microbiology	
IM4.6	Discuss and describe the pathophysiology and manifestations of malaria	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.8	Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host, neutropenic host, nosocomial host and a host with HIV disease	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.9	Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Microbiology	
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC	K	SH	Y	Bedside clinic, Skill assessment	Skill assessment		Pathology, Microbiology	
IM4.13	Perform and interpret a sputum gram stain	S	SH	Y	DOAP session	Log book documentation		Microbiology	
IM4.14	Perform and interpret a sputum AFB	S	SH	Y	DOAP session	Log book documentation		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM4.15	Perform and interpret a malarial smear	S	SH	Y	DOAP session	Log book documentation/ Skill assessment		Microbiology	
IM4.19	Assist in the collection of blood and wound cultures	S	SH	Y	DOAP session	Log book/ documentation		Microbiology	
IM4.20	Interpret a PPD (Mantoux)	S	SH	Y	DOAP session	Log book/ documentation		Microbiology	
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs	S	SH	Y	Small group discussion	Skill assessment		Microbiology, Pharmacology	
IM4.26	Counsel the patient on malarial prevention	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	S	SH	Y	Bedside clinic, Small group discussion	Viva voce/ Written		Pathology, Microbiology	
IM5.17	Enumerate the indications precautions and counsel patients on vaccination for hepatitis	K/C	SH	Y	written Small group discussion	Written/ Viva voce		Microbiology	
IM6.1	Describe and discuss the symptoms and signs of acute HIV seroconversion	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.2	Define and classify HIV AIDS based on the CDC criteria	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.3	Describe and discuss the relationship between CDC count and the risk of opportunistic infections	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.4	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	K	KH	Y	Bedside clinic, DOAP session, Small group discussion	Written/ Skill assessment		Pathology, Microbiology	
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM6.14	Perform and interpret a gram stain of the sputum	S	P	Y	DOAP session	Skill assessment		Microbiology	
IM6.17	Describe and discuss the principles of HAART, the classes of antiretroviral used, adverse reactions and interactions	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM6.18	Describe and discuss the principles and regimens used in post exposure prophylaxis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM6.19	Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections	K/C	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM13.3	Describe the relationship between infection and cancers	K	K	Y	Lecture, Small group discussion	Short notes/ Viva voce		Pathology, Microbiology	General Surgery
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM16.1	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non-infectious causes	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
IM6.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination	S	SH	Y	Bedside clinic, Skills lab, Small group discussion	Skill assessment/ Short note/ Viva voce		Microbiology, Pathology	
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen	S	SH	Y	DOAP session	Skill assessment		Microbiology	



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM16.10	Identify Vibrio cholera in a hanging drop specimen	S	SH	Y	DOAP session	Skill Assessment		Microbiology	
IM16.11	Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Microbiology	
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea	K	K	Y	Lectures, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis	K	K	Y	Small group discussion, Bedside clinic	Skill Assessment		Microbiology, Pathology	
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	S	SH	Y	DOAP session	Skill assessment		Microbiology, Pathology	
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	S	SH	Y	Small group discussion, Bedside clinic	Skill assessment		Microbiology, Pathology	
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic disease (eg. Leptospirosis, Rabies) and non febrile infectious disease (eg. Tetanus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM25.2	Describe and discuss the common causes pathophysiology and manifestations of these diseases	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM25.3	Describe and discuss the pathophysiology and manifestations of these diseases	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM25.9	Assist in the collection of blood and other specimen cultures	S	SH	Y	DOAP session	Log book documentation		Microbiology	
IM25.11	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis	C	SH	Y	DOAP session	Skill assessment		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
<b>Pediatrics</b>									
PE19.1	Explain the components of the Universal immunization Program and the sub National Immunization Programs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.2	Explain the epidemiology of Vaccine preventable diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.3	Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.4	Define cold chain and discuss the methods of safe storage and handling of vaccines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.5	Discuss immunization in special situations – HIV positive children, immunodeficiency, preterm, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travellers	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE21.1	Enumerate the etio-pathogenesis clinical features, complications and management of Urinary Tract infection in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE23.6	Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology, Microbiology	
