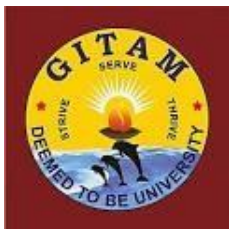


**GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)  
(Deemed to be University)  
VISAKHAPATNAM \* HYDERABAD \* BENGALURU**

**Accredited by NAAC with A<sup>+</sup> Grade**



**REGULATION AND SYLLABUS  
OF  
MBBS**

**(w.e.f. 2019-20 admitted batch)**

INSTRUCTIONS TO THE PAPER SETTERS

PAPER -I

<u>UNITS</u>	<u>DESCRIPTION</u>	<u>REMARKS</u>
I	GENERAL ANATOMY	ONLY SHORT QUESTIONS
II	UPPER LIMB	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
III	THORAX	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
IV	HEAD AND NECK	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
V	NEUROANATOMY	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
VI	APPLIED ANATOMY	ONLY VERY SHORT QUESTIONS



NOTE:

- a) IF THE PAPER SETTER CHOOSES ESSAY FROM ANY UNIT (UNITS 1 to 5 IN PAPER – I AND UNITS 1 AND 2 IN PAPER – II) HE SHOULD AVOID FURTHER QUESTIONS FROM THAT UNIT . STRUCTURED ESSAY: AN AVERAGE STUDENT SHOULD BE ABLE TO ANSWER IT .
- b) 50% OF REST OF QUESTIONS SHOULD BE ANSWERED BY ALL AVERAGE STUDENTS.

## SYLLABUS OF ANATOMY

### PAPER I

- 1) **GENERAL ANATOMY** (INTRODUCTION TO ALL THE SYSTEMS OF THE HUMAN BODY),SKELETON,JOINTS ,MUSCULAR SYSTEM, CIRCULATORY SYSTEM, LYMPHATIC SYSTEM, NERVOUS SYSTEM, SKIN AND FASCIAE,CONNECTIVE TISSUE, LIGAMENTS AND RAPHE.
- 2) **UPPER LIMB:** BONES OF UPPER LIMB, PECTORAL REGION, AXILLA, BACK, SCAPULAR REGION, CUTANEOUS NERVES, SUPERFICIAL VEINS AND LYMPHATIC DRAINAGE OF UPPER LIMB , FOREARM AND HAND , JOINTS OF UPPER LIMBAND SURFACE MARKING, RADIOLOGICAL ANATOMY AND COMPARISION OF UPPER AND LOWER LIMBS .
- 3) **THORAX:** BONES AND JOINTS OF THORAX, WALL OF THORAX, THORACIC CAVITY AND PLEURAE, LUNGS ,MEDIASTINUM, PERICARDIUM AND HEART, SUPERIOR VENA CAVA ,AORTA, AND PULMONARY TRUNK, TRACHEA, OESOPHAGUS, THORACIC DUCT, SURFACE MARKING AND RADIOLOGICAL ANATOMY OF THORAX.
- 4) **HEAD AND NECK :** INTRODUCTION AND OSTEOLOGY OF HEAD AND NECK , SCALP, TEMPLE ,FACE, SIDE OF THE NECK , ANTERIOR TRIANGLE OF NECK, PAROTID REGION , TEMPORAL , INFRATEMPORAL REGION, SUBMANDIBULAR REGION, STRUCTURES IN THE NECK,PREVERTEBRAL AND PARAVERTABRAL REGIONS BACK OF THE NECK, CONTENTS OF VERTEBRAL CANAL , CRANIAL CAVITY , CONTENTS OF THE ORBIT, MOUTH AND PHARYNX,NOSE , PARANASAL SINUSES, LARYNX, TONGUE, EAR, EYE BALL, SURFACE MARKING AND RADIOLOGICAL ANATOMY OF HEAD AND NECK.
- 5) **NEUROANATOMY:** MENINGES OF THE BRAIN AND CEREBROSPINAL FLUID, SPINAL CORD, CRANIAL NERVES BRAIN STEM, CEREBELLUM, FOURTH VENTRICLE, CEREBRUM THIRD VENTRICLE, DIENCHEPHALON, LATERAL VENTRICLE ,BASAL GANGLIA , LIMBIC SYSTEM, BLOOD SUPPLY OF SPINAL CORD AND BRAIN , SURFACE MARKING AND RADIOLOGICAL ANATOMY .
- 6) **APPLIED ANATOMY**



# LIST OF BOOKS RECOMMENDED IN ANATOMY

## I .Gross Anatomy

1. B.D Chaurasia's Human Anatomy Regional and Applied Dissection and Clinical Vol.1,2,3,-7<sup>th</sup> Edition
2. Essentials of Human Anatomy, A.K.Datta , Vol.1,2,3,
3. Textbook of Anatomy, Vol.1,2,3 , Inderbir singh 6<sup>th</sup> Edition
4. B.D Chaurasia's Hand book of General Anatomy - 5<sup>th</sup> Edition
5. Text book of Human Osteology , Jaypee Brothers , I.B.Singh

## Reference books

- 1.Gray's Anatomy 40<sup>th</sup> Edition

## Dissection Manuals

1. Gray's clinical Photographic Dissector of the Human Body Marios Loukas
2. Cunningham's Manual of Practical Anatomy G.L,Romanes, Vol. I, II & III, 15<sup>th</sup> Edition

## II . Histology

1. Atlas of Histology with functional correlation. Di Fiore's International Edition 12<sup>th</sup> Edition
2. Text book of Human Histology , 7<sup>th</sup> Edition, Inderbir Singh.

## III. Embryology

1. Human Embryology, 10<sup>th</sup> Edition, Inderbir Singh
2. Text book of Human Embryology, A.K.Datta

## v. Neuroanatomy

1. Text book of Human Neuroanatomy (fundamental & clinical ) 9<sup>th</sup> Edition, Inderbir Singh
2. Clinical Neuroanatomy , 2<sup>nd</sup> Edition , Vishram Singh

INSTRUCTIONS TO THE PAPER SETTERS

PAPER -I

<u>UNITS</u>	<u>DESCRIPTION</u>	<u>REMARKS</u>
I	GENERAL ANATOMY	ONLY SHORT QUESTIONS
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IV	HEAD AND NECK	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
V	NEUROANATOMY	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
VI	APPLIED ANATOMY	ONLY VERY SHORT QUESTIONS

PAPER II

<u>UNITS</u>	<u>DESCRIPTION</u>	<u>REMARKS</u>
I	LOWER LIMB	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
II	ABDOMEN AND PELVIS	ESSAY/SHORT NOTES/VERY SHORT QUESTIONS
III	APPLIED ANATOMY	VERY SHORT QUESTIONS
IV	EMBRYOLOGY INCLUDING GENETICS	SHORT QUESTIONS AND VERY SHORT QUESTIONS
V	HISTOLOGY	SHORT QUESTIONS



NOTE:

- a) IF THE PAPER SETTER CHOOSES ESSAY FROM ANY UNIT (UNITS 1 to 5 IN PAPER – I AND UNITS 1 AND 2 IN PAPER – II) HE SHOULD AVOID FURTHER QUESTIONS FROM THAT UNIT . STRUCTURED ESSAY: AN AVERAGE STUDENT SHOULD BE ABLE TO ANSWER IT .
  
- b) 50% OF REST OF QUESTIONS SHOULD BE ANSWERED BY ALL AVERAGE STUDENTS.

## SYLLABUS OF ANATOMY

## PAPER II

- 1) **LOWER LIMB** : BONES OF LOWER LIMB , FRONT OF THIGH, MEDIAL SIDE OF THIGH, GLEUTEAL REGION, POPLITEAL FOSSA, BACK OF THIGH, (FRONT, LATERAL AND MEDIAL SIDES OF LEG AND DORSUM OF FOOT), BACK OF LEG, SOLE OF FOOT, VENOUS AND LYMPHATIC DRAINAGE, JOINTS OF LOWER LIMB, ARCHES OF FOOT, SURFACE AND RADIOLOGICAL ANATOMY.
- 2) **ABDOMEN AND PELVIS**: ANTERIOR ABDOMINAL WALL MALE EXTERNAL GENITALIA, ABDOMINAL CAVITY AND PERITONEUM, ABDOMINAL PART OF OESOPHAGUS AND STOMACH, SMALL AND LARGE INTESTINE, LARGE BLOOD VESSELS OF THE GUT, EXTRAHEPATIC BILIARY APPARATUS, SPLEEN , PANCREAS AND LIVER, KIDNEY AND URETER, SUPRARENAL GLAND AND CHROMAFFIN SYSTEM, DIAPHRAGM, POSTERIOR ABDOMINAL WALL PERITONEUM, PELVIS : URINARY BLADDER AND URETHRA, FEMALE REPRODUCTIVE ORGANS , MALE REPRODUCTIVE ORGANS, RECTUM AND ANAL CANAL WALLS OF PELVIS , SURFACE MARKING OF ABDOMEN AND PELVIS AND RADIOLOGICAL ANATOMY.
- 3) **APPLIED ANATOMY**
- 4) **EMBRYOLOGY** . a. GENERAL EMBRYOLOGY
  - i. b. SYSTEMIC EMBRYOLOGY: MUSCULO SKELETAL SYSTEM , SKIN , DEVELOPMENT OF MAMMARY GLAND , CARDIOVASCULAR SYSTEM INCLUDING HEART, LYMPHATIC SYSTEM , BRANCHIAL APPARATUS, DEVELOPMENT OF FACE , PALATE, TEETH, GASTROINTESTINAL SYSTEM , ASSOCIATED GLANDS, RESPIRATORY SYSTEM, GENITOURINARY SYSTEM AND NERVOUS SYSTEM .
- 5) **HISTOLOGY** : a) GENERAL HISTOLOGY  
EPITHELIA, GLANDS, GENERAL CONNECTIVE TISSUE, CARTILAGE, BONE, MUSCULAR TISSUE, LYMPHATICS AND LYMPHOID TISSUE  
  
b) SYSTEMIC HISTOLOGY:  
  
NERVOUS SYSTEM, SKIN AND ITS APPENDAGES, THE CARDIOVASCULAR SYSTEM, RESPIRATORY SYSTEM, DIGESTIVE SYSTEM : ( ORAL CAVITY AND RELATED STRUCTURES, OESOPHAGUS, STOMACH AND INTESTINES, HEPATOBILIARY SYSTEM AND PANCREAS), URINARY SYSTEM , MALE REPRODUCTIVE SYSTEM, FEMALE REPRODUCTIVE SYSTEM, ENDOCRINE SYSTEM, SPECIAL SENSES : EYE AND EAR.  
  
**GENETICS**: INTRODUCTION, MITOSIS AND MEIOSIS, NORMAL CHROMOSOMAL PATTERN, MUTATION, CULTURES OF CHROMOSOMES (KARYOTYPING) , ABNORMALITY OF CHROMOSOMES ( NUMERICAL AND STRUCTURAL) LINKAGE.



# LIST OF BOOKS RECOMMENDED IN ANATOMY

## I. Gross Anatomy

1. B.D Chaurasia's Human Anatomy Regional and Applied Dissection and Clinical Vol.1,2,3,-7<sup>th</sup> Edition
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2. Clinical Neuroanatomy , 2<sup>nd</sup> Edition , Vishram Singh

Distribution of chapters and suggested marks in parenthesis for Paper I and Paper II in Physiology for University examination are as follows

*Biochemistry*  
Division of syllabus for university exam

**PAPER-I**

**PAPER-II**

- |   |  |
|---|--|
| 1. Enzymes  | 1. Protein Chemistry and Metabolism                      |
| 2. Biological Oxidation   | 2. Mineral metabolism                                    |
| 3. Detoxification and free radicals                                     | 3. Nucleic acid chemistry and<br>Metabolism              |
| 4. Carbohydrate Chemistry and Metabolism                                | 4. Genetics  |
| 5. Vitamins   | 5. Hormones  |
| 6. Nutrition  | 6. Functional tests                                      |
| 7. Lipid Chemistry and Metabolism                                       | 7. Plasma Proteins and<br>Immunoglobulins                |
| 8. Hemoglobin Structure, functions<br>Porphyrins and Hemoglobinopathies | 8. Biological membranes                                  |
| 9. Cell structure and its functions                                     | 9. Carcinogens   |
|   | 10. Acid-base balance and water –<br>Electrolyte balance |

### (iii) Syllabus of Biochemistry

#### Theory

Sl. No.	Name of the Unit	No. of Hours
1.	Introduction to biochemistry	1
2.	Cell- Molecular & functional organization	2
3.	Chemistry of Carbohydrates:	5
	a) Classification of Carbohydrates:	
	b) Structural and functional aspects of Mono-saccharides, Disaccharides, Homo and Hetero Polysaccharides	
4.	Chemistry of Lipids:	4
	a) Classification	
	b) Structural and functional aspects of simple compound and derived lipids including saturated, unsaturated and Essential Fatty acids.	
5.	Chemistry of Proteins:	8
	a) Classification & functional aspects.	
	b) Electrophoretic separation of proteins	
	c) Classification and Properties of amino acids	
	d) Separation of Amino acids by Chromatography	
	e) Outlines of elucidation of Protein Structure.	
	f) Biologically active Peptides	
6.	Nucleic Acids:	4
	a) Bases, nucleotides, Nucleic acids, (structural and functional aspects)	
	b) synthetic nucleotides	
7.	Enzymes:	6
	a) Classification	



- b) Mechanism of Enzyme action
- c) Enzyme kinetics
- d) Factors affecting enzyme activity
- e) Isoenzymes
- f) Coenzymes
- g) Enzyme Inhibition
- h) Cellular & Plasma enzymes
- i) Diagnostic importance of Enzymes
- j) Regulation of Enzyme activity

**8. Biological Oxidation:**

4

- a) Bioenergetics
- b) Exergonic & Endergonic reaction
- c) Oxidases
- d) Electron Transport Chain
- e) Oxidative Phosphorylation
- f) High energy Compounds
- g) Low Energy Compounds

**9. Vitamins:**

10

- a) Classification
- b) Structure, Sources, Daily requirement, Physiological role and deficiency disorders of Fat soluble vitamins – A,D,E,& K and water soluble vitamins-B complex group and Vit. C.

**10. Carbohydrate Metabolism:**

10

- a) Digestion      b) Absorption
- c) Metabolism of Glucose

- i) Entry of Glucose into Cells
- ii) Glycolysis
- iii) Rapaport – Leubering Cycle
- iv) Pyruvate Dehydrogenase Complex
- v) Citric Acid Cycle
- vi) Gluconeogenesis
- vii) Glycogenesis
- viii) Glycogenolysis
- ix) Glycogen Storage Diseases
- x) Hexose Mono Phosphate Shunt Pathway
- xi) Uronic Acid Pathway
- xii) Metabolism of Galactose & Fructose
- xiii) Blood Glucose Homeostasis, Glucose Tolerance Test,  
Diabetes mellitus and Hypoglycemia

**11. Metabolism of Proteins:**

10

- a) Protein Digestion & Absorption
- b) General Pathways of metabolism including
- c) Transamination & Deamination and Ammonia transport
- d) Urea Cycle
- e) Metabolism of individual amino acids & Molecular disorders.
- f) Creatine & Creatinine

**12. Metabolism of Nucleic Acids:**

9

- a) Outlines of Metabolism of Purines & Pyrimidines & Metabolic disorders
- b) DNA replication and transcription

- c) Protein Biosynthesis (Translation)
- d) Regulation of Gene Expression
- e) Outlines of Genetic Engineering

**13. Lipid Metabolism:**

9

- a) Digestion & Absorption
- b) Plasma Lipids
- c) Mobilisation of Fats from adipose tissue
- d) Oxidation of Fatly acids
- e) Biosynthesis of Fatty acids
- f) Metabolism of Phospholipids and triacylglycerols
- g) Metabolism of Ketone bodies
- h) Metabolism of Cholesterol
- i) Lipo Proteins – Metabolism and Disorders
- j) Lipotropic factors
- k) Chemistry and metabolism of Prostaglandins.

**14. Hemoglobin structure, Functions and Metabolism,**

4

Porphyrias and Hemoglobinopathies, Catabolism of heme

**15. Integration of Metabolism**

2

Metabolic integration; liver, adipose tissue, Skeletal Muscle and Brain

**16. Mineral Metabolism**

4

Sodium, Potassium, Calcium, Phosphorus, Magnesium, Manganese, Sulphur, Iron, Copper, Zinc, Iodine, Cobalt, Fluorine, Selenium and chromium.

**17. Nutrition:**

4

- a) Calorific Value
- b) Specific Dynamic Action

c) Energy Requirements	
d) Balance Diet, Nitrogen balance, Dietary fiber	
e) Foodfads	
f) Nutritional disorders kwashiorkor and marasmus	
<b>18. Detoxification:</b>	<b>1</b>
<b>19. Free radicals and antioxidants</b>	<b>1</b>
<b>20. Hormones:</b>	<b>5</b>
i) General Principles of Hormonal action	
ii) Outline of Hormone Structure	
iii) Mechanism of Action and metabolic roles of	
a) Pituitary	
b) Pancreas	
c) Adrenal	
d) Gonadal	
e) Thyroid	
<b>21. Functional Tests:</b>	<b>5</b>
a) Renal b) Hepatic c) Pancreatic d) Gastric e) Thyroid	
<b>22. Fluid- Electrolyte and Acid - Base Balance</b>	<b>5</b>
<b>23. Plasma Proteins &amp; Immunoglobulins</b>	<b>3</b>
<b>24. Biological Membranes</b>	<b>2</b>
<b>25. Carcinogenesis Malignancy and cell cycle</b>	<b>2</b>

## **RECOMMENDED TEXT BOOKS FOR BIOCHEMISTRY**

1. Harper – illustrated Reviews
2. Text book of Biochemistry for Medical Students – DM Vasudevan
3. Text book of Biochemistry for Medical Students – RAFI MD

### **REFERENCE BOOKS:**

1. Text book of Biochemistry with Clinical Correlations – Thomas M .Devlin
2. Text book of Biochemistry – Stryer
3. Lipincott's illustrated Reviews – Biochemistry

**Distribution of chapters and suggested marks in parenthesis for Paper I and Paper II in Physiology for University examination are as follows**

**PAPER - I**

General Physiology & Cell  
Blood & Body fluids  
Cardiovascular system  
Respiratory system  
Digestive system  
Renal system & Regulation of Body Temperature

**PAPER - II**

Endocrine  
Reproduction  
Muscle-Nerve  
Central Nervous system  
Special senses

**Distribution of marks in Practical:**

**Practical - I**

Haematology Experiments  
Major Experiment - 15 marks  
Minor Experiment - 5 marks  
Hematology Problem - 5 marks

**Practical - I Total- 25 marks**

**Practical - II**

Clinical  
Major Case - 15 marks  
Minor Case - 5 marks  
Spotters - 5 marks

**Practical - II Total- 25 marks**

Record - 10 marks

## I. Syllabus of Physiology: (Theory)

S. No	Name of the Unit	No. of Hours
		6
1	General Physiology & Cell physiology	20
2	Blood and Body fluids	15
3	Nerve and Muscle Physiology	30
4	Cardiovascular System	18
5	Respiratory System & Environmental Physiology	18
6	Digestive System	18
7	Excretory System and Skin	32
8	Endocrine and Reproductive System	32
9	Central Nervous System	3
10	Autonomic System	18
11	Special Senses	210 hrs
	<b>Total Number of Hours for Theory Classes</b>	

### 1. GENERAL PHYSIOLOGY & CELL PHYSIOLOGY

Concept of homeostasis, milieu interieur, physiological norms, their range and control. Structure and functions of the cell membrane. Mechanism and modes of transport across cell membrane, and the capillary wall. Intercellular communication, Membrane receptors, second messengers and signal transduction. Body fluid compartments and their measurements. Fluid and electrolyte balance. Structure and function of the cell and its organelles.

### 2. BLOOD AND BODY FLUIDS

Composition and functions of blood. Functions of plasma proteins, red cells, white cells, and thrombocytes. Haemopoiesis and factors regulating it. Erythropoiesis and its regulation. Classification of anaemias. Erythrocyte sedimentation rate and factors affecting it. Classification and functions of leukocytes. Types and mechanism of immunity. RBC lifespan, Fragility and Tissue Macrophage System Structure and functions of platelets and their role in coagulation. Hemostasis and its disorders. Role of vascular endothelium in blood coagulation. Anticlotting mechanisms. Anticoagulants and their mechanism of action. Blood groups: ABO, Rh and MN systems, Clinical importance, Blood transfusion and blood banking. Formation, composition and functions of lymph. Hemoglobin, Bilirubin metabolism, Jaundice and Complement system.

### **3. NERVE MUSCLE PHYSIOLOGY**

Structure of neuron and neuroglia. Forces affecting the movement of ions across the cell membrane. Genesis of the resting membrane potential, and conduction of the nerve impulse. Classification of nerve fibers. Degeneration and regeneration of nerve fibers. Structure and transmission across the neuromuscular junction. Disorders of the neuromuscular junction - Myasthenia Gravis. Effects of denervation. Structure of sarcomere. Events in skeletal muscle contraction and relaxation. Types of skeletal muscle fibers. Motor units. Length-tension relationship. Structure of smooth muscle. Types of smooth muscle. Electrical activity of smooth muscle. Mechanism of contraction and relaxation of smooth muscle. Plasticity. Neural and chemical control of smooth muscle. Structure of cardiac muscle. Electrical potentials of cardiac muscle, length-tension relationship of cardiac muscle. Oxygen debt, Thermal changes during muscle contraction. Energy sources for muscle contraction.

### **4. DIGESTIVE SYSTEM**

Functional anatomy of the gastrointestinal tract (G.I.T) structure and innervation of G.I.T. Gastrointestinal hormones – gastrin, cholecystokinin – pancreozymin, secretin. Gastrointestinal Movements-Mastication, deglutition, Gastric motility, gastric emptying and vomiting. Motility of small intestine, large intestine, defecation. Gastrointestinal secretions – salivary, gastric, pancreatic, biliary and intestinal secretions- formation and composition, their function in digestion, regulation of secretion. Pathophysiology of diseases of the lower esophageal sphincter, peptic ulcer, jaundice, Gall stones, malabsorption syndrome, constipation, diarrhoea. Other Gastrointestinal hormones, Digestion and absorption of carbohydrates, proteins and nucleic acids, electrolytes and water, lipids, vitamins, minerals, iron, calcium.

### **5. CARDIOVASCULAR SYSTEM**

Organization of cardiovascular system. Functional anatomy of heart and blood vessels. Properties of cardiac muscle. Action potentials recorded from different tissues of heart. Origin and spread of cardiac impulse. Normal ECG: methods of recording, mechanism of production of different ECG waves in different leads. Physiologic basis of ECG, ECG abnormalities in common cardiac diseases and in electrolyte disturbances. Cardiac cycle: Mechanical events, Heart sounds. Jugular venous pulse, arterial pulse. Cardiac output: definition, physiological variations, principles of measurement and regulation. Heart rate: Regulation, normal value and physiological variations. Principles of hemodynamics. Arterial, arteriolar, venous and capillary circulation. Blood pressure: definition, types, variations and methods of measurement. Integrated regulation of cardiovascular system. Regional circulation: cerebral, coronary, cutaneous, visceral, muscle and fetal circulation. Pathophysiology of hypertension, heart failure, shock and the physiologic basis of their management. Cardiopulmonary resuscitation. Cardiovascular changes during: 1. Change in posture 2. Muscular exercise 3. Valsalva maneuver 4. Change of altitude



## 6. RESPIRATORY SYSTEM

Functional anatomy of respiratory system. Mechanics of respiration. Surfactant, Compliance. Lung volumes and capacities. Pulmonary function tests. Pulmonary circulation, normal values and regulation. Content and partial pressure of oxygen and carbon dioxide in inspired air, expired air, alveolar air, arterial blood and venous blood. Diffusion of gases in lungs and factors affecting it. Ventilation – perfusion ratio. Anatomical and physiological dead space and their significance. Oxygen and carbon dioxide transport, oxygen hemoglobin dissociation curve, and factors affecting it. Neural, reflex and chemical regulation of respiration. Types of hypoxia and physiological basis of their classification. Principles of ventilatory support. Oxygen therapy and hyperbaric oxygen. Pathophysiology of common respiratory disorders. Periodic breathing, respiratory adjustments during breath holding, hyperventilation, muscular exercise, cyanosis, hypercapnea, hypocapnea, asphyxia, high altitude, increased barometric pressure, drowning. Work of breathing. Non-respiratory functions of the lung.

## 7. EXCRETORY SYSTEM

Structure and functions of the of nephron and Juxtaglomerular apparatus. Renal blood flow and its measurement and regulation. Concepts of plasma clearance. Glomerular filtration, measurement, and factors affecting GFR. Reabsorption of essential nutrients: Glucose, sodium, potassium, calcium, phosphate, bicarbonate and water. Secretion of substances like hydrogen and potassium. Excretion of metabolites. Concentration of urine. Mechanism of diuresis, and action of diuretics. Role of kidney in fluid and electrolyte balance and acid- base balance. Innervation of bladder, Micturition, Cystometrogram and disorders of micturition. Atonic, autonomic and automatic bladder. Functions of Skin. Non-excretory functions of the kidney. Renal functions tests. Renal failure, Principles of dialysis.

## 8. ENDOCRINE SYSTEM

General principles of regulation of endocrine gland secretions. Secretion, Chemical nature, mechanism of action, physiological actions and consequences of altered secretion of the hormones of the hypothalamus, anterior pituitary, posterior pituitary, thyroid, parathyroid, adrenal cortex, adrenal medulla, endocrine pancreas and gonads. Physiology of growth. Role of hormones in stress. Synthesis, transport and metabolism of all hormones. Hormone receptors and blockers.

## **9. REPRODUCTIVE SYSTEM**

Control of onset of puberty. Pubertal changes in male and female. Menopause. Actions of pituitary gonadotropins and prolactin in males and females. Functional anatomy of male internal and external genitalia. Blood- testes barrier. Spermatogenesis. Composition of semen. the male sexual act. Actions and regulation of testosterone, and Control of testicular function. Functional anatomy of female internal and external genitalia. Cyclical changes in ovary, uterus, cervix, vagina and breast during menstrual cycle and hormonal regulation of the menstrual cycle. Chemical nature, actions and regulation of secretion of estrogen, progesterone. Indicators of ovulation. Common menstrual abnormalities. Principles and methods of contraception in male and female. Fertilization, implantation. Physiological changes in pregnancy and hormonal control of pregnancy. Fetoplacental unit. Physiology of parturition. Hormonal control of breast development after puberty and during pregnancy. Control of milk secretion and milk ejection, and effect of lactation on menstrual cycle. Composition of human milk and colostrum.

## **10. CENTRAL NERVOUS SYSTEM**

Organization and functional anatomy of central nervous system. Neuronal organization and function at the levels of spinal cord. Synaptic transmission. Reflexes, muscle spindle, regulation of muscle tone. Sensory receptors and initiation of impulses in sense organs and ascending sensory pathways for different sensory modalities. Physiology of pain. Nuclei and functions of thalamus. Brain stem reticular system. Sleep, wakefulness, and EEG. Organization of motor system. Descending tracts, corticospinal tract, and effects of lesions at different levels. Functional anatomy, physiology, and functions of basal ganglia, cerebellum and vestibular apparatus. Effects of clinical and experimental lesions at various levels of neural axis. Nuclei of hypothalamus and their functions. Regulation of body temperature. Limbic system, connections, and physiological functions. Functional areas of cerebral cortex. Higher functions - Conditioned reflexes, learning, memory and speech and its disorders. Formation, circulation and functions of CSF. Concept of blood- brain-barrier. Organization and functions autonomic nervous system. Facilitatory and inhibitory neurotransmitters. Recent neurotransmitters. Evoked potentials. Hemispheric specialization. Disorders of memory. Disorders of CSF formation and circulation.

## **11. SPECIAL SENSES**

### **VISION:**

Functional anatomy of the eyeball. Intra - ocular tension. Structure and functions of retina. Visual pathways and effect of lesion at various levels. Role of visual cortex in vision. Principles of optics. Role of various refractory media in image formation. Errors of refraction. Mechanism of accommodation. Light reflex and the Near response. Rod and cone pigments and sequence of events in phototransduction. Dark adaptation. Visual acuity. Field of vision. Colour vision and its theories. Colour blindness and its inheritance. Eye movements. Electrical responses in rods and cones. Electrophysiology of vision, and colour vision.

**HEARING:**

Functional anatomy of external, middle and internal ear. Functions of external, middle and inner ear. Auditory pathways. Electrical responses in hair cells and genesis of action potentials in afferent nerve fibers. Mechanism of hearing. Sound waves, their pitch and loudness. Sound transmission and theories of hearing. Tympanic reflex, and masking. Role of auditory cortex in hearing. Sound localization. Types of deafness. Tests for hearing.

**SMELL:**

Receptors and pathways for smell. Cortical and limbic areas associated with smell. Physiology of olfaction. Odor discrimination. Abnormalities of olfaction.

**TASTE:**

Receptors and pathways for taste. Basic taste modalities and receptor stimulation. Taste threshold and intensity discrimination. Substances evoking primary taste sensations. Abnormalities of taste.

## RECOMMENDED TEXT BOOKS FOR PHYSIOLOGY

1. Guyton & Hall ( Text Book of Medical Physiology)
2. Gangong (Lange)
3. G.K.Pal

### REFERENCE TEXT BOOKS:

1. Boron
2. Berne & Levy

### PRACTICAL MANUELS:

- |             |   |                                |
|-------------|---|--------------------------------|
| 1. G.k.Pal  | } | Manual of Practical Physiology |
| 2. A.K.Jain |   |                                |

**Annexure – IV**  
**GITAM University**  
**GIMSR**  
**FORENSIC MEDICINE & TOXICOLOGY**

**Syllabus: -**

**Total Number of Hours:— 100 hours**

- 1. Legal Procedure**  
Inquest, criminal courts and their powers and procedures, examination of a medical witness in the court, medical evidence, types of witness. Conduct and duties of doctor in the witness box, procedures of examination of the body at the scene of crime, Criminal trial – 4 hours
- 2. Medical Law & Ethics**  
Functions of medical councils, code of medical ethics, infamous conduct, rights and duties of medical practitioners, physician's responsibility in criminal matters, professional negligence, Vicarious liability, Medical records, Products liability, Medical indemnity, insurance, Euthanasia, consent in Medical practice, medical experimentation. Malingering. Consumer protection Act & Consumer courts – 6 hours
- 3. Identification**  
Identification of the living and the dead – 10 hours
- 4. Medico Legal Autopsy**  
Rules for autopsies, Autopsy of a dead body of decomposed and mutilated bodies; preservation of viscera for chemical analysis; skeletal remains; Exhumation – 3 hours
- 5. Death and Postmortem changes**  
Medicolegal aspects of death, modes of death, causes of death, Negative autopsy, sudden death, signs of death and changes following death with special reference to time since death – 5 hours
- 6. Mechanical wounds**  
Mechanism of wound production, detailed study of Wounds, Medicolegal aspects in relation to accident, suicide and Homicide, Traffic accidents, Regional injuries, Examination of injured person – 6 hours
- 7. Death**  
From starvation, cold, burns, electricity and lightning and dowry deaths – 5 hours
- 8. Death due to mechanical asphyxia**  
Hanging, strangulation, suffocation, drowning etc – 6 hours
- 9. Impotence, sterility, artificial insemination – 3 hours**
- 10. Medicolegal aspects of Virginity, Pregnancy and delivery & legitimacy – 4 hours**
- 11. Sexual Offences**

Sexual Assault, Unnatural offences, sexual perversions – 4 hours

12. **Abortion and infanticide** – 3 hours

13. **Medicolegal importance of Examination of blood stains, seminal stains, hair, weapons, clothes etc.** – 2 hours

14. **Forensic Psychiatry** – 4 hours

15. **Artifacts and their medicolegal Importance** – 1 hour

16. **Poisons**

Medicolegal aspects, classification, Routes of administration, mode of action and disposal in the body, diagnosis of poisoning in the living and dead, duties of doctor in poisoning cases in general – 4 hours

17. **Detailed study of poisons commonly used in India**

Sulphuric acid, Oxalic acid, Carbolic acid, aspirin, pain killers, potassium permanganate, Organic irritant poisons, such as ricinus, croton, Abrus, semicarpus, calotropis, cantharides, Snakes, scorpions, Bees & Wasp: opium, alcohol, Methyl alcohol, Barbiturates, Chloral hydrate, Kerosine, Anti-histaminics, Tranquilisers, Datura, Cannabis, Cocaine, Strychnine, Cardiac poisons like Digitalis, Oleander, quinine, aconite, Hydrocyanic acid; Asphyxiants like, CO, CO<sub>2</sub>, H<sub>2</sub>S, Drug dependence and food poisoning, Metallic poisons, organo phosphorus compounds, insecticides and rodenticides – 14 hours

18. **Integrated teaching**

With clinical departments (Radiology, Casualty, Pharmacology, Pathology, Medicine)

**Recommended books: -**

1. Text Book of Medical Jurisprudence & Toxicology Dr. Anil Agarwal
2. Essentials of Forensic Medicine & Toxicology, Dr. K.S. Narayana Reddy
3. Textbook of Forensic Medicine and Toxicology: Principles and Practice, KRISHAN VIJ
4. Text book of Forensic Medicine & Toxicology, Dr. V.V. Pillay.
5. Principles of Forensic Medicine, Dr. Apurba Nandy

**Reference books: -**

1. Pathology of Homicide, Bernard Knight
2. Modern Medical Toxicology, Dr. V.V. Pillay.
3. Medical Jurisprudence & Toxicology, C.K. Parikh
4. Text Book of Forensic Medicine & Toxicology, Nagesh Kumar G Rao

**Internal Assessment:**

- 3 Internal assessment examinations are conducted (apart from class tests following completion of each chapter.)
- 1st internal assessment examination at the end of 3rd semester







# MICROBIOLOGY

## Goals and Objectives :

- The goal of teaching microbiology to undergraduate students is to provide an understanding of the natural history of infectious diseases, in order to understand their etiology and pathogenesis, contribute towards their laboratory diagnosis and deal with their treatment and control in the community.
  - The student should be able to choose the appropriate laboratory investigation required for a clinical diagnosis; should be able to sample the right specimen, at the right time, by the right method; should be able to analyze and interpret the results of the laboratory tests; should be able to perform some simple tests, which help to arrive at a rapid diagnosis.
  - The student will be able to apply the principles of immunology in the pathogenesis of infectious and non-infectious diseases.
  - The student should know to practice laboratory guided antimicrobial therapy.
  - The student will be able to practice the techniques of asepsis, antisepsis and sterilization in day-to-day procedures and apply universal precautions in laboratory and clinical practice.
  - The student will be able to organize the prevention and control of communicable diseases in the community or hospital.
  - The student should understand the microbial ecology of specialized areas like hospital, water, food, and prevent the possible spread of infections.
  - The student should be able to understand the different types of biomedical wastes, their potential risks and their management.

**Skills :**

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

- Plan and interpret laboratory investigation for the diagnosis of infectious diseases and to correlate the clinical manifestations with the etiological agent;
- Identify the common infectious agents with the help of laboratory procedures and use antimicrobial sensitivity tests to select suitable antimicrobial agents;
- Perform commonly employed bed-side tests for detection of infectious agents such as blood film for malaria parasite, filarial worm, Gram staining and Acid Fast Bacilli (AFB) staining and stool sample for ova and cyst etc.
- Use the correct method for collection, storage and transport of clinical material for microbiological investigations.

**Integration :**

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

**TEACHING HOURS : 250 hrs**

These can be divided as follows:

Lectures	94
Practical Exercises	50
Demonstrations	50
Symposia & Seminars	40
Internal Assessment Exams	16

## **SYLLABUS OF MICROBIOLOGY:**

<b>S. No.</b>	<b>Name of the unit</b>	<b>No of Theory Lecture Hrs</b>
1.	General Bacteriology	8
2.	Immunology	20
3.	Parasitology	20
4.	Systematic Bacteriology	25
5.	General & Systematic Virology	15
6.	Mycology	6
	<b>Total</b>	<b><u>94</u></b>

**NOTE: THE DETAILED SYLLABUS IS VIDE ANNEXURE (A)**

**2) Syllabus of Microbiology:**

i) BROAD AREAS OF STUDY

a. General bacteriology: Those aspects of general bacteriology which help the student to understand the bacterial pathogenesis, diagnosis, treatment, prevention and control should be 'must know' category.

- Introduction to microbes and methods of studying them.
- Source and spread of microbes and infection control and containment including principles and use of antimicrobial agents
- The pathogenic mechanisms of microbes and pathogenesis of infectious diseases.
- Principles and methods of diagnosis of infections and infectious diseases.

b. Immunology: The basic principles of immunity and immunological phenomenon which help to understand the pathogenesis, laboratory diagnosis and control of infectious diseases and non-infectious diseases should be 'must know' category.

The immune system and host's response to infection.

c. Systematic microbiology

d. Prevention of infectious diseases

e. Infections and diseases of various systems of the body.

ii) DETAILED SYLLABUS

**Chapter 1:** Introduction to Microbes and Methods of studying them:

**Theory:**

Objectives: At the end of the chapter, the students should be able to

- Describe the unique properties of unicellular organism prokaryote, and viruses in contrast with those of eukaryotes
- State the rationale of classifying microbes into bacteria, fungi, parasites and viruses.
- Recall the growth requirements of microbes.
- Use microscopes, media, wire loops, staining procedures and similar equipment and processes.
- The nature of bacteria: morphology
- Growth requirements of bacteria (includes the study of media); metabolism and genetics
- Nomenclature and classification of microorganisms
- Microscopy-types and their principles
- The biology of protozoa
- The nature and properties of Viruses, Bacteriophage
- The laboratory methods of cultivating Viruses
- The nature of fungi: basic structure and classification
- Growth requirements of fungi

**Practical:**

Objectives: At the end of the Chapter, the student shall be able to

- Identify various morphological forms of bacteria, fungi, viruses and parasites that cause human infections.
- Perform simple, differential staining and other techniques to demonstrate micro-organisms and also to interpret their results.
- To identify common laboratory methods used for cultivation and identification of microbes.

**Practical exercises:**

- Introduction of media; smear making; simple and differential stains; other basic techniques to demonstrate micro-organism and microscopy
- The microscope; the morphology of micro-organisms. Bacteria:
- Cell cultures, cytopathic effect; haemagglutination by viruses; inclusion bodies; animal inoculation.