PE24.1	Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE24.2	Discuss the classification and clinical presentation of various types of diarrheal dehydration	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE24.5	Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti- emetics in acute diarrheal diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE24.6	Discuss the causes, clinical presentation and management of persistent diarrhoea in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE24.8	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE24.12	Perform and interpret stool examination including Hanging Drop	S	P	N	Bed side clinics, Skills lab	log book	2	Microbiology	
PE26.1	Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.2	Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.3	Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.12	Discuss the prevention of Hep B infection – Universal precautions and Immunisation	K	KH	Y	Lecture, Small group discussion activity	Written/ Viva voce		Microbiology	
PE30.1	Discuss the etio-pathogenesis, clinical features, complications, management and prevention of meningitis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.2	Distinguish bacterial, viral and tuberculous meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.13	Discuss the etio-pathogenesis, clinical features, management and prevention of Poliomyelitis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.21	Interpret and explain the findings in a CSF analysis	S	SH	Y	Small group discussion	Log book		Microbiology	Respiratory Medicine
PE34.1	Discuss the epidemiology, clinical features, clinical types, complications of Tuberculosis in Children and Adolescents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE34.2	Discuss the various diagnostic tools for childhood tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine
PE34.3	Discuss the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine Pharmacology	Respiratory Medicine
PE34.4	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine Pharmacology	Respiratory Medicine
PE34.6	Identify a BCG scar	S	P	Y	Bed side clinics, Skills lab	Skill Assessment	3	Microbiology	Respiratory Medicine
PE34.7	Interpret a Mantoux test	S	P	Y	Bed side clinics Skills lab	Skill assessment	3	Microbiology	Respiratory Medicine
PE34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis	S	SH	N	Bed side clinics, Small group discussion	Log book		Microbiology	Respiratory Medicine
PE34.10	Discuss the various samples for demonstrating the organism eg Gastric Aspirate, Sputum, CSF, FNAC	K	KH	Y	Bed side clinics, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine
PE34.11	Perform AFB staining	S	P	Y	DOAP session	Log book/journal	3	Microbiology	Respiratory Medicine
PE34.12	Enumerate the indications and Discuss the limitation of methods of culturing M.Tuberculi	K	KH	Y	Small group discussion	Written/ Viva voce		Microbiology	
<b>General Surgery</b>									
SU6.1	Define and describe the aetiology and pathogenesis of surgical infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Microbiology, Pathology	
SU13.1	Describe the immunological basis of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
SU14.1	Describe aseptic techniques, sterilization and disinfection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU15.1	Describe Classification of hospital waste and appropriate methods of disposal	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU29.3	Describe the Clinical features, Investigations and principles of management of urinary tract infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

#### Orthopaedics

OR3.1	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/SH	Y	Lecture, Small group discussion, Video assisted lecture	Written/ Viva voce/ OSCE		Pathology, Microbiology	
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#### Respiratory Medicine

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/ P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
CT1.2	Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS).	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
CT1.3	Discuss and describe the impact of confection with HIV and other co morbid conditions like diabetes on the natural history of tuberculosis	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology, Pharmacology	
CT1.7	Perform and interpret a PPD (Mantoux) and describe and discuss the indications and pitfalls of the test	S	P	Y	DOAP session	Maintenance of log book		Microbiology	
CT1.10	Perform and interpret an AFB stain	S	P	Y	DOAP session	Skill assessment	1	Microbiology	
CT1.12	Enumerate the indications for tests including: serology, special cultures and polymerase chain reaction and sensitivity testing	K	KH	Y	Small group discussion, Lecture	Short note/ Viva voce		Microbiology	
CT1.13	Describe and discuss the origins, indications, technique of administration, efficacy and complications of the BCG vaccine	K	KH	Y	Lecture, Small group discussion	Short note/ Viva voce		Microbiology	

**MALWANCHAL UNIVERSITY, INDORE**

**Curriculum implemented by statutory body (MCI/NMC) for MBBS Programme and FORENSIC MEDICINE & TOXICOLOGY course  
(Programme Code: - MUM-01MBB)**

**Programme name:-I M.B.B.S.**

**Course Code: - MBS-204**

**Course name: - FORENSIC MEDICINE & TOXICOLOGY**

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
<b>DEPARTMENT OF FORENSIC MEDICINE &amp; TOXICOLOGY</b>									
<b>Topic: General Information</b>		<b>Number of competencies: (11)</b>			<b>Number of procedures that require certification: (NIL)</b>				
FM1.1	Demonstrate knowledge of basics of Forensic Medicine like definitions of Forensic medicine, Clinical Forensic Medicine, Forensic Pathology, State Medicine, Legal Medicine and Medical Jurisprudence	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.2	Describe history of Forensic Medicine	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.3	Describe legal procedures including Criminal Procedure Code, Indian Penal Code, Indian Evidence Act, Civil and Criminal Cases, Inquest (Police Inquest and Magistrate's Inquest), Cognizable and Non-cognizable offences	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.4	Describe Courts in India and their powers: Supreme Court, High Court, Sessions court, Magistrate's Court, Labour Court, Family Court, Executive Magistrate Court and Juvenile Justice Board	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.5	Describe Court procedures including issue of Summons, conduct money, types of witnesses, recording of evidence oath, affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence & conduct of doctor in witness box	K	KH	N	Lecture, Small Group Discussion, Moot Court	Written/ Viva voce			
FM1.6	Describe Offenses in Court including Perjury; Court strictures vis-a-vis Medical Officer	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.7	Describe Dying Declaration & Dying Deposition	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.8	Describe the latest decisions/notifications/resolutions/circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc.	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM1.9	Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports especially - maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres. - maintenance of medico-legal register like accident register. - documents of issuance of wound certificate - documents of issuance of drunkenness certificate. - documents of issuance of sickness and fitness certificate. - documents for issuance of death certificate. -documents of Medical Certification of Cause of Death - Form Number4 and 4A - documents for estimation of age by physical, dental and radiological examination and issuance of certificate	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Radiodiagnosis, General Surgery, General Medicine, Pediatrics	
FM1.10	Select appropriate cause of death in a particular scenario by referring ICD 10 code	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.11	Write a correct cause of death certificate as per ICD 10 document	S	SH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
<b>Topic: Forensic Pathology</b> <span style="margin-left: 200px;"><b>Number of competencies: (35)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>									
FM2.1	Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical Death and Brainstem Death	K	KH	Y	Lecture/Small group discussion	Written/ Viva voce		Pathology	
FM2.2	Describe and discuss natural and unnatural deaths	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Pathology	
FM2.3	Describe and discuss issues related to sudden natural deaths	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Pathology	
FM2.4	Describe salient features of the Organ Transplantation and The Human Organ Transplant (Amendment) Act 2011 and discuss ethical issues regarding organ donation	K	KH	Y	Lecture/Small group discussion	Written/ Viva voce		AETCOM	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM2.5	Discuss moment of death, modes of death - coma, asphyxia and syncope	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Psychiatry, Pathology	
FM2.6	Discuss presumption of death and survivorship	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
FM2.7	Describe and discuss suspended animation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM2.8	Describe and discuss postmortem changes including signs of death, cooling of body, post-mortem lividity, rigor mortis, cadaveric spasm, cold stiffening and heat stiffening	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.9	Describe putrefaction, mummification, adipocere and maceration	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.10	Discuss estimation of time since death	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.11	Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		Pathology	
FM2.12	Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		Pathology	
FM2.13	Describe and discuss obscure autopsy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
FM2.14	Describe and discuss examination of clothing, preservation of viscera on post-mortem examination for chemical analysis and other medico-legal purposes, post-mortem artefacts	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM 2.15	Describe special protocols for conduction of medico-legal autopsies in cases of death in custody or following violation of human rights as per National Human Rights Commission Guidelines	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.16	Describe and discuss examination of mutilated bodies or fragments, charred bones and bundle of bones	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ OSPE			
FM2.17	Describe and discuss exhumation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM2.18	Crime Scene Investigation:- Describe and discuss the objectives of crime scene visit, the duties & responsibilities of doctors on crime scene and the reconstruction of sequence of events after crime scene investigation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM2.19	Investigation of anaesthetic, operative deaths: Describe and discuss special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Anesthesiology, General Surgery	
FM2.20	Mechanical asphyxia: Define, classify and describe asphyxia and medico-legal interpretation of post-mortem findings in asphyxial deaths	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.21	Mechanical asphyxia: Describe and discuss different types of hanging and strangulation including clinical findings, causes of death, post-mortem findings and medico-legal aspects of death due to hanging and strangulation including examination, preservation and dispatch of ligature material	K	KH	Y	Lecture/Small group discussion, Autopsy DOAP session	Written/ Viva voce/ OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM2.22	Mechanical asphyxia: Describe and discuss patho-physiology, clinical features, post-mortem findings and medico-legal aspects of traumatic asphyxia, obstruction of nose & mouth, suffocation and sexual asphyxia	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.23	Describe and discuss types, patho-physiology, clinical features, post mortem findings and medico-legal aspects of drowning, diatom test and, gettler test.	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.24	Thermal deaths: Describe the clinical features, post-mortem finding and medicolegal aspects of injuries due to physical agents like heat (heat-hyper-pyrexia, heat stroke, sun stroke, heat exhaustion/prostration, heat cramps [miner's cramp] or cold (systemic and localized hypothermia, frostbite, trench foot, immersion foot)	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce			