**Chapter 2:** The source and spread of Microbes**Theory:**

Objectives: At the end of the Chapter, the student will be able to

- define the terms: reservoir, source, exposure, colonization, infection, diseases, vector, fomite, epidemiology, endemicity, epidemic, pandemic, epizootic, incidence, prevalence, zoonosis, attack rate, asepsis, antisepsis, sterilization and disinfections
- list various routes of exposure to microbes
- Routes of spread of infections; endogenous vs. exogenous; source and reservoir of infections.
- Sterilization, antisepsis, disinfection and asepsis
- Hospital acquired infections

## **Practical**

Objective: At the end of the Chapter, the student shall be able to

- Observe the presence of microbes in our environments by studying settle plates
- Observe the presence of normal flora in nose, throat, etc.
- Interpret sterility tests done on various materials
- Sample appropriate clinical materials for tracing the source and spread of both community and hospital acquired infections.
- Interpret the findings of various 'surveillance' procedures

### **Practical demonstrations:**

- Demonstration of the equipments and agents used in sterilization and disinfection.
- Study of microbes in our environment by settle plates; effect of hand washing method
- Study of normal flora of man by examining throat and nasal swabs and also by cough plate method

Visit to the Microbiology Laboratory and Central sterilization and Supplies Department (CSSD)

## **Chapter 3:** The pathogenic mechanisms of microbes and pathogenesis of infectious diseases

### **Theory:**

Objectives: At the end of the Chapter, the student shall be able to

- Enumerate the variety of interactions between microbes and humans, ranging from commensalism to pathogenesis.
- define words: saprophyte, commensal, carrier state, latency, chronic infection, virulence, opportunism, toxin, invasion, viraemia, bacteraemia and septicaemia
- Cite examples of different pathogenic mechanisms of bacterial, fungal, parasitic and viral illness
- State the principles of quantitation of microbial dose in animal inoculation, such as minimum infectious dose, lethal dose and of neutralization
- Host parasite interactions- mechanisms of microbial pathogenesis; infection; host response; virulence; toxigenicity

- Pathogenesis of bacterial infections
- Pathogenesis of parasitic infestations
- Pathogenesis of viral infections
- Pathogenesis of fungal infections

**Practical:**

Objective: At the end of the Chapter, the student shall be able to demonstrate the virulence factors of microorganisms, using simple techniques

**Practical demonstrations:**

- demonstration of capsule; coagulase test
- demonstration of Elek's test; experimental tetanus
- case study: bacterial diseases, viral diseases

**Chapter 4:** The immune system and host's response to infection

**Theory:**

Objectives: At the end of the Chapter the student shall be able to

- describe the anatomy and physiology of primary and secondary lymphoid organs, tissues and cells of immune system
- describe the terms: natural resistance, immunity, antigen, epitope, hapten, antibody, immunoglobulin, local immunity, systemic immunity, cell mediated immunity, hypersensitivity, autoimmunity, memory and also correlate them with normal physiology and pathology;
- describe with examples various antigen-antibody reactions in vitro and in vivo
- enumerate the immune deficiency states and their causes
- describe the tests used to measure the immune functions
- state the principles of histocompatibility
- anatomy of immune apparatus
- Antigens; antigen presentation and cell cooperation in immunity
- Immunoglobulins and their role in immunity
- Antigen-Antibody reactions-1
- Antigen-Antibody reactions-2
- Cell mediated immunity and their role in immunity
- Complement and its role in immunity
- Hypersensitivity
- Measuring immune functions

- Autoimmunity
- Immunodeficiency and tolerance
- Transplantation immunology
- Immunization
- Tumor immunology

**Practical:**

Objectives: At the end of the session, the student shall be able to identify and interpret the results of the following tests:

- Slide and tube agglutination, latex agglutination and coagglutination; indirect and reverse passive haemagglutination tests
- Capillary and gel precipitation tests, counter immune electrophoresis and radial immune diffusion
- Complement fixation test
- ELISA test
- Various skin tests

**Practical:**

- Phagocytosis; opsonization
- Immune precipitation tests
- Agglutination test
- Delayed hypersensitivity; and tests for CMI
- Rheumatoid factor, antinuclear antibody

**Chapter 5:** The principles and methods of diagnosis of infections and infectious diseases and their treatment:

**Theory:**

Objectives: At the end of the Chapter, the student shall be able to

- List the diagnostic tests used for common and important infections and identify the specimens necessary for each
- State the principles of isolating/culturing bacteria, viruses and fungi
- Describe the principles of antigen detection methods
- List various serological tests and state their principles and applications in diagnosis
- Demonstrate various microbes/parasites/ova/cysts by direct microscopy
- Collection and transport of clinical samples; culture of microbes
- Serological methods of diagnosis of bacterial infections
- Serological diagnosis of fungal infections
- Serological diagnosis of viral infections
- Serological diagnosis of parasitic infections
- Rapid diagnostic methods especially with reference to viruses

**Practical:**

Objective: At the end of the session, the student shall be able to perform and interpret the following techniques



- Simple stains, Gram stain, Acid fast staining techniques; saline and iodine preparations for ova and cysts and also concentration methods; peripheral blood smear for parasites; lacto-phenol cotton blue and KOH preparations for fungi, rapid diagnostic methods
- Be able to collect appropriate clinical material for laboratory diagnosis
- Be able to do preliminary processing of clinical materials

**Practical demonstrations:**

- Demonstration of specimen container, collection of specimens, transport and media; preliminary processing in the laboratory
- Demonstration of common methods used for demonstration of pathogenic microorganisms
- Culture of bacteria, fungi, protozoa and viruses

Rapid diagnostic tests for various microorganisms

**Chapter 6:** Principles and uses of antimicrobial agents

**Theory:**

Objectives: At the end of the Chapter, the student shall be able to

- list antimicrobial agents and classify them as antibiotics and chemotherapeutic agents
- Define the terms: susceptibility, resistance and describe the mechanisms of transferable and nontransferable drug resistance
- Describe the tests necessary to determine drug susceptibility, antibiotic concentration and serum bactericidal level
- Antimicrobial resistance
- Laboratory monitoring of antimicrobial therapy

**Practical:**

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

- Disc diffusion tests
- MIC/MBC value, break- points, MIC 50, MIC 90, etc.
- Assays for antimicrobial levels in body fluids

**Practical demonstration:**

- Demonstration of antimicrobial susceptibility tests both diffusion and dilution tests
- Demonstration of antimicrobial assay

**Chapter 7: Systematic microbiology**

**Theory:**

Objectives: At the end of the Chapter, the student shall be able to

- State the basic taxonomy of common and important microorganisms
- Recall the basic principles of identifying microbes
- List the basic biological properties of common and important microbes
- Describe the role of physician in initiating microbiological investigations

**Bacteriology**

- Staphylococci
- Streptococci
- Neisseria
- Corynebacteria
- Mycobacteria
- Bacillus
- Clostridium
- Actinomycetes
- Haemophilus and Bordetella
- Enterobacteriaceae
- Vibrios and Campylobacter
- Brucella, Francisella and Legionella
- Pseudomonas and other non-fermenters
- Spirochaetes – Treponema, Borrelia, Leptospira
- Rickettsia
- Chlamydia
- Nonsporing anaerobic bacteria
- Mycoplasma and L Forms
- Helicobacter, Listeria, Ratbite fever, Erysipelothrix, Kingella, Miscellaneous bacteria – Ref. Anantanarayan textbook of Microbiology.

**Mycology**

- Agents of very superficial mycoses
- Agents of superficial mycoses; dermatophytoses

- Agents of subcutaneous mycoses
- Agents systemic mycoses
- Opportunistic fungi, Mycotoxicosis.

## Virology

### RNA Viruses:-

- Picorna viruses
- Orthomyxo and Paramyxo
- Rhabdo viruses
- Arbo and Robo
- Slow viruses
- Retroviruses
- Oncogenic viruses
- Viruses causing gastroenteritis
- Hepatitis viruses

### DNA Viruses:-

- Pox Viruses
- Herpes Viruses
- Adeno Viruses
- Papova Viruses
- Parvo Viruses
- Oncogenic Viruses

## Parasitology

- Entamoebahistolytica and free living amoeba
- Giardia, Trichomonas, Sarcocystis, and Toxoplasma, Cryptosporidium, Isospora
- Leishmania and Trypanosomes.
- Plasmodia and Babesia
- Medically important helminths belonging to Cestoda, Trematoda and Nematoda

### Practical: Objectives:

- Bacteriology: The student shall be able to identify pathogenic bacteria by Gram stain, morphology, colony characters and key biochemical reactions
- Mycology: The student shall be able to identify pathogenic fungi by their appearance in Lacto phenol cotton blue preparation, KOH, Indian ink preparations, Gram and other staining as well as pertinent colony morphology
- Parasitology: The student shall be able to identify ova and cysts of common intestinal parasites, identify blood and tissue parasites

## **Chapter 8:** Prevention of Infectious Diseases

### **Theory:**

Objectives: At the end of the Chapter the student shall be able to define terms; passive and active immunity, live and killed vaccine; efficacy of vaccine; disease control and eradication

- Epidemiology of infectious diseases

- Hygiene and protection of food and water
- Immunization schedules in India; vaccine efficacy; universal immunization

**Practical:**

Objectives: At the end of the session, the student shall be able to

- discuss a case study on an outbreak situation
- apply principles of asepsis, antisepsis and disinfection in day-to-day clinical practice
- interpret results of sterility tests done on various materials

**Practical demonstrations:**

- Case study of an epidemic/outbreak of nosocomial infection
- Demonstration of vaccines and toxoids, antisera and infection specific immunoglobulins
- Bacteriological analysis of water; Pasteurization of milk

**Chapter 9: Systemic Microbiology**

(Infections and diseases of the various systems of the body)

- List infectious diseases of each system and correlate them with probable aetiological agents
- Understand the aetiology, pathogenesis and methods of laboratory diagnosis and apply that knowledge in the treatment and prevention of common communicable diseases caused by all types of microorganisms
- Gastrointestinal infections caused by bacteria; Peptic ulcer disease; enteric fever, gastroenteritis; shigellosis; food poisoning
- Gastrointestinal infections caused by parasites:
- Gastrointestinal infections caused by viruses
- Hepatitis and other infections of liver and biliary tract
- Upper respiratory tract infections – Viruses
- Acute infections of lower respiratory tract
- Chronic infections of lower respiratory tract; national TB control program
- Sexually transmitted diseases; national STD control program
- Urinary Tract infections
- Infections of Central Nervous System – bacterial
- Infections of Central Nervous System – non bacterial
- Wound infections
- Superficial fungal infections: dermatomycoses; national leprosy control program
- Deep mycoses
- Eye infections: national program for prevention of blindness
- Septicaemic conditions
- Bone, joint and related conditions
- Exanthematous conditions
- Opportunistic infections
- Blood and tissue parasites; national filariasis control program, national malaria control program

**Practical:**

Objectives: At the end of the session, the student shall be able to identify the agents causing infections of various systems of the body and the student shall be able to collect appropriate specimens at an appropriate time and send them to the laboratory.

**Practical exercises:**

- Viable counts on normal faeces
- Case study – dysentery; stool with ova and cysts
- Case study – Cholera with demonstrations
- Case study – typhoid with demonstrations
- Case study – infective and serum hepatitis with demonstrations
- Case study – diphtheria with demonstrations
- Case discussion – diagnosis of tuberculosis
- Microscopic morphology of agents causing STD; Demonstrations of syphilis and HIV serology
- Case study – UTI with demonstrations
- Microbiology of CNS infections – demonstrations
- Carrier study of Staphylococcus on skin, throat and nose
- Diagnosis of Dermatomycosis, Mycetoma and Chromomycosis
- Laboratory diagnosis of Candidiasis and Cryptococcosis
- Demonstration of fungi causing deep mycoses
- Demonstration of agents causing eye infections
- Case study – endocarditis, Gram negative septicaemia, brucellosis, enteric fever and bacteremia.
- Case study – acute infections of bone etc.

**TERMWISE DISTRIBUTION OF THEORY PORTIONS**

**III SEMESTER:**General Bacteriology, Immunology, Protozoology.

**IV SEMESTER:** Systematic Bacteriology, Intestinal Helminths.

**V SEMESTER:** Blood and Tissue Helminths, Virology, Mycology, Systemic Microbiology.

**\*[Portion for the three Internal Assessment Exams will be according to the theory portions completed during the semester.]**

**Division of syllabus paper wise:**

**PAPER I:** General bacteriology, immunology and systematic bacteriology

**PAPER II:** Parasitology, Virology, Mycology and systemic bacteriology.

## SCHEME OF UNIVERSITY EXAMINATION

### Marks distribution in University Examinations:

#### II MBBS

##### University Theory Exam

Paper –I	40
Paper -2	40
University Practical Exam	25
Viva-voce (Orals)	15
Internal Assessment (Theory)	15
Internal Assessment (Practical)	15
<b>Total marks</b>	<b>150</b>

#### Scheme of Theory Examination Question paper      2 hrs      Total marks : 40

Structured essay	10 marks
Short answers	5x4=20 marks
Brief Answer	10x1=10 marks

#### COMMENTS:

- **Marks distribution for paper – 1 includes:**  
**General Bacteriology – 12 marks**  
**Immunology – 12 marks**  
**Systemic Bacteriology – 16 marks**
- **Marks distribution for paper – 2 includes:**  
**Virology – 16 marks**  
**Mycology – 8 marks**  
**Parasitology – 16 marks**

- For Paper – 1, the essay should be from Systemic **Bacteriology** & not from General Microbiology or Immunology.
- For Paper – 2, the essay may be either from Virology or Parasitology.
- The Essay should be a structured one & mark division must be provided.
- The Brief answers section may have MCQs or fill in the blanks or True or False statements or one sentence answers or a simple line diagram.

### **Microbiology Textbooks recommended:**

- Textbook of Microbiology- Dr R. Ananthanarayana, C. J. Paniker.
- Medical Microbiology- Dr C. P. Baveja.
- Microbiology-DrArora.
- Microbiology- DrChakraborty
- Parasitology by K. D. Chatterjee
- Parasitology by Paniker
- Parasitology by DrBaveja
- Microbiology & Virology –Preparatory Manual by Rajeshwar Reddy.

## SYLLABUS FOR 2<sup>ND</sup> PROFESSIONAL

### **PATHOLOGY**

#### **I. Goal**

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

#### **2 . Learning Objectives**

A MBBS student, at the end of the training in Pathology, will be able to:

- Understand the concepts of cell injury and changes produced thereby in different tissue and organs and the capacity of the human body for healing.
- Understand the normal homeostatic mechanisms, the derangements of these mechanisms and the effects on the human system.
- Understand the etio-pathogenesis, the pathological effects and the clinico-pathological correlation of common infectious diseases and non-infectious diseases like degenerative, metabolic, and immunologic conditions.
- Understand the concepts of neoplasia with reference to the etiology, gross and microscopic features, diagnosis and prognosis in different tissues and organs of the body.
- Correlate normal and altered morphology (macro and microscopic) of different organs in different diseases to the extent needed for understanding the disease process and their clinical significance.
- Understand the common hematological disorders and the investigations necessary to diagnose them and determine their prognosis.
- Describe the rationale and principles of technical procedures of diagnostic pathological laboratory tests.
- Perform and interpret in a proper manner certain simple clinico-pathological procedures on blood, urine and other biological fluid samples.
- Know the principles of collection, handling, storage and dispatch of clinical samples from patients in a proper manner.
- At the end of training he/she shall be able to integrate the causes of disease and relationship of different ethological factors (social, economic and environmental) that contribute to the natural history of diseases most prevalent in India.



### **3. Course contents**

#### **3.1. General Pathology - Taught in semester one (July to December)**

This is taught with the help of didactic lectures followed by practical pertaining to the topic. Besides microscopic examination of slides, fresh specimens obtained during surgical operations may be shown. Students to be encouraged to do self learning and small topics may be given to them in advance for group discussion and presentation.

At the end of one topic, tutorials may be arranged to facilitate learning.

#### **1. Cell Injury – 6 classes**

##### **Must know**

- Cause and mechanism: Ischemic, Toxic, Free- radical induced, Apoptosis
- Reversible cell injury: Types, morphology, hyaline and fatty change
- Irreversible injury: Necrosis and gangrene
- Calcification: Dystrophic and metastatic
- Extra cellular accumulations: Amyloidosis – classification, pathogenesis, morphology and
- pigment deposition such as melanin, bilirubin, hemosiderin and carbon

#### **2. Inflammation and Repair – 6 classes**

##### **Must know**

Acute inflammation: Features, Causes, vascular, cellular events and morphological variants  
Inflammatory cells and mediators

Chronic inflammation: Causes, types, non-specific and Granulomatous with examples  
Wound healing and repair by primary and secondary union and factors modifying them.  
Healing at specific sites like bone

#### **3. Hemodynamic disturbances – 4 classes**

##### **Must know**

- Oedema: Pathogenesis and types
- Chronic venous congestion: Lung, Liver and Spleen
- Thrombosis and Embolism: Formation, Types and Fate, Effect on tissues
- Infarction: Types and Common sites
- Shock: Pathogenesis, types and morphology

#### **4. Growth Disturbance and Neoplasia – 7 classes**

##### **Must know**

- Atrophy, Hypertrophy, Hyperplasia, Aplasia, Malformation, Metaplasia
- Dysplasia and Intraepithelial Neoplasia including carcinoma in situ, Premalignant conditions
- Neoplasia: Causes, Classification, Histogenesis and molecular basis, Biological behaviour,
- Benign versus Malignant, Nomenclature
- Malignant Neoplasms: Grade and Stage, metastasis and invasion
- Carcinogenesis: Environmental carcinogens, viral, chemical, occupational, hereditary
- Laboratory Diagnosis of cancer, Tumor markers, Paraneoplastic syndromes
- Gross and microscopic features, clinical correlation, mode of spread and prognosis of common benign and malignant tumors.

##### **Desirable to know**

Tumor and host interaction, Tumor immunology

#### **5. Immunopathology – 5 classes**

##### **Must know**

- Immune system: Organization, cells, antibodies and regulation
- Hypersensitivity: types and examples, antibody and cell mediated
- Immune deficiency: primary and secondary
- Autoimmune Diseases both organ specific and systemic with specific examples like SLE,
- Hashimoto thyroiditis
- Amyloidosis, classification, Pathogenesis, morphology.
- HIV-AIDS, etiology, modes of transmission, pathogenesis, pathology, complications, diagnostic procedures and handling of infected materials and health education
- Organ Transplantation: Immunologic basis of rejection, Graft versus Host reaction

##### **Desirable to know**

- Specific Organ Transplantation like Bone marrow, Stem cell, Kidney.
- Use of immunopathology in laboratory diagnosis like immunofluorescence, immunohistochemistry, flow cytometry.