FM2.25	Describe types of injuries, clinical features, patho-physiology, post-mortem findings and medico-legal aspects in cases of burns, scalds, lightening, electrocution and radiations	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		General Surgery	
FM2.26	Describe and discuss clinical features, post-mortem findings and medico-legal aspects of death due to starvation and neglect	K	KH	Y	Lecture/Small group discussion	Written/ Viva voce			
FM2.27	Define and discuss infanticide, foeticide and stillbirth	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
FM2.28	Describe and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP session of ossification centres, Hydrostatic test, Sudden Infants Death syndrome and Munchausen's syndrome by proxy	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/Viva voce / OSCE		Pediatrics, Human Anatomy	
FM2.29	Demonstrate respect to the directions of courts, while appearing as witness for recording of evidence under oath or affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence	A and C	SH	Y	Lecture, Small group discussion, Moot Court, Court visits, Role Play	Role Play during internal assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM2.30	Have knowledge/awareness of latest decisions/notifications/resolutions/circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc	A	K	Y	Lecture/Small group discussion	Written/ Viva voce			
FM2.31	Demonstrate ability to work in a team for conduction of medico-legal autopsies in cases of death following alleged negligence medical dowry death, death in custody or following violation of human rights as per National Human Rights Commission Guidelines on exhumation	A	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.32	Demonstrate ability to exchange information by verbal, or nonverbal communication to the peers, family members, law enforcing agency and judiciary	A and C	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		AETCOM	
FM2.33	Demonstrate ability to use local resources whenever required like in mass disaster situations	A and C	KH	Y	Lecture/Small group discussion	Written/ Viva voce		Community Medicine	
FM2.34	Demonstrate ability to use local resources whenever required like in mass disaster situations	A and C	KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Medicine, AETCOM	
FM2.35	Demonstrate professionalism while conducting autopsy in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	A and C	KH/SH		Lecture, small group discussions, DOAP session	Written/ Viva voce/ OSPE		AETCOM	
<b>Topic: Clinical Forensic Medicine</b>		<b>Number of competencies:(33)</b>			<b>Number of procedures that require certification:(NIL)</b>				
FM3.1	<b>IDENTIFICATION</b> Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, stature, age determination using morphology, teeth-eruption, decay, bite marks, bones-ossification centres, medico-legal aspects of age	K	KH	Y	Lecture, Small group discussion, Bedside clinic, DOAP session	Written/Viva voce/ skill assessment		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.2	IDENTIFICATION Describe and discuss identification of criminals, unknown persons, dead bodies from the remains-hairs, fibers, teeth, anthropometry, dactylography, foot prints, scars, tattoos, poroscopy and superimposition	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM3.3	Mechanical injuries and wounds: Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds and their medico-legal aspects	K	KH	Y	Lecture, Small group discussion Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		General Surgery	
FM3.4	Mechanical injuries and wounds: Define injury, assault & hurt. Describe IPC pertaining to injuries	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
FM3.5	Mechanical injuries and wounds: Describe accidental, suicidal and homicidal injuries. Describe simple, grievous and dangerous injuries. Describe ante-mortem and post-mortem injuries	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce			
FM3.6	Mechanical injuries and wounds: Describe healing of injury and fracture of bones with its medico-legal importance	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery	
FM3.7	Describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death: Primary and Secondary	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics	
FM3.8	Mechanical injuries and wounds: Describe and discuss different types of weapons including dangerous weapons and their examination	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics	
FM3.9	Firearm injuries: Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SHP	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.10	Firearm injuries: Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/Viva voce/ OSCE		General Surgery, Orthopaedics	
FM3.11	Regional Injuries: Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session	Written/ Viva voce/ OSCE/OSPE		General Surgery, Orthopaedics	
FM3.12	Regional Injuries Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session	Written/ Viva voce/ OSCE/OSPE		General Surgery, Orthopaedics	
FM3.13	Describe different types of sexual offences. Describe various sections of IPC regarding rape including definition of rape (Section 375 IPC), Punishment for Rape (Section 376 IPC) and recent amendments notified till date	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSCE/OSPE		Obstetrics & Gynaecology	
FM3.14	SEXUAL OFFENCES Describe and discuss the examination of the victim of an alleged case of rape, and the preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Obstetrics & Gynaecology, Psychiatry	
FM3.15	SEXUAL OFFENCES Describe and discuss examination of accused and victim of sodomy, preparation of report, framing of opinion, preservation and despatch of trace evidences in such cases	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Obstetrics & Gynaecology, Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.16	SEXUAL OFFENCES Describe and discuss adultery and unnatural sexual offences- sodomy, incest, lesbianism, buccal coitus, bestiality, indecent assault and preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, Psychiatry	
FM3.17	Describe and discuss the sexual perversions fetishism, transvestism, voyeurism, sadism, necrophagia, masochism, exhibitionism, frotteurism, Necrophilia	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, Psychiatry	
FM3.18	Describe anatomy of male and female genitalia, hymen and its types. Discuss the medico-legal importance of hymen. Define virginity, defloration, legitimacy and its medicolegal importance	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
FM3.19	Discuss the medicolegal aspects of pregnancy and delivery, signs of pregnancy, precipitate labour superfoetation, superfecundation and signs of recent and remote delivery in living and dead	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
FM3.20	Discuss disputed paternity and maternity	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
FM3.21	Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC&PNDT) - Prohibition of Sex Selection Act 2003 and Domestic Violence Act 2005	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, AETCOM	
FM3.22	Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, General Medicine	
FM3.23	Discuss Sterilization of male and female, artificial insemination, Test Tube Baby, surrogate mother, hormonal replacement therapy with respect to appropriate national and state laws	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.24	Discuss the relative importance of surgical methods of contraception (vasectomy and tubectomy) as methods of contraception in the National Family Planning Programme	K	K/KH	N	Lecture, Small group discussion	Written		Obstetrics & Gynaecology	
FM3.25	Discuss the major results of the National Family Health Survey	K	K/KH	N	Lecture	Written		Obstetrics & Gynaecology	
FM3.26	Discuss the national Guidelines for accreditation, supervision & regulation of ART Clinics in India	K	K/KH	Y	Lecture, Small group discussion	Written		Obstetrics & Gynaecology	
FM3.27	Define, classify and discuss abortion, methods of procuring MTP and criminal abortion and complication of abortion. MTP Act 1971	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, AETCOM	
FM3.28	Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, Pathology	
FM3.29	Describe and discuss child abuse and battered baby syndrome	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
FM3.30	Describe and discuss issues relating to torture, identification of injuries caused by torture and its sequelae, management of torture survivors	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM3.31	Torture and Human rights Describe and discuss guidelines and Protocols of National Human Rights Commission regarding torture	K	K/KH	N	Lecture/Small group discussion	Written/ Viva voce			
FM3.32	Demonstrate the professionalism while preparing reports in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	A and C	SH	Y	Lecture, Small group discussion	OSPE/Viva voce		AETCOM	
FM3.33	Should be able to demonstrate the professionalism while dealing with victims of torture and human right violations, sexual assaults- psychological consultation, rehabilitation	A and C	K/KH/S H	Y	Lecture/Small group discussion	Written/ Viva voce		AETCOM	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
<b>Topic: Medical Jurisprudence (Medical Law and ethics)</b>		<b>Number of competencies: (30)</b>			<b>Number of procedures that require certification : (NIL)</b>				
FM4.1	Describe Medical Ethics and explain its historical emergence	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.2	Describe the Code of Medical Ethics 2002 conduct, Etiquette and Ethics in medical practice and unethical practices & the dichotomy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.3	Describe the functions and role of Medical Council of India and State Medical Councils	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.4	Describe the Indian Medical Register	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.5	Rights/privileges of a medical practitioner, penal erasure, infamous conduct, disciplinary Committee, disciplinary procedures, warning notice and penal erasure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.6	Describe the Laws in Relation to medical practice and the duties of a medical practitioner towards patients and society	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.7	Describe and discuss the ethics related to HIV patients	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.8	Describe the Consumer Protection Act-1986 (Medical Indemnity Insurance, Civil Litigations and Compensations), Workman's Compensation Act & ESI Act	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.9	Describe the medico - legal issues in relation to family violence, violation of human rights, NHRC and doctors	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.10	Describe communication between doctors, public and media	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.11	Describe and discuss euthanasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM4.12	Discuss legal and ethical issues in relation to stem cell research	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.13	Describe social aspects of Medico-legal cases with respect to victims of assault, rape, attempted suicide, homicide, domestic violence, dowry- related cases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.14	Describe & discuss the challenges in managing medico-legal cases including development of skills in relationship management – Human behaviour, communication skills, conflict resolution techniques	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.15	Describe the principles of handling pressure – definition, types, causes, sources and skills for