#### **6. Infectious Diseases – 8 classes**

##### **Must know**

- Etiopathogenesis, gross and microscopic features, clinicopathological correlation, relevant
- investigations and complications of commonly prevalent infections like Mycobacterial diseases:
  - Tuberculosis and Leprosy
  - Bacterial Diseases: Pyogenic, Typhoid, Meningococcal, Syphilis, Bacillary Dysentery
  - Fungal diseases, Actinomyosis, Rhinosporidiosis, Opportunistic infections
  - Parasitic diseases: Malaria, Filariasis, Kala Azar, Amebiasis, Cysticercosis, Hydatid
  - Viral diseases: Herpes, Hepatitis, Rabies, Dengue
- HIV infection and AIDS: Aetiology, Mode of transmission, Diagnostic procedure and handling of infected material and health education

## **7. Miscellaneous Disorders – 8 classes**

### **Must know**

- Autosomal and sex-linked disorders
- Metabolic disorders like Diabetes Mellitus, Lysosomal Storage disorders
- Nutritional disorders – Protein Energy Malnutrition, Vitamin deficiency
- Occupational and environmental pathology – Radiation Injury, Pneumoconiosis
- Pathology of alcohol and smoking
- Cystic fibrosis
- Obesity

## **3.2. Systemic Pathology - Second and Third Semester (January to May and June to November of the subsequent year)**

### **1. Hematopathology – 11 classes**

#### **Must know**

- Constituents of blood and bone marrow, regulation of hematopoiesis
- Anemia: Classification and clinical features, Laboratory approach
- Nutritional anemia: Iron deficiency, Vitamin B12 and Folate deficiency
- Hemolytic Anemia:
  - Classification and Laboratory diagnosis
  - Thalassemia, Hemoglobinopathy like Sickle cell anemia
  - Hereditary Spherocytosis, G6PD deficiency
  - Acquired hemolytic anemia: Autoimmune hemolytic and Microangiopathic hemolytic anemia, hemolytic disease of newborn
  - Aplastic Anemia, PNH, Pancytopenia, myelophthisic anemia
  - Leucocyte disorders like Leucocytosis, Leukemoid reaction, Leucopenia
  - Leukemia: Acute and Chronic – classification and diagnosis
  - Other chronic myeloproliferative disorder
  - Myelodysplastic syndromes
- Hemostatic disorders: Platelet deficiency, ITP, Coagulation disorders like Hemophilia, Von Willebrand Disease, DIC
- Plasma cell dyscrasia
- Blood transfusion practice: Grouping, Cross Matching, Donor selection, Component therapy,
- Rational Use of blood transfusion, Adverse reactions and transmissible infections

### **2. DISORDERS OF THE BLOOD VESSELS – 3 classes**

#### **Must know**

- Atherosclerosis
- Aneurysms
- Tumors
- Hypertension – Integrated teaching

### **3. Cardiovascular Pathology – 5 classes**

#### **Must know**

- Acute rheumatic fever: etiopathogenesis and morphological changes and complications
- including rheumatic heart disease.
- Infective endocarditis
- Hypertension
- Atherosclerosis and Ischemic heart Disease
- Congenital Heart Diseases like VSD, ASD, Fallot's Tetralogy, PDA
- Pericardial Diseases
- Myocarditis & Cardiomyopathy
- Vasculitis and Aneurysm
- Cardiac tumors like Myxoma

### **4. Respiratory Pathology – 6 classes**

#### **Must know**

- Structure of bronchial tree and alveoli, normal and altered lung function, concept of obstructive and restrictive lung disease
- Inflammatory diseases of lung like Chronic Obstructive Pulmonary disease, Emphysema, Chronic Bronchitis, Bronchial Asthma, Bronchiectasis
- Pneumonia
- Lung Abscess
- Pulmonary Tuberculosis
- Lung tumors: etiopathogenesis and types
- Hyaline Membrane Disease and ARDS
- Interstitial lung disease
- Nasopharyngeal and Laryngeal tumors
- Diseases of pleura, Mesothelioma

### **5. Gastrointestinal tract Pathology – 10 classes**

#### **Must know**

- Oral pathology: Leucoplakia, Premalignant conditions and Carcinoma
- Salivary gland pathology: Common benign and malignant tumors, Sjogren Syndrome
- Diseases of esophagus: Barrett Esophagus and Carcinoma
- Gastritis – types, H. Pylori infection
- Tumors of stomach: benign and malignant
- Inflammatory diseases of intestine: Typhoid, Tuberculosis, Amebic colitis, Ulcerative colitis,
- Crohn's disease
- Intestinal tumors: Polyps, Carcinoma, Lymphoma and Carcinoid
- Appendicitis
- Hirschsprung disease
- Malabsorption diseases
- Pancreatitis and Pancreatic tumors

## **6. Liver and Biliary Tract pathology – 5 classes**

### **Must know**

- Jaundice: types, etiopathogenesis, differential diagnosis
- Hepatitis: Acute and Chronic, Pathology
- Cirrhosis: Etiology, classification, Post necrotic, alcoholic, metabolic Morphology, complications
- Alcoholic liver disease
- Gall bladder diseases: Cholecystitis, cholelithiasis, carcinoma
- Tumors of liver: hepatocellular carcinoma, metastasis
- Liver function tests
- Liver failure
- Portal hypertension

## **7. Lymphoreticular Pathology – 4 classes**

### **Must know**

- Lymphadenopathy – Causes, Lymphadenitis, infectious and non-infectious
- Lymphoma: Hodgkin and Non- Hodgkin – classification scheme and morphology of selected lymphomas
- Diseases of spleen – splenomegaly, hypersplenism

## **7. Urinary tract pathology – 7 classes**

### **Must know**

- Renal function tests
- Urinalysis
- Acute and Chronic renal failure
- Glomerulonephritis: Post streptococcal, Crescentic, Secondary
- Nephrotic Syndrome
- Acute tubular necrosis
- Urinary tract infection and Pyelonephritis
- Nephrolithiasis
- Renal tumors : Renal cell carcinoma, Wilms Tumor
- Urinary bladder: cystitis, urothelial carcinoma
- Renal vascular disorders
- Polycystic kidney disease
- End-stage renal disease
- Renal tuberculosis

## **8. Pathology of Reproductive System – 10 classes**

### **Must know**

- a) Diseases of cervix: Cervical carcinoma, PAP stain, Screening and diagnosis
- b) Hormonal influences and histology of different phases of endometrium
- c) Endometrial hyperplasia and carcinoma, Smooth muscle tumor, Endometriosis
- d) Trophoblastic diseases: Hydatidiform mole and Choriocarcinoma
- e) Ovarian tumors
- f) Diseases of breast – fibrocystic disease, Fibroadenoma, Breast Carcinoma, Phylloides tumor
- g) Disease of penis- premalignant and carcinoma
- h) Nodular hyperplasia of prostate and carcinoma prostate
- i) Tumors of testis

**Desirable to know**

- a) Semen analysis and investigation of infertility
- b) Pelvic inflammatory disease
- c) Vulval and vaginal diseases
- d) Genital tuberculosis

**9. Pathology of Musculoskeletal system – 4 classes****Must know**

- Osteomyelitis – Acute, chronic, tuberculosis
- Metabolic bone disease – Rickets, Osteomalacia, Osteoporosis, hyper-parathyroidism
- Tumors: Classification, Osteosarcoma, Chondrosarcoma, Giant cell tumor, Ewing's sarcoma, Metastatic bone tumors
- Arthritis: rheumatoid arthritis, osteoarthritis and tuberculous arthritis.

**Desirable to know**

- Pagets disease of bone
- Muscular dystrophies
- Tumors of jaw: like Ameloblastoma

**10 Endocrine Pathology – 5 classes****Must know**

- Non neoplastic lesions of thyroid: Thyroid function tests, Iodine deficiency, Goitre, Autoimmune thyroiditis, Myxedema and thyrotoxicosis
- Tumors of thyroid : follicular adenoma Carcinomas: papillary, follicular, medullary, anaplastic
- Adrenal diseases: cortical hyperplasia, atrophy, tuberculosis, tumors of cortex and medulla
- Parathyroid hyperplasia and adenoma
- Pituitary hyperfunction and hypofunction, tumors.
- Multiple endocrine neoplasia
- Diabetes mellitus: types, pathogenesis, pathological changes in adrenals, kidney and other
- organs.

**11. Neuropathology – 6 classes****Must know**

- CSF and its disturbance
- Inflammatory disorders: Meningitis and Brain abscess
- CNS tumors: Astrocytoma and Meningioma: classification
- Cerebrovascular diseases: Hemorrhage, Aneurysm, Infarction
- Traumatic lesions
- Peripheral neuropathy and demyelinating diseases

**Desirable to know**

Degenerative diseases like Alzheimer's and PRION disease

## 12. Dermatopathology – 2 classes

### Must know

a) Skin tumors like Melanoma, Basal cell carcinoma, Squamous cell carcinoma

### Desirable to know

Bullous lesions of skin

Dermatological conditions like Psoriasis, cutaneous tuberculosis

Diseases of eye like Retinoblastoma

## 4. Acquisition of Skills

a) Be able to collect, store and transport materials for various pathological tests including histopathology, cytopathology, hematopathology, Blood bank and clinical pathology in a proper manner.

b) Describe accurately and arrive at a logical diagnosis of common macroscopic specimens (gross appearance) such as pneumonia, cirrhosis, gangrene etc

c) Interpret and arrive at a conclusive diagnosis in the microscopic analysis of common diseases

like tuberculosis, carcinoma, acute inflammation etc.

d) Perform with accuracy and reliability various hematological procedures such as Hemoglobin

estimation, Total and differential leucocyte count, peripheral smear staining and reporting.

e) Calculate red cell indices and interpret the significance

f) Perform independently complete examination of urine and detect abnormal findings and interpret the results

g) Perform independently grouping of blood.

h) Be aware of the procedure for common tests like Bleeding time, Clotting time, ESR, PCV, bone marrow examination, semen analysis and interpret abnormal findings.

i) Interpret abnormal laboratory (biochemical, hematological and serological) values of common diseases.

j) Adopt universal precautions for self protection against HIV and hepatitis

## 5. Teaching and learning methodology :

The stress should be on teaching basic fundamentals of the disease process and applied aspects

relevant to the clinical subjects

Following modalities of teaching will be adopted :

- Didactic lectures – 120 hours
- Integrated teaching and CPC, Problem based exercises – 20 hours
- Group discussion /seminars/symposium – 18 hours
- Practicals ( Hematology and Clinical Pathology) – Demonstration, Instruments, case based discussions and interactive sessions : 56 hours
- Histopathology slides – 84 hours
- Instruments – 3hrs
- Practical demonstration of gross (Museum specimens) – 5 hrs
- Autopsy – 4 hours
- Internal Assessment – 10 Hrs
- Total – 320 hours

## **6. Areas of integrated teaching :**

1. Hypertention
2. Myocardial infarction
3. Peptic ulcer
4. Diabetic mellitus
5. Nephritic syndrome
6. Carcinoma cervix
7. Carcinoma stomach
8. Leprosy
9. Hepatitis
10. AIDS

## **BASIC GUIDELINES FOR PATHOLOGY PRACTICALS, GROUP DISCUSSIONS**

### **7.0. Practicals**

**One third of the allotted practical hours be devoted to:**

**7.1. Perform a complete urine examination and detect abnormalities and correlate clinically.**

**7.2. Perform with accuracy and reliability various hematological procedures such as Hemoglobin estimation, Total and differential leucocyte count, peripheral smear staining and reporting and blood grouping**

**7.3. Observing or performing under guidance tests like bleeding time, Clotting time, ESR, PCV, bone marrow examination, semen analysis and interpret abnormal findings.**

**7.4. One third of the practical hours allotted should be devoted to Identify and interpret gross and microscopic feature of:**

- a) Acute inflammation like acute appendicitis, pneumonia, meningitis
- b) Chronic cholecystitis
- c) Granulomatous inflammation like tuberculosis
- d) Granulation tissue and Ulcer
- e) Typhoid, tuberculous and amebic ulcers
- f) Common infections like Leprosy, Malaria, Filarial lymphnode, Rhinosporidiosis, Hydatid disease, Actinomycosis, Mycetoma, Molluscum contagiosum
- g) Fatty liver, Amyloidosis, Venous congestion of lung, liver and spleen
- h) Types of necrosis
- i) Common benign and malignant tumors like Squamous cell carcinoma, Basal cell carcinoma, Adenocarcinoma, Hemangioma, Lipoma, Melanoma, metastatic tumors etc
- j) Common systemic diseases like Cirrhosis, Pyelonephritis, Peptic ulcer, Rheumatic Heart Disease, Bronchiectasis, Osteomyelitis
- k) Specific tumors of various organs like Cervical cancer, Uterine leiomyoma, Seminoma, Osteosarcoma etc



## **7.5. One third of the allotted practical hours to be devoted to**

- Discussion of case studies based on the actual clinical and laboratory findings of patients along with gross and microscopic findings wherever applicable to learn clinicopathological correlation.
- Observation of post mortem examination if undertaken and discuss the clinicopathological correlation. In case clinical post mortems are not available then got-up specimens may be arranged to enable students to appreciate such cases.

## **7.6. Practical Topics**

### 1. Estimation of HB:

- a) Demonstration 1
- b) Conduction of Practicals with Basic standard 1 questionnaire & model disease charts for interpretation

### 2. RBC & WBC counts:

- a) Demonstration 1
- b) Conduction of Practicals with Basic standard 1 questionnaire & model disease charts for interpretation

### 3. Hematocrit & ESR:

- a) Demonstration 1
- b) Basic standard questionnaire & model disease charts 1 for Interpretation

### 4. Peripheral smear:

- a) Techniques of smear making & staining with demonstration 1 Hr
- b) Identification of cells - demonstration 1
- c) Model disease charts for interpretation 1

### d) Practicals:

- i) Smears of Microcytic Hypochromic & Macrocytic Anaemias & Haemolytic Anaemias
- ii) Smears of CLL 1
- iii) Smears of CML 1
- iv) Smears of Acute leukemia: AML or ALL 1
- iii) Eosinophilia 1

All the above with basic standard Questionnaire:

### 5. Bleeding Time, Clotting Time & Platelet Demonstration 1

### 6. Reticulocyte count Demonstration with basic standard Questionnaire 1

### 7. Bone marrow Examination:

- a) Methods of collection and demonstration 1
- b) Study of normal marrow 1
- c) Study of 2 abnormal bone marrows 1

### 8. Blood groups & related things 1

## **EXAMINATION OF URINE - 7**

1. Physical characters & different samples with pH & Sp gravity Demonstration 1
2. Chemistry of Urine with Albumin, Blood, Sugar, Ketone bodies, Bile salts & pigments Demonstration with discussion about errors in interpretation 1 Hr
3. Practical Tests for students:
  - a) Albumin + Blood Physical properties & Clinical correlation 1
  - b) Sugar + Ketone bodies Physical properties & Clinical correlation a & b with case charts for interpretation – 1Hr
4. Microscopy:
  - a) Casts, crystals, RBC, Puscells Demonstration 1
  - b) Case charts for interpretation 1
5. Pregnancy Test: Demonstration, discussion of normal & Molar pregnancies & Choriocarcinoma 1

### **EXAMINATION OF BODY FLUIDS - 6**

1. Demonstration of CSF, Plueral fluid, Ascitic fluid & Sputum – Normal Inflammation and malignancy 1
2. Exfoliative Cytology :
  - a) Techniques 1
  - b) Demonstration of PAP, H & E of Cervical smears and Bronchial Wash 1
  - c) 3 disease samples with discussion & Clinical correlation 1
3. FNAC
  - a) Techniques Demonstration 1
  - b) inflammatory & Neoplastic cases for discussion & Interpretation 1
3. Sex Chromatin demonstration - Buccal smear interpretation

### **EXAMINATION OF AUTOPSY**

Techniques of Autopsy and Autopsy demonstration & recording of 4 diseases 2 hours

### **INSTRUMENTS 3hrs**

1. RBC & WBC pipettes & diluting fluids
2. Neubauer chamber & Others
3. PCV Tube
4. ESR Tube
5. Hb Meter
6. Urino meter
7. Esbach's albumino meter
8. L.P. Needle
9. Bone marrow aspiration needles (Salah and Klima)
10. Blood bag
11. Liver biopsy needle
12. 'L' Moulds

### 13. Tissue Capsule

#### **GROSSING OF SPECIMENS**

5 Practical demonstration classes for 5 groups ( min 30 specimens) 5 hours

#### **HISTOPATHOLOGY**

Total Hours :84

1. Histopathology Lab – Practical demonstration of steps involved
  2. Staining Techniques : H&E, Special stains – PAS / Vangieson / Reticulin / Iron
  3. Preparation of Requisition for Pathology Lab
- Points to remember – fixatives, Clinical details, Specific points regarding the lesion

Slides : Any 42 of the following with at least 16 from General Pathology

#### **General Pathology slides**

- 1) Cloudy swelling
- 2) Fatty change
- 3) Hyaline change
- 4) Coagulation and caseous Necrosis
- 5) Cells of Acute & Chronic inflammation
- 6) Granulation tissue
- 7) CVC Lung & Liver
- 8) Thrombus
- 9) Amyloidosis (Spleen)
- 10) Rhinosporidiosis
- 11) Actinomycosis
- 12) Mycetoma
- 13) Filarial Lymph node
- 14) Leprosy
- 15) Squamous papilloma, adenoma
- 16) Lipoma, fibroma
- 17) Capillary & Cavernous hemangioma
- 18) Cellular features of malignancy
- 19) Squamous cell Ca. & Adeno Ca.
- 20) Fibrosarcoma

#### **Systemic Pathology slides**

##### **I – Blood Vessels & Heart:**

21. Atherosclerosis
22. Monckeberg's arteriosclerosis
23. Hyaline arteriosclerosis
24. TAO
25. Aschoff's Body
26. Myocardial infarction

##### **II – Respiratory system**

27. Emphysema
28. Bronchiectasis
29. Lobar & Bronchopneumonias
30. Pulmonary tuberculosis

31. Carcinoma Lung

**III - Kidney**

32. Chronic Glomerulonephritis

33. Chronic pyelonephritis

34. Benign nephrosclerosis

35. Wilm's Tumor

36. Renal Cell Carcinoma

**IV – Breast**

37. Fibroadenoma

38. Duct Cell carcinoma

**V – Thyroid**

39. Hashimoto's Thyroiditis

40. Grave's disease

41. Follicular adenoma

42. Papillary Carcinoma

**VI – Lymphnodes**

43. Hodgkin's lymphoma

44. Non-Hodgkin's lymphoma

45. TB Lymphnode

**VII – Salivary glands**

46. Pleomorphic adenoma

**VIII – Liver**

47. Cirrhosis

48. Hepatoma

**IX – GIT**

49. Chronic Gastric Ulcer

50. Carcinoma Stomach & Colon

51. Carcinoid appendix

**X – Testis & FGT**

52. Seminoma

53. Endometrium- Proliferative & secretory

54. Leiomyoma

55. Dermoid Cyst

56. Vesicular mole

**XI – Skin**

57. Basal Cell Carcinoma

58. Melanoma

**XII – Musculo Skeletal**

59. Osteomyelitis

60. Osteosarcoma

61. Chondrosarcoma

62. Giant cell tumor

63. Ewing's sarcoma

## **INTERNAL ASSESSMENT**

Third internal assessment examinations are conducted apart from class tests following completion of each chapter.

1<sup>st</sup> internal assessment exam at the end of 3<sup>rd</sup> semester

2<sup>nd</sup> internal assessment exam includes practicals & Viva voice at the end of 4<sup>th</sup> semester

3<sup>rd</sup> internal assessment examination (pre final) includes practicals & Viva voice at the end of 5<sup>th</sup> semester (one month before final examination)

Eligibility criteria to appear for final exam.

75% attendance in theory & practicals separately.

Marks obtained from the best of first 2 internals theory either 1<sup>st</sup> or 2<sup>nd</sup> whichever is higher are combined with 3<sup>rd</sup> internal (mandatory). Average obtained and finally calculated for 15 marks. Practical are also calculated for 15 marks. The candidate has to secure minimum of 35% in theory and practicals separately in order to get eligibility for final examination.

### **Criteria for passing University final exam theory & orals:**

**Candidate should secure minimum of 50% both theory and practicals separately.**

**Grand total aggregate should be 50% to pass through the examination**

### **Suggested Books for reading**

- Text book of Pathology by Harsh Mohan
- Robbin's Pathologic Basis of Disease *Ramzi S. Cotran, Vinay Kumar, Stanley L Robbins WB*
- Text book of pathology for MBBS Vol I & II by A.K. Mandal Shramana Choudhary
- Boyd's text book of Pathology – Vol I & Vol II by J.R. Bharadwaj Prabal Deb
- General Pathology *JB Walter, MS Israel*. Churchill Livingstone, Edinburgh.
- Practical Pathology by Uma Chaturvedi and Tejindar Singh

**GITAM University**  
**GIMSR**  
**Pharmacology**

**Goal:**

The goal of teaching Pharmacology to undergraduates is:

- To impart knowledge, skills and attitudes so that they can prescribe drugs safely, effectively and maintain competency in professional life.
- To inculcate in them a rational and scientific basis of therapeutics.

**Objective:**

The student after completing the course in Pharmacology will be able to:

- Understand the general principles of drug action and the handling of drugs by the body.
- Select and prescribe suitable drug(s) according to the need of the patient for prevention, diagnosis and treatment of common ailments.
- Foresee, recognize, prevent and manage adverse drug reactions.
- Avoid simultaneous use of drugs resulting in harmful interaction(s)
- Judiciously use rational drug combinations in the best interest of the patient.
- Be aware of the contribution of both drug and non drug factors in the outcome of treatment.
- Appreciate the essential drug concept and translate it in terms of drug needs for a given community.
- Judiciously use "over the counter" drug and be aware of ill effects of social use of intoxicants.
- Exercise caution in prescribing drug(s) likely to produce dependence and be aware of treatment strategies for drug dependence.
- Be aware of the drug treatment guidelines laid down for diseases covered under National Health Programmes.
- Prescribe drug(s) for the control of fertility.
- Be aware of possible adverse effects of drugs on the foetus and nursing infant while treating a pregnant and lactating woman respectively.
- Be aware of the age related factors while prescribing treatment in relation to infant/ children/geriatric patients.
- Evaluate the ethics and modalities involved in the development and introduction of new drugs
- Understand principles of Evidence based Medicine
- Understand the principles of pharmacoeconomics

**Integration**

Practical knowledge of rational use of drugs in clinical practice will be acquired through integrated teaching vertically with pre-clinical & clinical subjects and horizontally with other para-clinical subjects.