managing the pressure while dealing with medico-legal cases by the doctor	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.16	Describe and discuss Bioethics	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.17	Describe and discuss ethical Principles: Respect for autonomy, non-maleficence, beneficence & justice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.18	Describe and discuss medical negligence including civil and criminal negligence, contributory negligence, corporate negligence, vicarious liability, Res Ipsa Loquitur, prevention of medical negligence and defenses in medical negligence litigations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.19	Define Consent. Describe different types of consent and ingredients of informed consent. Describe the rules of consent and importance of consent in relation to age, emergency situation, mental illness and alcohol intoxication	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.20	Describe therapeutic privilege, Malingering, Therapeutic Misadventure, Professional Secrecy, Human Experimentation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM4.21	Describe Products liability and Medical Indemnity Insurance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.22	Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.23	Describe the modified Declaration of Geneva and its relevance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.24	Enumerate rights, privileges and duties of a Registered Medical Practitioner. Discuss doctor- patient relationship: professional secrecy and privileged communication	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.25	Clinical research & Ethics Discuss human experimentation including clinical trials	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.26	Discuss the constitution and functions of ethical committees	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.27	Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.28	Demonstrate respect to laws relating to medical practice and Ethical code of conduct prescribed by Medical Council of India and rules and regulations prescribed by it from time to time	A and C	SH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.29	Demonstrate ability to communicate appropriately with media, public and doctors	A and C	KH/SH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.30	Demonstrate ability to conduct research in pursuance to guidelines or research ethics	A and C	KH/SH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
<b>Topic: Forensic Psychiatry</b>		<b>Number of competencies: (06)</b>			<b>Number of procedures that require certification: (NIL)</b>				
FM5.1	Classify common mental illnesses including post-traumatic stress disorder (PTSD)	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM5.2	Define, classify and describe delusions, hallucinations, illusion, lucid interval and obsessions with exemplification	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
FM5.3	Describe Civil and criminal responsibilities of a mentally ill person	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
FM5.4	Differentiate between true insanity from feigned insanity	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
FM5.5	Describe & discuss Delirium tremens	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry, General Medicine	
FM5.6	Describe the Indian Mental Health Act, 1987 with special reference to admission, care and discharge of a mentally ill person	K	K/KH	N	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
<b>Topic: Forensic Laboratory investigation in medical legal practice</b>		<b>Number of competencies: (03)</b>			<b>Number of procedures that require certification: (NIL)</b>				
FM6.1	Describe different types of specimen and tissues to be collected both in the living and dead: Body fluids (blood, urine, semen, faeces saliva), Skin, Nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting. Describe Locard's Exchange Principle	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
FM6.2	Describe the methods of sample collection, preservation, labelling, dispatch, and interpretation of reports	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM6.3	Demonstrate professionalism while sending the biological or trace evidences to Forensic Science laboratory, specifying the required tests to be carried out, objectives of preservation of evidences sent for examination, personal discussions on interpretation of findings	A and C	KH/SH	Y	Lecture, Small group discussions, DOAP sessions	Viva voce / OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
<b>Topic: Emerging technologies in Forensic Medicine</b>		<b>Number of competencies: (01)</b>			<b>Number of procedures that require certification:(NIL)</b>				
FM7.1	Enumerate the indications and describe the principles and appropriate use for: - DNA profiling Facial reconstruction - Polygraph (Lie Detector) - Narcoanalysis, - Brain Mapping, - Digital autopsy, - Virtual Autopsy, - Imaging technologies	K	K/KH	N	Lecture, Small group discussion	Written/ Viva voce			
<b>Topic: Toxicology: General Toxicology</b>		<b>Number of competencies: (10)</b>			<b>Number of procedures that require certification: (NIL)</b>				
FM8.1	Describe the history of Toxicology	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.2	Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.3	Describe the various types of poisons, Toxicokinetics, and Toxicodynamics and diagnosis of poisoning in living and dead	K	K/KH	Y	Lecture, Small group discussion	Written/viva voce		Pharmacology	
FM8.4	Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.5	Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis	K	K/KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		Pharmacology	
FM8.6	Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM8.7	Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM8.8	Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM8.9	Describe the procedure of intimation of suspicious cases or actual cases of foul play to the police, maintenance of records, preservation and despatch of relevant samples for laboratory analysis.	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM8.10	Describe the general principles of Analytical Toxicology and give a brief description of analytical methods available for toxicological analysis: Chromatography – Thin Layer Chromatography, Gas Chromatography, Liquid Chromatography and Atomic Absorption Spectroscopy	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
<b>Topic: Toxicology : Chemical Toxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (06)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>									
FM9.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.2	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM9.3	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.4	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.5	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.6	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	

**Topic: Toxicology : Pharmaceutical Toxicology**

**Number of competencies: (01)**

**Number of procedures that require certification : (NIL)**



Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SHP	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM10.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: i. Antipyretics – Paracetamol, Salicylates ii. Anti-Infectives (Common antibiotics – an overview) iii. Neuropsychotoxicology Barbiturates, benzodiazepins phenytoin, lithium, haloperidol, neuroleptics, tricyclics iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis vi. Gastro-Intestinal and Endocrinal Drugs – Insulin	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
<b>Topic: Toxicology : Biotoxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>									
FM11.1	Describe features and management of Snake bite, scorpion sting, bee and wasp sting and spider bite	K	K/KH	Y	Lecture, Small group discussion, Autopsy	Written/ Viva voce		General Medicine	
<b>Topic: Toxicology : Sociomedical Toxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (01)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>									
FM12.1	Describe features and management of abuse/poisoning with following camicals: Tobacco, cannabis, amphetamines, cocaine, hallucinogens, designer drugs & solvent	K	K/KH	Y	Lecture, Small group discussion, Autopsy	Written/ Viva voce		General Medicine	
<b>Topic: Toxicology : Environmental Toxicology</b> <span style="margin-left: 200px;"><b>Number of competencies: (02)</b></span> <span style="margin-left: 200px;"><b>Number of procedures that require certification : (NIL)</b></span>									
FM13.1	Describe toxic pollution of environment, its medico-legal aspects & toxic hazards of occupation and industry	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
FM13.2	Describe medico-legal aspects of poisoning in Workman's Compensation Act	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
<b>Topic: Skills in Forensic Medicine &amp; Toxicology</b>		<b>Number of competencies: (22)</b>			<b>Number of procedures that require certification: (NIL)</b>				
FM14.1	Examine and prepare Medico-legal report of an injured person with different etiologies in a simulated/ supervised environment	S	SH/P	Y	Bedside clinic (ward/casualty), Small group discussion	Log book/ Skill station/ Viva voce / OSCE			
FM14.2	Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment	S	SH	Y	Bedside clinic (ward/casualty), Small Group discussion	Log book/ Skill station/ Viva voce / OSCE		General Medicine	
FM14.3	Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination	S	SH	Y	Bedside clinic, Small Group discussion, DOAP session	Skill lab/ Viva voce		General Medicine	
FM14.4	Conduct and prepare report of estimation of age of a person for medico-legal and other purposes & prepare medico-legal report in a simulated/ supervised environment	S	KH	Y	Small group discussion, Demonstration	Log book/ Skill station/ Viva voce / OSCE			
FM14.5	Conduct & prepare post-mortem examination report of varied etiologies (at least 15) in a simulated/ supervised environment	S	KH	Y	Small group discussion, Autopsy, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.6	Demonstrate and interpret medico-legal aspects from examination of hair (human & animal) fibre, semen & other biological fluids	S	KH	Y	Small group discussion, Lecture	Log book/ Skill station/ Viva voce / OSCE			
FM14.7	Demonstrate & identify that a particular stain is blood and identify the species of its origin	S	KH	Y	Small group discussion, Lecture	Log book/Skill station/Viva voce		Pathology, Physiology	
FM14.8	Demonstrate the correct technique to perform and identify ABO & RH blood group of a person	S	SH	Y	Small group discussion, DOAP session	Log book/Skill station/Viva voce		Pathology, Physiology	
FM14.9	Demonstrate examination of & present an opinion after examination of skeletal remains in a simulated/ supervised environment	S	SH	Y	Small group discussion, DOAP session	Log book/Skill station/Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM14.10	Demonstrate ability to identify & prepare medicolegal inference from specimens obtained from various types of injuries e.g. contusion, abrasion, laceration, firearm wounds, burns, head injury and fracture of bone	S	KH	Y	Small group discussion, DOAP session	Log book/Skill station/ Viva voce/ OSPE			
FM14.11	To identify & describe weapons of medicolegal importance which are commonly used e.g. lathi, knife, kripa, axe, gandasa, gupta, farsha, dagger, bhalla, razor & stick. Able to prepare report of the weapons brought by police and to give opinion regarding injuries present on the person as described in injury report/ PM report so as to connect weapon with the injuries. (Prepare injury report/ PM report must be provided to connect the weapon with the injuries)	S	KH	Y	Small group discussion, DOAP session	Log book/Skill station/ Viva voce/ OSPE			
FM14.12	Describe the contents and structure of bullet and cartridges used & to provide medico-legal interpretation from these	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce			