## DETAILED SYLLABUS

1. Period of training: 3rd, 4th & 5th Semester
2. Duration of training: 18 months
3. Eligibility: Must have cleared I<sup>st</sup> MBBS (Anatomy, Physiology, Biochemistry)

**Total number of hours: 300**

- **Lectures: 100 hours.**
- **Practicals: 200 hours including seminars, tutorials, integrated teaching, innovative sessions, internal assessments, viva-voce etc.**

### DETAILS OF LECTURES:

#### 3<sup>rd</sup> Semester:

#### **1. General Pharmacology and basic concepts of Clinical Pharmacology                      12 hours**

- Introduction – definition, scope, various branches, drug nomenclature, orphan drugs
- Mechanism of drug action
- Scope & relevance of clinical pharmacology
- Routes of administration of drugs, new drug delivery systems.
- Pharmacokinetics – Absorption, distribution, metabolism and excretion.
- Factors modifying drug action and drug dosage
- Drug interactions and pharmacogenomics
- Adverse drug reactions and Pharmacovigilance; Therapeutic drug monitoring and adherence
- Essential drugs and fixed dose combinations including pharmacoconomics
- Rational use of drugs
- Drug development – clinical trials

#### **2. Autonomic Nervous System & skeletal muscle relaxants    10 hours**

- Organization of ANS
- Cholinergic neurotransmission and cholinergic drugs
- Anticholinergics
- Adrenergic neurotransmission and adrenergic drugs
- Adrenergic antagonists
- Skeletal muscle relaxants

#### **3. Autacoids And Related Drugs    4 hours**

- Histamine receptor antagonists, their pharmacological actions, indications, adverse effects and precautions
- Pharmacology of prostaglandins and leukotrienes
- 5HT receptors and their agonists, antagonists including treatment of migraine
- Vasoactive peptides

#### **4. Drugs acting on blood**

**10 hours**

- Anticoagulants: MOA of heparin, LMWH and oral anticoagulants, indications, monitoring of therapy and treatment of bleeding due to their overdose, drug interactions.
- Drugs inhibiting platelet aggregations, their indications and precaution for their use
- Fibrinolytics, antifibrinolytics: indications, adverse reactions.
- Vitamin K
- Antianaemic drugs
- Treatment of shock
- Treatment of dyslipidemias: MOA, adverse reactions and indications

### **First Internal Assessment Examination**

#### **4<sup>th</sup> Semester:**

#### **5. Cardiovascular System**

**12 hours**

- Diuretics: Mechanism of action, pattern of electrolyte excretion under their influence, short term side effects and long term complications of diuretic therapy, therapeutic uses of diuretics; antidiuretics.
- Anti-hypertensive drugs: MOA; adverse drug reactions drug interactions and basis of combining commonly used drugs, hypertensive emergencies
- Treatment of IHD, myocardial infarction.
- Pharmacology of CHF
- Treatment of cardiac arrhythmias

#### **6. Central Nervous System**

**20 hours**

- Sedative – hypnotics used currently in clinical practice, indications contraindications, adverse effects, drug interactions
- General anesthetics: inhalational and intravenous, preanesthetic medication
- Local anesthetics
- Drugs used in epilepsy; selection of appropriate drug for various types of epilepsy and adverse drug effects, treatment of severe acute asthma
- Psychopharmacology : treatment of schizophrenia, depression, MDP, drug dependence
- Opioid analgesics: Pharmacological actions, indications, contraindications adverse effects and drug interactions of commonly used analgesics
- NSAIDS: Pharmacological actions, indications, contraindications, adverse effects and drug interactions of commonly used drugs. Disease modifying agents in the treatment of rheumatoid arthritis and drugs used for gout
- Drug used in the treatment of parkinson's disease: anticholinergic agents, dopamine agonists, MAOI, COMTI: Their indications, contraindications, adverse effects and drug interactions.
- Drugs for treatment of Alzheimer's disease and cognitive enhancers
- Pharmacology of ethanol and methanol poisoning.

### **Second Internal Assessment Examination**



## 5<sup>th</sup> Semester

### **7. Respiratory System**

**3 hours**

- Drug use in treatment of bronchial asthma
- Antitussives, expectorants & mucolytics

### **8. GIT**

**4 hours**

- Pharmacotherapy of peptic ulcer: MOA, adverse drug reactions, contraindications and precautions
- Antiemetics: MOA, uses, side effects.
- Drug used in ulcerative colitis and irritable bowel syndrome
- Management of constipation and diarrhoea

### **9. Endocrine System**

**10 hours**

- Thyroid hormones and antithyroid drugs: pharmacological action, indications, contraindications (C/I) and side effects
- Pharmacotherapy of diabetes mellitus. Management of iatrogenic hypoglycemia and diabetic ketoacidosis.
- Pharmacology of gonadal hormones: estrogens, progestins, androgens, their antagonists, HRT, anabolic steroids, SERMs, Drugs used in the treatment of infertility
- Pharmacological approaches to contraception, side effects, precautions and C/I.
- Uterine relaxants, and uterine stimulants, indications, side effects, C/I
- Hormones of adrenal cortex, their synthetic analogues, pharmacological actions, therapeutic uses, precautions, side effects and contraindications.
- Pharmacology of bone mineral homeostasis

### **10. Chemotherapy**

**20 hours**

- General principles of chemotherapy, rational use of antimicrobial agents, indications for prophylactic and combined uses of antimicrobials including pre and probiotics, antimicrobial resistance
- Chemotherapeutic agents:  $\beta$ -lactam antibiotics penicillins, cephalosporins, carbapenems and monobactams and other cell wall synthesis inhibitors
- Aminoglycosides
- Broad spectrum antimicrobial agents: tetracyclins and chloramphenicol
- Fluoroquinolones, sulfonamides treatment of UTI and STD
- Macrolides and other newer drugs
- Miscellaneous antimicrobials
- Chemotherapy of tuberculosis, leprosy
- Antiviral and antiretroviral drugs
- Anti fungal drugs
- Chemotherapy of protozoal infections: malaria, amoebiasis and other protozoal infections
- Anthelmintic drugs
- Cancer chemotherapy

**Toxicology****1 hour**

- General principles of treatment of poisoning
- Management of over dosage with commonly used therapeutic agents
- Heavy metal poisoning and heavy metal antagonists

**Miscellaneous****2 hours**

- Drugs modulating Immune system
- Antiseptics, disinfectants
- Vaccines and sera
- Vitamins, Nutritional supplements
- Gene therapy
- Drugs acting on skin& mucus membranes
- Antioxidants

**Medical Emergencies**

- Acute myocardial infarction, acute anginal attack, circulatory failure, sudden cardiac arrest, hypertensive emergencies
- Acute anaphylaxis and other acute allergic states
- Snake bites and insect bites
- Acute poisoning and drug overdosage
- Status epilepticus, febrile convulsions, acute mania
- Acute severe asthma, acute rheumatic fever, acute gout
- Acute colicky pains-intestinal, biliary, renal
- Post-partum haemorrhage, uterine inertia

**DETAILS OF PRACTICALS**

- Dosage forms Oral, Parenteral, Topical & Others
- Routes of drug administration
- Calculation of drug dosage
- Sources of drug information-how to retrieve information
- ADR monitoring
- Essentials of Clinical trials
- Communicating to patients on the proper use of medication.
- Prescription writing.
- Criticize, correct and rewrite the given prescriptions (Therapeutic & drug interactions oriented)
- Essential drugs list
- Use of drugs in pregnancy, lactation, children and elderly
- Use of drugs in liver disease and renal disease
- Percentage solutions
  
- Computer assisted learning (CAL)
- Experimental pharmacology charts interpretation

- Drug/drug and Drug/Food interaction.
- Selection of P-drug
- Clinical problem solving exercises oriented toward drug interaction, rational drug therapy etc.,
- Case studies to study rational therapeutics
- Analysis of rationality of fixed dose combination
- Critical evaluation of promotional drug literature.
- Getting conversant with source of drug information

**Teaching-Learning Methods:**

Small group discussions, tutorials, project work and seminars. An overlap between theory and practical classes will serve to reinforce and complement the two. Points not covered in theory can be covered during practical classes.

**Division of Syllabus with topic wise marks distribution for university examination:**

**Paper I :**

- |  |   |    |
|--|---|----|
| • General Pharmacology including clinical pharmacology         |   | 08 |
| • Autonomic Nervous System including Skeletal Muscle Relaxants |   | 08 |
| • Autacoids  |   | 04 |
| • Central Nervous System                                       |   | 08 |
| • Diuretics and Antidiuretics                                  | } | 12 |
| • Cardio Vascular System                                       |   |    |

**Paper II :**

- |   |   |    |
|---|---|----|
| • Blood                                     | } | 12 |
| • Respiratory System                        |   |    |
| • Gastro Intestinal System                  |   |    |
| • Endocrines                                |   | 08 |
| • Chemotherapy                              |   | 14 |
| • Immunosuppressives                        | } | 06 |
| • Chelating agents                          |   |    |
| • Drugs used in GOUT & Rheumatoid Arthritis |   |    |
| • Vitamins                                  |   |    |
| • Drugs acting on Uterus                    |   |    |

**Topics For Seminars (2 hours each)**

1. Antianaemic drugs
2. Antitussives
3. Shock
4. Alzheimer's disease, other neurodegenerative disorders and cognitive enhancers
5. Anthelmintics
6. Drugs affecting Calcium metabolism
7. Dermatology – drugs acting on skin and mucous membranes
8. UTI & STD
9. Irritable bowel syndrome, ulcerative colitis & Eye disorders
10. Immunopharmacology
11. Laxatives and antidiarrhoeals
12. Alcohols
13. Obesity
14. Heavy metal poisoning and heavy metal antagonists
15. Antiseptics
16. Superinfection, prophylactic use and misuse of antibiotics
17. Genetherapy

**Evaluation****Examination:**

<b>Theory :</b>	<b>Marks:</b>	<b>Practicals :</b>	<b>Marks:</b>
Paper I	40	OSPE: Spotters	04
Paper II	40	Others	06
Internal assessment:	15	Interactive session	10
Orals:	15	Internal assessment	15
		Record	05
	-----		-----
<b>Total:</b>	<b>110</b>	<b>Total:</b>	<b>40</b>
	-----		-----

**Grand Total : 150**

**OSPE includes:** spotters, dosage calculations, prescription writing, flow charts, Adverse drug reactions, Mechanism of action of drugs and description of drugs.

**Interactive session includes:** Pharmacokinetic charts, pharmacodynamic charts, clinical problem, CCR (prescription audit), problems on drug interactions and experimental pharmacology charts

## **Internal Assessment :**

3 Internal assessment examinations are conducted (apart from class tests following completion of each chapter.)

1<sup>st</sup> internal assessment examination at the end of 3<sup>rd</sup> semester

2<sup>nd</sup> internal assessment examination including practicals and viva voce at the end of 4<sup>th</sup> semester

3<sup>rd</sup> internal assessment examination (pre-final) including practicals and viva-voce at the end of 5<sup>th</sup> semester (one month before final examination).

## **Eligibility criteria to appear for final examination:**

75% attendance in theory and practicals separately

Marks obtained from the best of first two internals theory (either 1<sup>st</sup> or 2<sup>nd</sup> whichever is higher) combined with 3<sup>rd</sup> internal (mandatory), average obtained and finally converted (calculated) for 15 marks. The same procedure is followed for practicals also. The candidate has to secure minimum of 35% in theory and practicals separately in order to get eligibility for final examination.

## **Criteria for passing university (final) exam:**

Theory & orals together 50%

Practicals 50%

## **Books suggested:**

1. Principles Of Pharmacology by HL Sharma, KK Sharma
2. Essentials Of Medical Pharmacology, Tripathi
3. Pharmacology and Pharmacotherapeutics R.S Satoskar, S.D Bhandarkar
4. Basic And Clinical Pharmacology by Katzung

## **Reference books:**

1. Goodman And Gilman's The Pharmacological Basis Of Therapeutics
2. Rang And Dale's Pharmacology

## **GIMSR**

### **DEPARTMENT OF COMMUNITY MEDICINE**

#### **Syllabus for Paper –I**

General concepts of health & disease, epidemiology, disease screening, epidemiology of communi-cable (including childhood disease like ARI, diarrhea, VPDs) & non communicable diseases, health information, biostatistics, environmental health, disaster management, Bio Medical Waste, Relevant health Programmes, Mental Health, Genetics

### 3.0.0.0. SYLLABUS FOR COMMUNITY MEDICINE

#### 3.0.1.0. Goal:

The broad goal of teaching in Community Medicine is to prepare the student to function effectively as a Community physician.

#### 3.0.2.0. OBJECTIVES: At the end of the course, the student should be able to:

- 3.8.2.1. Understand & describe the concepts of Health & Disease, Natural History of Disease &, Levels of Prevention.
- 3.8.2.2. Understand and describe the determinants of health and the role of individuals, family and the community on the health status of the individual/ s family and community.
- 3.8.2.3. Understand and describe the evolution of different types of health care services like Personal Care, Public health and community health/ Community Medicine to cater to the health care needs of the community effectively.
- 3.8.2.4. Understand & describe the concept of Health for All and Primary Health care in health care.
- 3.8.2.5. Understand & describe the demographic pattern of the country and its relation to health.
- 3.8.2.6. Understand & describe basic bio-statistical methods in the study of Individual and community health problem
- 3.8.2.7. Understand & describe the epidemiological methods in the study of Health & Disease and its intervention at the individual & community level.
- 3.8.2.8. Describe the role of environment (Physical: Hot, Cold, Humidity, Air, Noise, Light, Radiation, Physical & chemical) - inside the home, at the workplace and in the community) on the health status of individuals and the community.
- 3.8.2.9. Describe and analyze the importance of water and sanitation on human health.
- 3.8.2.10. Suggest feasible methods of environmental control at household and community levels.
- 3.8.2.11. Describe common occupational hazards in industries, agriculture, and the services available to the industrial workers and feasible methods of control of occupational hazards.



3.8.2.12. Describe the important/common health problems (Communicable, Non communicable Diseases, Special health needs and health problems of groups like neonates, preschool, school going, juvenile, women in the reproductive age group, pregnant and lactating woman. Geriatric as group) in the Rural and urban area and the existing Health programs available in India.

3.8.2.13. Describe the health care delivery system in India and its component. (Organization and functions of the health care team at Primary Health Centre, Community Health Centre and District levels. HIMS, Human Resources, health care financing)

3.8.2.14. Describe the National Health Programs of India.

**3.9.9.0. Skills: At the end of the course a student should be able to:**

- 3.9.9.1 Draw natural history of a health problem in an individual suffering from disease & select the appropriate service package using the levels of prevention paradigm.
- 3.9.9.2 Apply suitable bio-statistical methods and interpret the results in the study of health problems of individuals and the community.
- 3.9.9.3 Use various methods available to collect vital statistics of the community.
- 3.9.9.4 Apply appropriate epidemiological methods & tools in the study of health problems (communicable, Non Communicable diseases, health system) at individual and community level.
- 3.9.9.5 Plan, collect, analyze, interpret and present data from a hospital/community survey on specific health problems.(Children Growth & development, Nutrition, Maternal health, and other child health)
- 3.9.9.6. Diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources, prevailing socio-cultural beliefs and family resources.
- 3.9.9.7. Diagnose and manage maternal and child health problems and advise couples and the community on the family planning methods available.
- 3.9.9.8. Diagnose and manage common nutritional problems at the individual and community levels.
- 3.9.9.9. Plan and implement, using simple audiovisual aids, a health educational programme and carry out its evaluation.



3.9.9.10 Plan and implement an intervention program with community participation

3.9.9.11 Evaluate the Major ongoing Health programs.

3.9.9.12 Plan and implement a disaster management program

3.9.10.0 **COURSE CONTENTS:**

3.9.10.1. **Concepts of Health & Disease**

- I. Introduction to community medicine, Medicine in antiquity, evolution of community medicine.
- II. Definition of health Dimensions of Health, holistic concepts of health. Individual's Health, Community's Health.
- III. Determinants of health, Characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease.
- IV. Understanding the concept of natural history of disease and levels of prevention.
- V. Measurements in Health.
- VI. Constitutional provision for Health & Welfare for the population of India.
- VII. Health profile of India and outline of Health care delivery system.

**Practical & Health Visits:**

- I. Rural Health Institutions (Sub Centre, PHC, CHC, Secondary & Tertiary Hospital)
- II. Computing: Major Health Indicators

3.9.10.2. **Behavioral Sciences.**

**A. Objectives: At the end of the course the student should be able to:**

1. Define social & behavioral sciences and discuss their role in Community Medicine.
2. Describe the role of the family/community in health and disease.
3. Measure the socio-economic status of a family and describe its importance in health and disease.
4. Construct, pre-test and validate questionnaire/interview schedule for the study of family and community.
5. Understand the term attitudes and describe the process of attitudinal development and methods to change.

**C. Didactic Lecture Topics:**

1. Culture, Society and Health
2. Role of Family in health and disease
3. Socio-cultural factors related to health and disease in the context of urban and rural societies.
4. Social Organization and Community Participation
5. Socioeconomic Status and its importance in relation to health and disease.
6. Attitudes: nature, development, methods to change & Measurement of attitudes.
7. Social psychology, Community behavior and community relationship, patient behavior in the Hospital.

**D. Practical:**

1. Study of Family (Type, Structure, socio economic status, Health beliefs, practices.
2. Measurement of Socio economic indicators and Health
3. Construction and pre-testing of questionnaire/ interview schedule
4. Questionnaire design to test attitudes.

**3.9.10.3. ENVIRONMENT AND HEALTH:**

**A. Objectives: At the end of the course the student should be able to:**

1. Describe the physical environment inside the home, at the workplace and in the community, and its impact on health and disease.
2. Suggest appropriate methods for improving the internal/external environment.
3. Define safe water. Describe the sources of water (tap, hand pump, well).
4. State the criteria (national and WHO) for safe water.
5. Describe appropriate methods for making water safe at the domiciliary level.
6. Describe sources of waste and methods of waste control at individual and community levels.
7. Define air pollution, causes of air pollution and describe appropriate measures of control.
8. Describe the effects of noise and radiation on health.
9. Describe the common vectors of diseases and methods of vector control.
10. Describe the various insecticides that are used for vector control.
11. Describe insecticide resistance.
12. Describe the correct method of Bio medical waste disposal.



## B. Didactic Lecture Topics

1. Environment: physical environment inside and outside the home and its effect on Health/
2. Concepts of safe and wholesome water, sanitary sources of water, water related diseases, water purification processes, water quality standards. Physical and chemical standards of drinking water quality and tests for assessing bacteriological quality of water. Concepts of water conservation and rainwater harvesting.
3. Sanitary disposal of Wastes (solid waste ,human excreta and sewage disposal.
4. Air pollution, green house effect, ozone layer Health hazards of air, noise, radiation pollution
5. Noise and radiation pollution.
6. Describe the common vectors of diseases and methods of vector control.
7. Describe the various insecticides that are used for vector control.
8. Insecticidal Resistance.
9. BIO-MEDICAL WASTE AND ITS DISPOSAL: Classification/ Category, sources, health hazards and treatment of Bio-Medical, Waste.

## C. Practical Exercise:

1. Assessment of environmental status of a Household/ community and its effect on the health of the members of the household.
2. Identification of different types of vectors, how to study its density and habitat.
3. Identification of Various methods of using insecticide for vector control.
4. Visit to Hospital to observe the Bio medical waste disposal.

### 3.9.10.4. Health Promotion:

A. **Objective:** At the end of the course the student should be able to:

1. Understand & describe the concepts of Health promotion, Health Education, Information Education and Communication ( IEC) Behavioral change communication (BCC).
2. Understand & describe the principles of Communication and existing barriers to effective communication and methods to overcome them.
3. Able to communicate effectively with the individual, family and community.
4. Design different health promotion packages for individual, family and community.