FM14.13	To estimate the age of foetus by post-mortem examination	S	KH	Y	Small group discussion, DOAP session	Theory/ Clinical assessment/ Viva voce			
FM14.14	To examine & prepare report of an alleged accused in rape/unnatural sexual offence in a simulated/ supervised environment	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.15	To examine & prepare medico-legal report of a victim of sexual offence/unnatural sexual offence in a simulated/ supervised environment	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.16	To examine & prepare medico-legal report of drunk person in a simulated/ supervised environment	S	KH	Y	Small group discussion, Bed side clinic, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.17	To identify & draw medico-legal inference from common poisons e.g. datura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.	S	KH	Y	Small group discussion, DOAP session	Log book/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM14.18	To examine & prepare medico-legal report of a person in police, judicial custody or referred by Court of Law and violation of human rights as requirement of NHRC, who has been brought for medical examination	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.19	To identify & prepare medico-legal inference from histo-pathological slides of Myocardial Infarction, pneumonitis, tuberculosis, brain infarct, liver cirrhosis, brain haemorrhage, bone fracture, Pulmonary oedema, brain oedema, soot particles, diatoms & wound healing	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce			
FM14.20	To record and certify dying declaration in a simulated/ supervised environment	S	KH	Y	Small group discussion, Role Play, Bed side clinic DOAP session	Log book/ Skill station/ Viva voce /OSCE			
FM14.21	To collect, preserve, seal and dispatch exhibits for DNA-Finger printing using various formats of different laboratories.	S	KH	Y	Small group discussion, Lecture	Log book/ Skill station/Viva voce			
FM14.22	To give expert medical/ medico-legal evidence in Court of law	S	KH	Y	Small group discussion, Lecture, DOAP session, role play, Court Visits	Log book/ Viva voce/OSCE			
<p><b>Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.</b>  <b>Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,</b>  <b>Column F: DOAP session – Demonstrate, Observe, Assess, Perform.</b>  <b>Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation</b></p>									
<b>Integration</b>									
<b>Human Anatomy</b>									
AN14.3	Describe the importance of ossification of lower end of femur & upper end of tibia	K	KH	Y	Lecture	Viva voce/Practicals		Forensic Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
<b>Pharmacology</b>									
PH1.22	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	Forensic Medicine
PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	K	KH	Y	Small group discussion	short note/Viva voce			Forensic Medicine
<b>Radiodiagnosis</b>									
RD1.13	Describe the components of the PC & PNDT act and its medicolegal implications	K	KH	Y	Lecture, Small group discussion			Obstetrics & Gynaecology, Forensic Medicine	
<b>Psychiatry</b>									
PS19.3	Describe and discuss the basic legal and ethical issues in psychiatry	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine AETCOM	
<b>General Medicine</b>									
IM20.1	Enumerate the poisonous snakes of your area and describe the distinguishing marks of each	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient with a snake bite in the field	S	SH	Y	DOAP session	Skill assessment/ Written/ Viva voce		Forensic Medicine	
IM20.3	Describe the initial approach to the stabilisation of the patient who presents with snake bite	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine	
IM20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite	S	SH	Y	Bedside clinic, DOAP session	Skill assessment		Forensic Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.5	Observe and describe the functions and role of a poison center in suspected poisoning	S	KH	Y	DOAP session	document in log book		Forensic Medicine, Pharmacology	
IM21.6	Describe the medico legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico legal report on a suspected poisoning	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Forensic Medicine, Pharmacology	
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy	A/C	SH	Y	DOAP session	Skill assessment		Forensic Medicine, Pharmacology	
IM21.8	Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture	K	KH	Y	DOAP session	Skill assessment		Forensic Medicine, Psychiatry	
<b>Obstetrics &amp; Gynaecology</b>									
OG1.3	Define and Discuss still birth and abortion	K	KH	Y	Lecture, Small group discussions	Short notes		Forensic Medicine	
OG9.2	Describe the steps and observe/ assist in the performance of an MTP evacuation	S	SH	Y	DOAP session, Bedside clinic	Viva voce		Forensic Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
OG20.1	Enumerate the indications and describe and discuss the legal aspects, indications, methods for first and second trimester MTP; complications and management of complications of medical termination of pregnancy	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Forensic Medicine	
OG20.2	In a simulated environment administer informed consent to a person wishing to undergo medical termination of pregnancy	S/A/C	SH	Y	DOAP session	Skill assessment		Forensic Medicine	
OG20.3	Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC& PNDT) Act 1994 & its amendments	K	K/KH	Y	Lecture, Small group discussions	Written/ Viva voce		Forensic Medicine	
<b>General Surgery</b>									
SU8.1	Describe the principles of Ethics as it pertains to surgery	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ skill assessment		Forensic Medicine, AETCOM	
SU8.2	Demonstrate Professionalism and empathy to the patient undergoing surgery	A/C	SH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Forensic Medicine, AETCOM	
SU8.3	Discuss Medico legal issues in surgical practice	A/C	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ skill assessment		Forensic Medicine, AETCOM	