## B. Didactic Lecture Topics

1. Health Promotion as the key to primary prevention.
2. Communication- Art & Skill.
3. Definition and principles of health education
4. Health educational methods/ Audiovisual aids & Use of other aids in health education
5. Methods of overcoming resistance in the individual, family and community.
6. Planning a health educational program.
7. Information Education Communication & Behavior Change communication Strategies

## C. Practical exercise:

1. Preparing and delivering a health educational talk on simple issues:
  - Personal hygiene
  - Clean water
  - Clean domestic environment
  - Clean external environment
  - Dental hygiene
  - Any other topic.
2. Organizing a IEC camp
3. Evaluation of health educational activities

## 3.9.10.5. Nutrition & Health.

### A. Objectives: At the end of the course the student should be able to:

1. Describe common nutrition related health disorders viz. Protein energy malnutrition, Obesity, micro nutrient deficiencies) and their control and management.
2. Undertake nutritional assessment of individual, families and the community by using appropriate method such as: anthropometrics, clinical examination etc.
3. Plan and recommend a suitable diet for the individuals and families as per local availability of foods and economic status, etc.
4. Nutritional surveillance, education and rehabilitation.
5. Food fortification, additives, adulteration, and food hygiene
6. National Nutrition policy, Important National Nutritional Programs.

## B. Didactic Lecture Topics

1. Role of nutrition in health and disease
2. Nutritional requirements and sources, Balanced Diet
3. Major Nutritional Programs, viz. Micronutrient deficiency, Protein energy malnutrition, Obesity
4. National Nutrition Policy and National Nutritional programs.

## C. Practical:

1. Nutritional status assessment of Individuals, Community.
2. Evaluation Nutritional program

### 3.9.10.6. Biostatistics

A. **Objectives:** At the end of the course the student should be able to:

1. Define, calculate and interpret commonly used statistical methods.
2. Select and use appropriate diagrammatic representations of statistical data.
3. Define probability.
4. Define normal distribution.
5. Define bias, random error.
6. Describe methods of sampling and calculate sample size.
7. Carry out random and cluster sampling.
8. Describe the demographic cycle and define the pattern of population inat different phases of the demographic cycle.
9. Test of significance
10. Define vital statistics, describe their method of collection.
11. Describe the sources of data and their merits for use and census in India.

## B. Didactic Lecture Topics

1. Need of Bio-statistics in Medicine.
2. Frequency Distribution
3. Measures of Central Tendency & Measures of dispersion..
4. Tabular & diagrammatic presentation of data probability
5. Normal Distribution.



6. Probability
7. Standard error estimation
8. Alpha, Beta error
9. Confidence Interval
10. Bias/Random errors
11. Tests of Significance
12. Sample size calculation & Sampling methods

**C. Practical:**

1. Graphical Presentation of Data.
2. Random sampling - cluster sampling (EPI)
3. Calculation of Vital & fertility rates.
4. Test of significance.
5. Demography

**3.9.10.7. Basic Epidemiology.**

**A.Objectives: At the end of the course, student should be able to:**

1. Epidemiology: definition, concepts, uses and its role in health and disease.
2. Describe the Natural History of Disease (Definition of the terms used in describing disease transmission and control, Modes of transmission and measures for prevention and control of communicable and non-communicable diseases.
3. Describe the levels of prevention and its relationship with the Natural History of Disease, General principles of prevention and control of communicable, non communicable diseases and other health conditions of public health importance.
4. Principal sources of epidemiological data.
5. Definition, calculation and interpretation of morbidity and mortality indicators
6. Incidence, Prevalence, Rates & Ratios.
7. Concept of association, causation and biases.
8. Describe the various types of epidemiological study designs, their application, biases, statistical analyses, relative merits and demerits.
9. Describe the need and uses of screening tests, Differentiate between screening and diagnostic tests.

10. Calculate the sensitivity, specificity, positive predictive value of tests given a set of data.
11. Define surveillance and its role in the study of epidemiology and disease control.

#### B. Didactic Lecture Topics

1. Epidemiology; Introduction (Definitions, scope in hospital, community, planning)
2. Measures of Morbidity/Mortality Rates.
3. Incidence, Prevalence.
4. Rates, Ratios, Proportions, Crude rates/standardized
5. Fertility Rates
6. Sources of epidemiological data.
7. Measurements in Health & Disease.
8. Screening Tests vs Diagnostic Tests.
9. Descriptive, Analytical & Experimental methods in epidemiology- Different types of Epidemiological studies, Case Control, Cohort, cross sectional & Randomized Control Trials.
10. Surveillance

#### C. Practical:

1. Clinico-psycho-social case review ( Individual)
2. Family study.
3. Drawing the Natural History of Disease (Communicable 5 ), Non Communicable(5)
4. Application of the levels of prevention in the Communicable & Non communicable Diseases.
5. Use of basic epidemiological tools to make a community diagnosis of the health situation, in orders to formulate appropriate intervention measures.
6. Investigation of an epidemic of communicable disease and to understand the principals of control measures.



### 3.9.10.8. Epidemiology of Communicable & Non communicable Diseases.

#### A. Objective; At the end of the course the student should be able to:

1. Describe the epidemiology of common communicable diseases. (Food borne Disease, Respiratory disease- TB, ARI, Vector borne diseases- Malaria, Kalazar, Zoonotic Infection, Person to person infection like, STD, HIV, Blood borne infection, Vaccine preventable Diseases.
2. Describe the epidemiology of non communicable diseases Non-communicable Diseases, Coronary heart disease, Hypertension, stroke Rheumatic heart disease, Cancers, Obesity, Diabetes, Blindness, Injury and Accidents.
3. Describe the steps involved in investigating an epidemic.

#### B. Didactic Lecture Topics:

##### i. Communicable Diseases:

1. Malaria
2. STDs / HIV/AIDS
3. Pulmonary Tuberculosis
4. Leprosy
5. Diphtheria, Pertussis, Tetanus
6. Poliomyelitis
7. Measles, Mumps & Rubella
8. Chicken, A.R.I.
9. Diarrhoeal Diseases
10. Infective Hepatitis
11. Kala azar
12. Arbo viral diseases
13. Filariasis
14. Plague
15. Intestinal infestations



## II. Non Communicable Diseases

1. Nutritional Disorders
2. RHD /CHD / Hypertension
3. Cancers
4. Blindness
5. Road Traffic Accidents
6. Diabetes mellitus
7. Obesity

### C. Practical:

1. Plan and investigate an epidemic of a communicable disease in a hospital/ community setting, and institute control measures.

### 3.9.10.9. Demography & Family Planning.

#### A. Objectives: At the end of the course the student should be able to:

1. Define Demography & Describe demographic cycle and its importance on Health of Country.
2. Describe the role of population dynamics of India including Population explosion, Declining sex ratio, Demographic transition and its effect on Health of the Nation.
3. Calculate and interpret the demographic indices like birth rate, death rate, fertility rates.
4. National Population Policy

#### B. Didactic Lecture Topics

1. Demography Definition, Cycle, Demographic transition, and its role on Health.
2. Population Dynamics & Health effect of Demographic transition and declining sex ratio on health. .
3. National Population Policy of India.

#### C. Practical:

1. How to calculate & interpret the different Demographic indices.

### 3.9.10.10. Maternal & Child Health.

#### A. Objectives: At the end of the course the student should be able to:

1. Describe the major maternal and child health problems in India.
2. Describe the local customs and practices during pregnancy, childbirth and lactation, child Feeding practices and its effect on Mother & Child Health..
3. Describe the specific Health intervention packages for Maternal Health problems during Pregnancy & Lactation.
4. Describe the specific Health intervention packages available for Neonates, Infants, Preschool child
5. Describe the role of Family welfare on Maternal & Child Health
6. Describe the various family planning methods. Describe the indications, contraindications, side effects and complications of the methods.
7. Describe the Salient features of the existing National programs related to Reproductive child health (RCH), its' components, including child survival and safe motherhood, Janani Suksha Yojana Universal Immunization Program, Integrated Child Development Services Scheme (ICDS), Integrated Management of Neonatal and Childhood Illness(IMNCI).
8. Organization, implementation and evaluation of reproductive and child health program components,

#### B. Didactic Lecture Topics

1. Major Maternal Health Indicators and its determinants & available intervention packages. (Pre pregnancy, pregnancy, delivery, Puerperium, lactation.)
2. Major Child Health indicators and its determinants & available intervention packages (Neonatal, perinatal, Post neonatal, infancy, pre-school)
3. Salient features of the National Health programs, Objective, components, organization & implementation, monitoring mechanism..



**C. Practical:**

1. Advise a mother on the importance of breast feeding and weaning at appropriate time and addition of weaning foods.
2. Identify and manage high risk mothers and children.
3. Define an eligible couple. Calculate eligible couple protection rate.
4. Advise a couple on spacing and terminal methods.
5. Evaluate state of reproductive and child health in a community and also the existing programs.

**3.9.10.11. Occupational Health.**

**A. Objectives; At the end of the course the student should be able to:**

1. Describe the common industrial and occupational diseases.
2. Describe the feasible methods of control of occupational diseases.
3. Describe the important features of the Workman Compensation Act and Employees State Insurance program. provision of health services

**B. Didactic Lecture Topics**

1. Working environment, health hazards of industrial and agricultural workers
2. Common occupational lung diseases & its prevention
3. Common occupational skin diseases and cancers & its prevention
4. Principles of prevention of Occupational diseases
5. Legal status in relation to Workman Compensation Act
6. Employees' State Insurance Act

**C. Practical**

1. Visit to a factory.
2. Case study of a local Industry.

**3.9.10.12. Health of Special Groups: Geriatrics, Adolescent, Handicaps.**

**A. Objectives**

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

1. Describe the Health needs of the Geriatrics, Adolescents and Physically & Mentally challenged people.
2. Describe the special health, welfare and other statutory intervention package available to meet the needs.
3. Describe the available Health & welfare programs being implemented in the community and its effect on the health needs.



## B. Didactic Lecture Topics.

1. Geriatric groups special physiological & social needs, common Health problems and its primary care.
2. Adolescent groups' special physiological & social needs, common Health problems and its primary care.
3. Physically and mentally challenged people's health problems.
4. Rehabilitation.

## C. Practical: Case study.

### 3.9.10.13. Health Care delivery system.

#### A. Objectives: At the end of the course, the student should be able to:

1. Describe the components & nature of personal & public Health services.
2. Describe the strategy of Primary Health care in organizing Health care delivery system.
3. Describe the different models of existing health care delivery system.
4. Describe the existing health delivery system in India.
5. Describe the state owned Health infrastructure available in Rural & Urban area in India.(primary, secondary and tertiary level)
6. Describe the Health manpower available in the peripheral Health Institution of India.
7. Describe the Health services organizational chart at the central and state level.
8. Describe the role of Private health Institutions in health care in India.
9. Describe the role of Voluntary health organization in health care delivery.
10. Describe the Health care financing specially Health insurance in India.
11. Describe the National Health Missions of India and its role in Health care delivery..

## B. Didactic Lecture Topics.

1. Personal Health Care Services vs Public Health Services.
2. Primary Health Care strategy.
3. Evolution of Health care delivery system in India from Bhore committee to Health Missions.



4. Prevailing health care delivery system in Rural & Urban India.
5. District Health system in India its organization, manpower, functioning and its role in providing comprehensive health care.
6. Functions of each health institution from Primary to tertiary and the responsibility of each health functionaries from community level to District level.
7. Monitoring and evaluation of the functioning of District Health system.

**C. Practical:** Case study on Functioning of a Sub-centre, PHC, and Community based Health functionaries.

### **3.9.10.14. Health Planning & Management.**

**A. Objective:** At the end of the course, the student should be able to

1. Describe the National Health Policy
2. Describe the planning cycle & Process.
3. Describe the use health and other epidemiological data in the planning process.
4. Describe Health planning process in India.
5. Describe the broad principles of Management,
6. Describe the Health Management System in India.
7. Principles Material management & Personal Management.

### **B. Didactic Lecture Topics**

1. National Health Policy.
2. Health Needs and Demands.
3. Planning cycle and process.
4. Health Information System.
5. Material Management
6. Personal Management.

**C. Practical:** Project: Plan for Health care delivery during Natural Disaster.

### **3.9.10.15. Health Economics.**

**A. Objective:** At the end of the course, the student should be able to:

1. Appreciate cost considerations in clinical and public health interventions.

## **B. Didactic Lecture Topics**

1. Need of health economics
2. Methods of economic analyses in health

### **3.9.10.16. National Health Programs.**

#### **OBJECTIVE:**

At the end of the course, the student should be able to describe the Goal, major objectives, Intervention packages, Strategy of delivery of packages and monitoring the performance.

#### **A. Didactic Lectures:** Description of all the following Programs

1. RNTCP.
2. National Vector borne disease control program.
3. National Blindness control program.
4. Integrated Disease Surveillance Project (IDSP)
5. National leprosy control program.
6. National AIDS control program.
7. Reproductive and Child Health.
8. National Iodine deficiency disorder control program.
9. National cancer control program.
10. National cancer control program.
11. Health related Millennium Development Goals.
12. Integrated Child Development Scheme.
13. National Family welfare program.
14. National Health Mission.

**B. Practical:** Case study: Evaluation of any one of the program. Group Exercise group of 5

### **3.9.10.17. Public Health Legislation.**

**A. Objective:** At the end of the course, the student should be able to describe

1. The role of legislation in the prevention and control of disease in India.
2. The role of legislation in the Health Promotion in India.
3. The role of legislation in Health care delivery for special groups.
4. The existing import health legislation of India.
5. International Health Regulation applicable to India.



**B. Content.**

1. Epidemic Control.
2. MTP
3. Food Adulteration.
4. Environmental Protection.
5. Employees State Insurance Act.
6. Work man compensation Act.
7. Tobacco Control Act.

**3.9.10.18. Global Health, International Health Agency & International Health regulation.**

**3.9.10.19. Topics for Integrated Teaching with Department of Community medicine.**

1. Nutritional Disorders.
2. Communicable diseases of national importance.
3. Non Communicable disease of national importance.
4. Geriatric medicine
5. Adolescent Health
6. Rational drug use
7. Mother and Child Health
8. Industrial health
9. Ethical issues
10. Genetics
11. Mental Health
12. Disaster Management

**3.9.11.1. Field posting in Community Medicine (Duration : 4 weeks in each semester during the III, IV and VI Semesters: Total 12 Weeks)**

**3.9.11.2. Objectives: At the end of the posting, the student should be able to:**

1. Collect information from the patient and draw the Natural History of the morbid condition of the attending patient.
2. Carry out physical examination and undertake available laboratory investigation to come to a diagnosis and provide primary care under the supervision of the preceptors or refer the case to a suitable institution.



3. Understand the social, economic cultural belief and practices dynamics affecting the health seeking behavior of a family for illness and other health promotion and prevention programs.
4. Understand the medico-social problems of patients attending primary health centers.
5. Identify the factors which contribute to the health seeking behavior and health practices.
6. Identify the prevailing health problem in the community.

#### 3.9.11.2. Methodology:

**1. Training in Primary Health Care:** During the IIIrd. Semester they will be posted to the Community Medicine for IV weeks. Each batch posted in urban or rural health centre will be divided into two batches one batch will be alternately posted in Urban/Rural Primary health centre. Each batch will have one supervisor from among the faculty of Community Medicine and selected clinical Department (who has the OPD). In the Primary Health centre/ Urban Health centre during the initial period will be taught how to communicate with the patients attending the Health centre and how to collect information and do physical and other examination of the patient to draw the Natural History of the presenting morbidity as per the Natural History of Disease paradigm and find out the Social, psychological and economic factor affecting the natural history e.g. Clinico-psycho-social case review. In some cases they will visit the family and complete the Natural History and also study the socio cultural factor affecting the family and also the compliance.

**2. Family Health Study (FHS) during IV & V Semester  
(Once a Week, 2-5PM)**

For the Family Health study the students will be posted in the community during the III rd. semester. Two students will make one unit and each unit will be allotted Ten (10) families for each two (2) students. The students posted with an objective of making the student understand the dynamics of Health & Disease in a family and the students will be able to assess the health status of the family members and able to identify the health needs of the family and provide the available services. The following exercise will be carried out by each student in the unit.



1. To study the family structure and health status of the individual members with special reference to:
  2. Nutritional status of the Children under 5 and record in a growth chart.
  3. Immunization Status.
  4. Identifying special groups like pregnant & lactating mother, Women in the reproductive age group, Under 5 child, adolescent child, school aged children adults and geriatric members, their general health needs and special health problems related to the group. (General Health status, Specific health status related to the different groups).
  5. Immunization status
  6. General Health status
    - a. Immunization,
    - b. General Health.
    - c. Specific health problems related the category of the members.
    - d. Family Planning.
    - e. Other health problems related to Preventive & promotive care during special life cycle periods and physiological condition(Pregnancy, Lactation)
1. To identify the Health problems of families over a period (of posting).
2. To assess the knowledge, attitude, behavior and practices regarding health and disease.
3. To counsel the family in solving their health problems and to educate the families to improve their health and family welfare.
4. To provide services to the families allotted (with the help of FHS Team
5. Each batch visits the allotted families along with preceptors once a week and discuss the findings with faculty supervisor next week.

The students will also maintain a record of their family visits and present the family's case history book at the end of the posting. The HOD will be allotted family in the during field visits as well as in briefing. The junior residents will act as **preceptors**. Each batch visits the allotted families along with preceptors once a week and discusses the findings with faculty supervisor

3. Statistical data of the villages under Rural Health Training Centre & Urban Health training centre which will be compared to UP state and India.

The statistics to be known are: Birth Rate

Death Rate

Infant Mortality Rate Maternal Mortality Rate

Eligible Couple Protection Rate Immunization Coverage



4. **Conducting an epidemiological study:** This is a group exercise a group 10 students will be given a topic. The final report (typed two copies) is to be submitted within 1 week of completion of the posting.

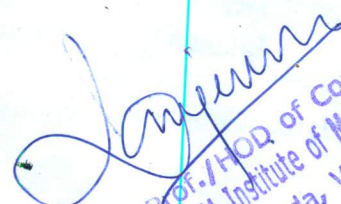
1. Selection of a problem occurring in the community.
2. Review literature to find out the extent of the problem in the country.
3. Decision whether to survey the entire population or a sample using the usual sampling techniques.
4. Designing a Performa, pretesting and then using.
5. Data collected is analyzed and presented to the faculty of community medicine for discussion.
6. A plan for feasible intervention measures is drawn up and will be executed.

5. **Field Visits to study the health care delivery in rural areas and execution of the National Health Programs.**

1. Visit to District to ADMHO's office Visakhapatnam: The class will be divided in three batches and be taken to the CMO's office where they will learn about the Organizational Structure, HMIS, Integrated Disease surveillance and National Health Missions and well as other Health programs.
2. Case Study of Primary Health Centre: 5 to 6 Primary Health centers will be identified and each 10 students will be asked to study the functioning of the PHC and the sub-centers and Anganwadi.
3. Visit to Schools for assessment of Health status, Health promotion.
4. Visit to any selected Industry ( eg. Dairy, Petroleum, Steel, Pharmaceutical, Ship Building) to observe the nature of the work, assess the occupational hazard if any and type of services possible.
5. Visit to Sewage disposal plant.
6. Visit to water treatment Plants.

#### 3.9.12.0. Recommended Books in Community Medicine:

1. Textbook of Preventive and Social Medicine by K Park .
2. Textbook of Preventive and Social Medicine by Gupta & Mahajan.
3. Textbook of Preventive and Social Medicine by Sunderlalal.
4. Textbook of Preventive and Social Medicine by J S Mathur.
5. Essential preventive medicine by Ghai.
6. An Introduction to Biostatistics by P S S Sundar Rao. .
7. National Health Programme by Dr. D.K. Taneja.
8. Advanced text book on food & nutrition .Vol-I & II by Dr M S Swaminathan.
9. Community health education methods: A practical guide by Ben slay.
10. Basic Epidemiology by Beaglehole.

  
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**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH**

**GITAM DEEMED TO BE UNIVERSITY**

**MODEL QUESTION PAPER**

**FINAL M.B.B.S. EXAMINATION**

**PART - I**

**COMMUNITY MEDICINE**

(General concepts of health & disease, epidemiology, disease screening, epidemiology of communicable (including childhood disease like ARI, diarrhea, VPDs ) & non communicable diseases, health information, biostatistics, environmental health, disaster management)

**PAPER - I**

**Time : 3 Hours**

**Max. Marks : 60 Marks**

Note : Answer all questions. Answer Part - A & B in separate answer books. Answers in Part - A should not be answered in part - B or vice -versa. Otherwise they will not be valued.

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**PART - A (30 MARKS)**

1. Define epidemiology. Describe case control studies and enumerate its disadvantages

**(1+6+3 = 10 Marks)**

**Write Short notes on :**

**5x4 = 20 Marks**

2. Classification of pneumonia
3. WHO recommended cut off points for the diagnosis of anemia
4. ACT regimen for treatment of malaria
5. Personal protection measures during earthquake
6. National Immunization schedule

**PART - B (30 MARKS)**

7. Describe the indicators of health

**10**

**Write Short notes on :**

**5x4 = 20 Marks**

8. DASH
9. HDI
10. Prevention of RHD
11. Category I & Category II of RNTCP regimen
12. Web of causation

**GIMSR**  
**DEPARTMENT OF COMMUNITY MEDICINE**

**Syllabus for Paper –II**

Demography, maternal & child health, nutrition & health, social & behavioral sciences as relevant to community health, occupational health, health education & communication including counseling, health planning & management, health care delivery, International health , Relevant health programmes, MDG's to SDG's



### 3.0.0.0. SYLLABUS FOR COMMUNITY MEDICINE

#### 3.0.1.0. Goal:

The broad goal of teaching in Community Medicine is to prepare the student to function effectively as a Community physician.

3.0.2.0. **OBJECTIVES:** At the end of the course, the student should be able to:

- 3.8.2.1. Understand & describe the concepts of Health & Disease, Natural History of Disease &, Levels of Prevention.
- 3.8.2.2. Understand and describe the determinants of health and the role of individuals, family and the community on the health status of the individual/ s family and community.
- 3.8.2.3. Understand and describe the evolution of different types of health care services like Personal Care, Public health and community health/ Community Medicine to cater to the health care needs of the community effectively.
- 3.8.2.4. Understand & describe the concept of Health for All and Primary Health care in health care.
- 3.8.2.5. Understand & describe the demographic pattern of the country and its relation to health.
- 3.8.2.6. Understand & describe basic bio-statistical methods in the study of Individual and community health problem
- 3.8.2.7. Understand & describe the epidemiological methods in the study of Health & Disease and its intervention at the individual & community level.
- 3.8.2.8. Describe the role of environment (Physical: Hot, Cold, Humidity, Air, Noise, Light, Radiation, Physical & chemical) - inside the home, at the workplace and in the community) on the health status of individuals and the community.
- 3.8.2.9. Describe and analyze the importance of water and sanitation on human health.
- 3.8.2.10. Suggest feasible methods of environmental control at household and community levels.
- 3.8.2.11. Describe common occupational hazards in industries, agriculture, and the services available to the industrial workers and feasible methods of control of occupational hazards.

- 3.8.2.12. Describe the important/common health problems (Communicable, Non communicable Diseases, Special health needs and health problems of groups like neonates, preschool, school going, juvenile, women in the reproductive age group, pregnant and lactating woman. Geriatric as group) in the Rural and urban area and the existing Health programs available in India.
- 3.8.2.13. Describe the health care delivery system in India and its component. (Organization and functions of the health care team at Primary Health Centre, Community Health Centre and District levels. HIMS, Human Resources, health care financing)
- 3.8.2.14. Describe the National Health Programs of India.
- 3.9.9.0. **Skills: At the end of the course a student should be able to:**
- 3.9.9.1 Draw natural history of a health problem in an individual suffering from disease & select the appropriate service package using the levels of prevention paradigm.
  - 3.9.9.2 Apply suitable bio-statistical methods and interpret the results in the study of health problems of individuals and the community.
  - 3.9.9.3 Use various methods available to collect vital statistics of the community.
  - 3.9.9.4 Apply appropriate epidemiological methods & tools in the study of health problems (communicable, Non Communicable diseases, health system) at individual and community level.
  - 3.9.9.5 Plan, collect, analyze, interpret and present data from a hospital/community survey on specific health problems.(Children Growth & development, Nutrition, Maternal health, and other child health)
  - 3.9.9.6. Diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources, prevailing socio-cultural beliefs and family resources.
  - 3.9.9.7. Diagnose and manage maternal and child health problems and advise couples and the community on the family planning methods available.
  - 3.9.9.8. Diagnose and manage common nutritional problems at the individual and community levels.
  - 3.9.9.9. Plan and implement, using simple audiovisual aids, a health educational programme and carry out its evaluation.

**C. Didactic Lecture Topics:**

1. Culture, Society and Health
2. Role of Family in health and disease
3. Socio-cultural factors related to health and disease in the context of urban and rural societies.
4. Social Organization and Community Participation
5. Socioeconomic Status and its importance in relation to health and disease.
6. Attitudes: nature, development, methods to change & Measurement of attitudes.
7. Social psychology, Community behavior and community relationship, patient behavior in the Hospital.

**D. Practical:**

1. Study of Family (Type, Structure, socio economic status, Health beliefs, practices.
2. Measurement of Socio economic indicators and Health
3. Construction and pre-testing of questionnaire/ interview schedule
4. Questionnaire design to test attitudes.

**3.9.10.3. ENVIRONMENT AND HEALTH:**

**A. Objectives: At the end of the course the student should be able to:**

1. Describe the physical environment inside the home, at the workplace and in the community, and its impact on health and disease.
2. Suggest appropriate methods for improving the internal/external environment.
3. Define safe water. Describe the sources of water (tap, hand pump, well).
4. State the criteria (national and WHO) for safe water.
5. Describe appropriate methods for making water safe at the domiciliary level.
6. Describe sources of waste and methods of waste control at individual and community levels.
7. Define air pollution, causes of air pollution and describe appropriate measures of control.
8. Describe the effects of noise and radiation on health.
9. Describe the common vectors of diseases and methods of vector control.
10. Describe the various insecticides that are used for vector control.
11. Describe insecticide resistance.
12. Describe the correct method of Bio medical waste disposal.

3.9.9.10 Plan and implement an intervention program with community participation

3.9.9.11 Evaluate the Major ongoing Health programs.

3.9.9.12 Plan and implement a disaster management program

3.9.10.0 **COURSE CONTENTS:**

3.9.10.1. **Concepts of Health & Disease**

- I. Introduction to community medicine, Medicine in antiquity, evolution of community medicine.
- II. Definition of health Dimensions of Health, holistic concepts of health. Individual's Health, Community's Health.
- III. Determinants of health, Characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease.
- IV. Understanding the concept of natural history of disease and levels of prevention.
- V. Measurements in Health.
- VI. Constitutional provision for Health & Welfare for the population of India.
- VII. Health profile of India and outline of Health care delivery system.

**Practical & Health Visits:**

- I. Rural Health Institutions (Sub Centre, PHC, CHC, Secondary & Tertiary Hospital)
- II. Computing: Major Health Indicators

3.9.10.2. **Behavioral Sciences.**

**A. Objectives: At the end of the course the student should be able to:**

1. Define social & behavioral sciences and discuss their role in Community Medicine.
2. Describe the role of the family/community in health and disease.
3. Measure the socio-economic status of a family and describe its importance in health and disease.
4. Construct, pre-test and validate questionnaire/interview schedule for the study of family and community.
5. Understand the term attitudes and describe the process of attitudinal development and methods to change.



## B. Didactic Lecture Topics

1. Environment: physical environment inside and outside the home and its effect on Health/
2. Concepts of safe and wholesome water, sanitary sources of water, water related diseases, water purification processes, water quality standards. Physical and chemical standards of drinking water quality and tests for assessing bacteriological quality of water. Concepts of water conservation and rainwater harvesting.
3. Sanitary disposal of Wastes (solid waste ,human excreta and sewage disposal.
4. Air pollution, green house effect, ozone layer Health hazards of air, noise, radiation pollution
5. Noise and radiation pollution.
6. Describe the common vectors of diseases and methods of vector control.
7. Describe the various insecticides that are used for vector control.
8. Insecticidal Resistance.
9. BIO-MEDICAL WASTE AND ITS DISPOSAL: Classification/ Category, sources, health hazards and treatment of Bio-Medical, Waste.

## C. Practical Exercise:

1. Assessment of environmental status of a Household/ community and its effect on the health of the members of the household.
2. Identification of different types of vectors, how to study its density and habitat.
3. Identification of Various methods of using insecticide for vector control.
4. Visit to Hospital to observe the Bio medical waste disposal.

### 3.9.10.4. Health Promotion:

A. **Objective:** At the end of the course the student should be able to:

1. Understand & describe the concepts of Health promotion, Health Education, Information Education and Communication ( IEC) Behavioral change communication (BCC).
2. Understand & describe the principles of Communication and existing barriers to effective communication and methods to overcome them.
3. Able to communicate effectively with the individual, family and community.
4. Design different health promotion packages for individual, family and community.

## B. Didactic Lecture Topics

1. Health Promotion as the key to primary prevention.
2. Communication- Art & Skill.
3. Definition and principles of health education
4. Health educational methods/ Audiovisual aids & Use of other aids in health education
5. Methods of overcoming resistance in the individual, family and community.
6. Planning a health educational program.
7. Information Education Communication & Behavior Change communication Strategies

## C. Practical exercise:

1. Preparing and delivering a health educational talk on simple issues:
  - Personal hygiene
  - Clean water
  - Clean domestic environment
  - Clean external environment
  - Dental hygiene
  - Any other topic.
2. Organizing a IEC camp
3. Evaluation of health educational activities

### 3.9.10.5. Nutrition & Health.

#### A. Objectives: At the end of the course the student should be able to:

1. Describe common nutrition related health disorders viz. Protein energy malnutrition, Obesity, micro nutrient deficiencies) and their control and management.
2. Undertake nutritional assessment of individual, families and the community by using appropriate method such as: anthropometrics, clinical examination etc.
3. Plan and recommend a suitable diet for the individuals and families as per local availability of foods and economic status, etc.
4. Nutritional surveillance, education and rehabilitation.
5. Food fortification, additives, adulteration, and food hygiene
6. National Nutrition policy, Important National Nutritional Programs.

## B. Didactic Lecture Topics

1. Role of nutrition in health and disease
2. Nutritional requirements and sources, Balanced Diet
3. Major Nutritional Programs, viz. Micronutrient deficiency, Protein energy malnutrition, Obesity
4. National Nutrition Policy and National Nutritional programs.

## C. Practical:

1. Nutritional status assessment of Individuals, Community.
2. Evaluation Nutritional program

### 3.9.10.6. Biostatistics

A. **Objectives:** At the end of the course the student should be able to:

1. Define, calculate and interpret commonly used statistical methods.
2. Select and use appropriate diagrammatic representations of statistical data.
3. Define probability.
4. Define normal distribution.
5. Define bias, random error.
6. Describe methods of sampling and calculate sample size.
7. Carry out random and cluster sampling.
8. Describe the demographic cycle and define the pattern of population inat different phases of the demographic cycle.
9. Test of significance
10. Define vital statistics, describe their method of collection.
11. Describe the sources of data and their merits for use and census in India.

## B. Didactic Lecture Topics

1. Need of Bio-statistics in Medicine.
2. Frequency Distribution
3. Measures of Central Tendency & Measures of dispersion..
4. Tabular & diagrammatic presentation of data probability
5. Normal Distribution.

6. Probability
7. Standard error estimation
8. Alpha, Beta error
9. Confidence Interval
10. Bias/Random errors
11. Tests of Significance
12. Sample size calculation & Sampling methods

**C. Practical:**

1. Graphical Presentation of Data.
2. Random sampling - cluster sampling (EPI)
3. Calculation of Vital & fertility rates.
4. Test of significance.
5. Demography

**3.9.10.7. Basic Epidemiology.**

**A.Objectives: At the end of the course, student should be able to:**

1. Epidemiology: definition, concepts, uses and its role in health and disease.
2. Describe the Natural History of Disease (Definition of the terms used in describing disease transmission and control, Modes of transmission and measures for prevention and control of communicable and non-communicable diseases.
3. Describe the levels of prevention and its relationship with the Natural History of Disease, General principles of prevention and control of communicable, non communicable diseases and other health conditions of public health importance.
4. Principal sources of epidemiological data.
5. Definition, calculation and interpretation of morbidity and mortality indicators
6. Incidence, Prevalence, Rates & Ratios.
7. Concept of association, causation and biases.
8. Describe the various types of epidemiological study designs, their application, biases, statistical analyses, relative merits and demerits.
9. Describe the need and uses of screening tests, Differentiate between screening and diagnostic tests.

10. Calculate the sensitivity, specificity, positive predictive value of tests given a set of data.
11. Define surveillance and its role in the study of epidemiology and disease control.

#### B. Didactic Lecture Topics

1. Epidemiology; Introduction (Definitions, scope in hospital, community, planning)
2. Measures of Morbidity/Mortality Rates.
3. Incidence, Prevalence.
4. Rates, Ratios, Proportions, Crude rates/standardized
5. Fertility Rates
6. Sources of epidemiological data.
7. Measurements in Health & Disease.
8. Screening Tests vs Diagnostic Tests.
9. Descriptive, Analytical & Experimental methods in epidemiology- Different types of Epidemiological studies, Case Control, Cohort, cross sectional & Randomized Control Trials.
10. Surveillance

#### C. Practical:

1. Clinico-psycho-social case review ( Individual)
2. Family study.
3. Drawing the Natural History of Disease (Communicable 5 ), Non Communicable(5)
4. Application of the levels of prevention in the Communicable & Non communicable Diseases.
5. Use of basic epidemiological tools to make a community diagnosis of the health situation, in orders to formulate appropriate intervention measures.
6. Investigation of an epidemic of communicable disease and to understand the principals of control measures.

**3.9.10.8. Epidemiology of Communicable & Non communicable Diseases.**

**A. Objective; At the end of the course the student should be able to:**

1. Describe the epidemiology of common communicable diseases. (Food borne Disease, Respiratory disease- TB, ARI, Vector borne diseases- Malaria, Kalazar, Zoonotic Infection, Person to person infection like, STD, HIV, Blood borne infection, Vaccine preventable Diseases.
2. Describe the epidemiology of non communicable diseases Non-communicable Diseases, Coronary heart disease, Hypertension, stroke Rheumatic heart disease, Cancers, Obesity, Diabetes, Blindness, Injury and Accidents.
3. Describe the steps involved in investigating an epidemic.

**B. Didactic Lecture Topics:**

**i. Communicable Diseases:**

1. Malaria
2. STDs / HIV/AIDS
3. Pulmonary Tuberculosis
4. Leprosy
5. Diphtheria, Pertussis, Tetanus
6. Poliomyelitis
7. Measles, Mumps & Rubella
8. Chicken, A.R.I.
9. Diarrhoeal Diseases
10. Infective Hepatitis
11. Kala azar
12. Arbo viral diseases
13. Filariasis
14. Plague
15. Intestinal infestations

## II. Non Communicable Diseases

1. Nutritional Disorders
2. RHD /CHD / Hypertension
3. Cancers
4. Blindness
5. Road Traffic Accidents
6. Diabetes mellitus
7. Obesity

### C. Practical:

1. Plan and investigate an epidemic of a communicable disease in a hospital/ community setting, and institute control measures.

### 3.9.10.9. Demography & Family Planning.

#### A. Objectives: At the end of the course the student should be able to:

1. Define Demography & Describe demographic cycle and its importance on Health of Country.
2. Describe the role of population dynamics of India including Population explosion, Declining sex ratio, Demographic transition and its effect on Health of the Nation.
3. Calculate and interpret the demographic indices like birth rate, death rate, fertility rates.
4. National Population Policy

#### B. Didactic Lecture Topics

1. Demography Definition, Cycle, Demographic transition, and its role on Health.
2. Population Dynamics & Health effect of Demographic transition and declining sex ratio on health.
3. National Population Policy of India.

#### C. Practical:

1. How to calculate & interpret the different Demographic indices.

### 3.9.10.10. Maternal & Child Health.

#### A. Objectives: At the end of the course the student should be able to:

1. Describe the major maternal and child health problems in India.
2. Describe the local customs and practices during pregnancy, childbirth and lactation, child Feeding practices and its effect on Mother & Child Health..
3. Describe the specific Health intervention packages for Maternal Health problems during Pregnancy & Lactation.
4. Describe the specific Health intervention packages available for Neonates, Infants, Preschool child
5. Describe the role of Family welfare on Maternal & Child Health
6. Describe the various family planning methods. Describe the indications, contraindications, side effects and complications of the methods.
7. Describe the Salient features of the existing National programs related to Reproductive child health (RCH), its' components, including child survival and safe motherhood, Janani Suksha Yogona Universal Immunization Program, Integrated Child Development Services Scheme (ICDS),Integrated Management of Neonatal and Childhood Illness(IMNCI).
8. Organization, implementation and evaluation of reproductive and child health program components,

#### B. Didactic Lecture Topics

1. Major Maternal Health Indicators and its determinants & available intervention packages. (Pre pregnancy, pregnancy, delivery, Puerperium, lactation.)
2. Major Child Health indicators and its determinants & available intervention packages (Neonatal, perinatal, Post neonatal, infancy, pre-school)
3. Salient features of the National Health programs, Objective, components, organization & implementation, monitoring mechanism..



**C. Practical:**

1. Advise a mother on the importance of breast feeding and weaning at appropriate time and addition of weaning foods.
2. Identify and manage high risk mothers and children.
3. Define an eligible couple. Calculate eligible couple protection rate.
4. Advise a couple on spacing and terminal methods.
5. Evaluate state of reproductive and child health in a community and also the existing programs.

**3.9.10.11. Occupational Health.**

**A. Objectives; At the end of the course the student should be able to:**

1. Describe the common industrial and occupational diseases.
2. Describe the feasible methods of control of occupational diseases.
3. Describe the important features of the Workman Compensation Act and Employees State Insurance program. provision of health services

**B. Didactic Lecture Topics**

1. Working environment, health hazards of industrial and agricultural workers
2. Common occupational lung diseases & its prevention
3. Common occupational skin diseases and cancers & its prevention
4. Principles of prevention of Occupational diseases
5. Legal status in relation to Workman Compensation Act
6. Employees' State Insurance Act

**C. Practical**

1. Visit to a factory.
2. Case study of a local Industry.

**3.9.10.12. Health of Special Groups: Geriatrics, Adolescent, Handicaps.**

**A. Objectives**

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

1. Describe the Health needs of the Geriatrics, Adolescents and Physically & Mentally challenged people.
2. Describe the special health, welfare and other statutory intervention package available to meet the needs.
3. Describe the available Health & welfare programs being implemented in the community and its effect on the health needs.

## **B. Didactic Lecture Topics.**

1. Geriatric groups special physiological & social needs, common Health problems and its primary care.
2. Adolescent groups' special physiological & social needs, common Health problems and its primary care.
3. Physically and mentally challenged people's health problems.
4. Rehabilitation.

## **C. Practical: Case study.**

### **3.9.10.13. Health Care delivery system.**

#### **A. Objectives:** At the end of the course, the student should be able to:

1. Describe the components & nature of personal & public Health services.
2. Describe the strategy of Primary Health care in organizing Health care delivery system.
3. Describe the different models of existing health care delivery system.
4. Describe the existing health delivery system in India.
5. Describe the state owned Health infrastructure available in Rural & Urban area in India.(primary, secondary and tertiary level)
6. Describe the Health manpower available in the peripheral Health Institution of India.
7. Describe the Health services organizational chart at the central and state level.
8. Describe the role of Private health Institutions in health care in India.
9. Describe the role of Voluntary health organization in health care delivery.
10. Describe the Health care financing specially Health insurance in India.
11. Describe the National Health Missions of India and its role in Health care delivery..

## **B. Didactic Lecture Topics.**

1. Personal Health Care Services vs Public Health Services.
2. Primary Health Care strategy.
3. Evolution of Health care delivery system in India from Bhore committee to Health Missions.

4. Prevailing health care delivery system in Rural & Urban India.
5. District Health system in India its organization, manpower, functioning and its role in providing comprehensive health care.
6. Functions of each health institution from Primary to tertiary and the responsibility of each health functionaries from community level to District level.
7. Monitoring and evaluation of the functioning of District Health system.

**C. Practical:** Case study on Functioning of a Sub-centre, PHC, and Community based Health functionaries.

#### **3.9.10.14. Health Planning & Management.**

**A. Objective:** At the end of the course, the student should be able to

1. Describe the National Health Policy
2. Describe the planning cycle & Process.
3. Describe the use health and other epidemiological data in the planning process.
4. Describe Health planning process in India.
5. Describe the broad principles of Management,
6. Describe the Health Management System in India.
7. Principles Material management & Personal Management.

#### **B. Didactic Lecture Topics**

1. National Health Policy.
2. Health Needs and Demands.
3. Planning cycle and process.
4. Health Information System.
5. Material Management
6. Personal Management.

**C. Practical:** Project: Plan for Health care delivery during Natural Disaster.

#### **3.9.10.15. Health Economics.**

**A. Objective:** At the end of the course, the student should be able to:

1. Appreciate cost considerations in clinical and public health interventions.

## **B. Didactic Lecture Topics**

1. Need of health economics
2. Methods of economic analyses in health

### **3.9.10.16. National Health Programs.**

#### **OBJECTIVE:**

At the end of the course, the student should be able to describe the Goal, major objectives, Intervention packages, Strategy of delivery of packages and monitoring the performance.

#### **A. Didactic Lectures:** Description of all the following Programs

1. RNTCP.
2. National Vector borne disease control program.
3. National Blindness control program.
4. Integrated Disease Surveillance Project (IDSP)
5. National leprosy control program.
6. National AIDS control program.
7. Reproductive and Child Health.
8. National Iodine deficiency disorder control program.
9. National cancer control program.
10. National cancer control program.
11. Health related Millennium Development Goals.
12. Integrated Child Development Scheme.
13. National Family welfare program.
14. National Health Mission.

#### **B. Practical:** Case study: Evaluation of any one of the program. Group Exercise group of 5

### **3.9.10.17. Public Health Legislation.**

#### **A. Objective:** At the end of the course, the student should be able to describe

1. The role of legislation in the prevention and control of disease in India.
2. The role of legislation in the Health Promotion in India.
3. The role of legislation in Health care delivery for special groups.
4. The existing import health legislation of India.
5. International Health Regulation applicable to India.

**B. Content.**

1. Epidemic Control.
2. MTP
3. Food Adulteration.
4. Environmental Protection.
5. Employees State Insurance Act.
6. Work man compensation Act.
7. Tobacco Control Act.

**3.9.10.18. Global Health, International Health Agency & International Health regulation.**

**3.9.10.19. Topics for Integrated Teaching with Department of Community medicine.**

1. Nutritional Disorders.
2. Communicable diseases of national importance.
3. Non Communicable disease of national importance.
4. Geriatric medicine
5. Adolescent Health
6. Rational drug use
7. Mother and Child Health
8. Industrial health
9. Ethical issues
10. Genetics
11. Mental Health
12. Disaster Management

**3.9.11.1. Field posting in Community Medicine (Duration : 4 weeks in each semester during the III, IV and VI Semesters: Total 12 Weeks)**

**3.9.11.2. Objectives: At the end of the posting, the student should be able to:**

1. Collect information from the patient and draw the Natural History of the morbid condition of the attending patient.
2. Carry out physical examination and undertake available laboratory investigation to come to a diagnosis and provide primary care under the supervision of the preceptors or refer the case to a suitable institution.

3. Understand the social, economic cultural belief and practices dynamics affecting the health seeking behavior of a family for illness and other health promotion and prevention programs.
4. Understand the medico-social problems of patients attending primary health centers.
5. Identify the factors which contribute to the health seeking behavior and health practices.
6. Identify the prevailing health problem in the community.

#### 3.9.11.2. Methodology:

**1. Training in Primary Health Care:** During the IIIrd. Semester they will be posted to the Community Medicine for IV weeks. Each batch posted in urban or rural health centre will be divided into two batches one batch will be alternately posted in Urban/Rural Primary health centre. Each batch will have one supervisor from among the faculty of Community Medicine and selected clinical Department (who has the OPD). In the Primary Health centre/ Urban Health centre during the initial period will be taught how to communicate with the patients attending the Health centre and how to collect information and do physical and other examination of the patient to draw the Natural History of the presenting morbidity as per the Natural History of Disease paradigm and find out the Social, psychological and economic factor affecting the natural history e.g. Clinico-psycho-social case review. In some cases they will visit the family and complete the Natural History and also study the socio cultural factor affecting the family and also the compliance.

**2. Family Health Study (FHS) during IV & V Semester  
(Once a Week, 2-5PM)**

For the Family Health study the students will be posted in the community during the III rd. semester. Two students will make one unit and each unit will be allotted Ten (10) families for each two (2) students. The students posted with an objective of making the student understand the dynamics of Health & Disease in a family and the students will be able to assess the health status of the family members and able to identify the health needs of the family and provide the available services. The following exercise will be carried out by each student in the unit.



1. To study the family structure and health status of the individual members with special reference to:
  2. Nutritional status of the Children under 5 and record in a growth chart.
  3. Immunization Status.
  4. Identifying special groups like pregnant & lactating mother, Women in the reproductive age group, Under 5 child, adolescent child, school aged children adults and geriatric members, their general health needs and special health problems related to the group. (General Health status, Specific health status related to the different groups).
  5. Immunization status
  6. General Health status
    - a. Immunization,
    - b. General Health.
    - c. Specific health problems related the category of the members.
    - d. Family Planning.
    - e. Other health problems related to Preventive & promotive care during special life cycle periods and physiological condition(Pregnancy, Lactation)
      1. To identify the Health problems of families over a period (of posting).
      2. To assess the knowledge, attitude, behavior and practices regarding health and disease.
      3. To counsel the family in solving their health problems and to educate the families to improve their health and family welfare.
      4. To provide services to the families allotted (with the help of FHS Team
      5. Each batch visits the allotted families along with preceptors once a week and discuss the findings with faculty supervisor next week.

The students will also maintain a record of their family visits and present the family's case history book at the end of the posting. The HOD will be allotted family in the during field visits as well as in briefing. The junior residents will act as **preceptors**. Each batch visits the allotted families along with preceptors once a week and discusses the findings with faculty supervisor

3. Statistical data of the villages under Rural Health Training Centre & Urban Health training centre which will be compared to UP state and India.

The statistics to be known are: Birth Rate  
 Death Rate  
 Infant Mortality Rate Maternal Mortality Rate

Eligible Couple Protection Rate Immunization Coverage



4. **Conducting an epidemiological study:** This is a group exercise a group 10 students will be given a topic. The final report (typed two copies) is to be submitted within 1 week of completion of the posting.

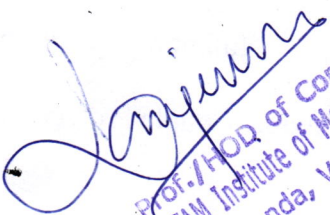
1. Selection of a problem occurring in the community.
2. Review literature to find out the extent of the problem in the country.
3. Decision whether to survey the entire population or a sample using the usual sampling techniques.
4. Designing a Performa, pretesting and then using.
5. Data collected is analyzed and presented to the faculty of community medicine for discussion.
6. A plan for feasible intervention measures is drawn up and will be executed.

5. **Field Visits to study the health care delivery in rural areas and execution of the National Health Programs.**

1. Visit to District to ADMHO's office Visakhapatnam: The class will be divided in three batches and be taken to the CMO's office where they will learn about the Organizational Structure, HMIS, Integrated Disease surveillance and National Health Missions and well as other Health programs.
2. Case Study of Primary Health Centre: 5 to 6 Primary Health centers will be identified and each 10 students will be asked to study the functioning of the PHC and the sub-centers and Anganwadi.
3. Visit to Schools for assessment of Health status, Health promotion.
4. Visit to any selected Industry ( eg. Dairy, Petroleum, Steel, Pharmaceutical, Ship Building) to observe the nature of the work, assess the occupational hazard if any and type of services possible.
5. Visit to Sewage disposal plant.
6. Visit to water treatment Plants.

#### 3.9.12.0. Recommended Books in Community Medicine:

1. Textbook of Preventive and Social Medicine by K Park .
2. Textbook of Preventive and Social Medicine by Gupta & Mahajan.
3. Textbook of Preventive and Social Medicine by Sunderlalal.
4. Textbook of Preventive and Social Medicine by J S Mathur.
5. Essential preventive medicine by Ghai.
6. An Introduction to Biostatistics by P S S Sundar Rao. .
7. National Health Programme by Dr. D.K. Taneja.
8. Advanced text book on food & nutrition .Vol-I & II by Dr M S Swaminathan.
9. Community health education methods: A practical guide by Ben slay.
10. Basic Epidemiology by Beaglehole.

  
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# GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

GITAM DEEMED TO BE UNIVERSITY

## MODEL QUESTION PAPER

FINAL M.B.B.S. EXAMINATION

PART - I

### COMMUNITY MEDICINE

(Demography, maternal & child health, nutrition & health, social & behavioral sciences as relevant to community health, occupational health, health education & communication including counseling, health planning & management, health care delivery)

PAPER - II

Time : 3 Hours

Max. Marks : 60 Marks

Note : Answer all questions. Answer Part - A & B in separate answer books. Answers in Part - A should not be answered in part - B or vice-versa. Otherwise they will not be valued.

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#### PART - A (30 MARKS)

1. Write the health status and health problems of India

(3+7 = 10 Marks)

Write Short notes on :

5x4 = 20 Marks

2. Uses of growth chart
3. Integrated vector management
4. Control measures for dengue
5. IDD
6. Occupational hazards of agricultural workers

#### PART - B (30 MARKS)

7. What are the emerging and re-emerging diseases? Describe antimicrobial resistance and preventive measures for it.

(4+6 = 10 Marks)

Write Short notes on :

5x4 = 20 Marks

8. Principles of primary health care
9. Causes of high maternal mortality
10. Define monitoring and surveillance
11. Mission Indra dhanush
12. Planning cycle

usstrack@gsia.ch



### 3.10.0.0. Syllabus for OPTHALMOLOGY

#### 3.10.1.0. GOAL.:

The broad goal of the teaching of students in ophthalmology is to provide such knowledge and skills to the students that shall enable him to practice as a clinical and as a primary eye care physician and also to function effectively as a community health leader to assist in the implementation of National Program for the prevention of blindness and rehabilitation of the visually impaired.

#### 3.10.2.1. Objective

- A. **Knowledge:** At the end of the course, the student should have knowledge of:
1. common problems affecting the eye;
  2. principles of management of major ophthalmic emergencies
  3. main systemic diseases affecting the eye
  4. effects of local and systemic diseases on patient's vision and the necessary action required to minimize the sequel of such diseases;
  5. adverse drug reactions with special reference to ophthalmic manifestations;
  6. magnitude of blindness in India and its main causes: National program of control of blindness and its implementation at various levels
  7. eye care education for prevention of eye problems
  8. role of primary health centre in organization of eye camps
  9. organization of primary health care and the functioning of the ophthalmic assistant.
  10. integration of the national program for control of blindness with the other national health programs;
  11. eye bank organization
- B. **Skills:** At the end of the course, the student should be able to:
1. elicit a history pertinent to general health and ocular status;
  2. assist in diagnostic procedures such as visual acuity testing,
  3. examination of eye, Schiottz tonometry, Staining for Corneal pathology,
  4. confrontation perimetry,
  5. Subjective refraction including correction of presbyopia and aphakia, direct ophthalmoscopy and conjunctival smear examination and Cover test.
  6. diagnose and treat common problems affecting the eye;
  7. interpret ophthalmic signs in relation to common systemic disorders;
  8. assist/observe therapeutic procedures such as sub-conjunctival injection, Corneal/Conjunctival foreign body removal, Carbolic cautery for corneal ulcers, Nasolacrimal duct syringing and tarsorrhaphy;
  9. provide first aid in major ophthalmic emergencies;
  10. assist to organise community surveys for visual check up;
  11. assist to organise primary eye care service through primary health centres;
  12. use effective means of communication with the public and individual to motivate for surgery in cataract and for eye donation;
  13. establish rapport with his seniors, colleagues and paramedical workers, so as to effectively function as a member of the eye care team.



**C. Integration:**

The undergraduate training in Ophthalmology will provide an integrated approach towards other disciplines especially neurosciences, Otorhino-laryngology, General Surgery and Medicine.

**3.10.3.1. Teaching program**

**3.10.3.2. Didactic lectures**

**A. Semester 5th**

1. Microbiology in relation to eye
2. Pathology in relation to eye
3. Pharmacology in relation to eye
4. Symptomatology in Ocular disorders and their Pathogenesis
5. Ocular involvement in systemic diseases

**B. Semester 6th**

1. Disorders of the Lid
2. Disorders of the Lacrimal Apparatus
3. Conjunctivitis & Ophthalmia Neonatorum
4. Trachoma & Other chronic conjunctivitis
5. Keratitis and corneal ulcers
6. Corneal ulcer
7. Scleritis & Episcleritis
8. Refractive Errors & Method of correction
9. Presbyopia, accommodation convergence
10. Congenital cataract
11. Senile cataract
12. Metabolic & complicated cataract
13. Primary Angle closure glaucoma
14. Congenital glaucoma
15. Primary Open angle glaucoma
16. Secodary glaucomas
17. Anterior uveitis
18. Posterior uveitis
19. Blindness prevalence, prevention & rehabilitation

**C. Semester 7th**

1. Retinopathies, Hypertensive, Toxaemia & Pregnancy
2. Diabetic Retinopathy
3. Retinal Detachment, types, symptoms & pre-disposing factors
4. Endocrine ophthalmology
5. Retinal vascular disorders
6. Retinoblastoma & other ocular neoplasms
7. Binocular vision amblyopia & concomitant squint
8. Nutritional disorders
9. Incomitant strabismus
10. Visual acuity, pupillary path ways & cranial nerve palsies
11. Optic nerve lesions
12. Ocular emergencies (Traumatic)
13. Ocular emergencies (Non-Traumatic)
14. Minor ophthalmic surgery
15. General principles of Intra ocular surgery
16. National programme for control of blindness
17. Comprehensive eye care in rural set up
18. Eye banking & ethics in ophthalmology

**3.10.3.3. Clinical ward teaching**

1. Trachoma
2. Entropion / ectropion
3. Pterygium
4. NLD block / Dacryocystitis
5. Conjunctivitis / allergic / acute
6. Corneal ulcer
7. Keratitis
8. Iridocyclitis
9. Angle closure glaucoma
10. Scleritis / episcleritis
11. Dark room
12. Refractive errors & presbyopia



13. Cataract – senile
  - Complicated
  - Post operative
  - Complications
  - Intraocular lenses
14. Basic sciences (Microbiology, Pharmacology, Pathology)
15. Open angle glaucoma
16. Xerophthalmia
17. Corneal opacities
18. Ocular injury
19. Perforating / concussional injuries
20. Diabetic retinopathy
21. Hypertensive retinopathy
22. Anemic and other retinopathies
23. Indirect ophthalmoscopy
24. Orthoptics
25. Concomitant squint
26. Paralytic squint
27. Surgical Instruments

3.10.4.1. Third Professional Part I, to be conducted at the end of VII th. Semester:  
 Distribution of marks in Ophthalmology: Total Marks=100

3.10.4.2. Written Papers one Total Marks=40

- ~~Multiple Choice~~ single best answer questions 10 in number 10 marks
- ~~carrying one mark each~~
- Long Essay Question one based on clinical scenario/ problem based 10 marks ✓
- Short notes 3 in number each carrying 4 marks  $5 \times 4$  ~~12~~ marks <sup>20</sup>
- ~~Four~~ ultra short answer questions carrying 2 marks each  $5 \times 2$  ~~8~~ marks <sup>10</sup>

3.10.4.3. Oral: Total Marks=05

- Instrument Two 1 Marks
- X -ray, other imaging 1 Marks
- Oral questions 3 Marks



**3.10.4.4. Practical:**

**Total Marks=35**

Two long cases of 15 marks each

30 Marks

One short case/ X-rays/ instruments

05 Marks

**3.10.45 . Internal Assessment:**

**Total Marks=20**

- 4<sup>th</sup> 5<sup>th</sup> & 6<sup>th</sup> semester day to day assessment: (Ward completion:

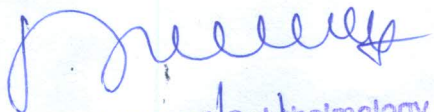
Theory/Practical, Case history:

10 Marks

- 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>. End semester Theory:

10 marks.

**Pass:** A candidate must obtain 50% in aggregate with a minimum of 50% in theory and minimum of 50% in practical.

  
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Gitam University

Model question Paper for Ophthalmology-1

Answer all questions. draw diagrams where ever necessary

Total marks 40

Time 2Hrs

1. What are the causes of Red Eye ? differential diagnosis ? treatment of Acute congestive Glaucoma

3+, 3, + 4 10

WRITE SHORT NOTES ON

4x5 20

2. NPCB

3. Astigmatism

3. Tonometry

4. Diabetic Retinopathy

5. Optic neuritis

6. congenital cataract

**Ultra short notes on**

2x5 10

7. KPs

8. Corneal Foreign body

9. Coloboma

10. Atropine

11. corneal endothelium

**ENT CLASSES / SYLLABUS TOPIC WISE LIST-2018**

**EAR**

1. DEVELOPEMENT OF EAR
2. ANATOMY OF EAR
3. PHYSIOLOGY OF HEARING&EQUILIBRIUM
4. CLINICAL EXAMINATION OF EAR
5. INVESTIGATIONS OF EAR
6. TESTS OF HEARING & BALANCE
7. DISEASES OF EXTERNAL EAR
8. ASOM
9. CSOM
10. SOM
11. OTOSCLEROSOS
12. DISORDERS OF BALANCE
13. 7N DISORDERS
14. TINNITUS
15. DISEASES OF INNER EAR- MENIERS
16. ACOUSTIC NEUROMA
17. HEARING LOSS
18. TUMOURS OF EAR&CP ANGLE
19. HEARING AIDS & IMPLANTS IN OTOTOLOGY

**NOSE**

1. ANATOMY OF NOSE&PNS
2. PHYSIOLOGY OF NOSE
3. CLINICAL EXAMINATION OF NOSE
4. INVESTGATIONS & NASAL ENDOSCOPY
5. CONGENITAL ANOMALIES OF NOSE & PNS
6. DISEASES OF EXTERNAL NOSE
7. ACUTE RHINO- SINUSITIS
8. ALLERGIC RHINITIS
9. POLYPOSIS OF NOSE&PNS
10. CHRONIC RHINO- SINUSITIS
11. FESS
12. CHRONIC NON-SPECIFIC CONDITIONS OF NOSE
13. DISEASES OF EXT.NOSE
14. DISEASES OF SEPTUM & DNS
15. EPISTAXIS
16. ATROPHIC RHINITIS
17. VASOMOTOR RHINITIS
18. NASAL&FACIAL TRAUMA
19. FB NOSE & MYASIS
20. GRANULOMATOUS DISEASES OF NOSE
21. ORBITAL INVOLVEMENT IN SINO-NASAL DISEASE
22. BENIGN TUMORS AND TUMOR LIKE CONDITIONS OF NOSE&PNS
23. OLFACTION & DISORDERS OF OLFACTION
24. MAXILLO-FACIAL TRAUMA
25. FACIAL PAIN
26. SPECIFIC CHRONIC NASAL INFECTIONS
27. COMMON SURGICAL PROCEDURES OF NOSE & PNS
28. ORBIT IN ENT DISEASES
29. SNORING & OSA IN ADULTS



## ORAL CAVITY&PHARYNX

1. ANATOMY OF ORAL CAVITY & PHARYNX
2. PHYSIOLOGY OF O&P
3. EXAMINATION OF O&P
4. INVESTIGATIONS OF O&P
5. DISEASES OF ORAL CAVITY
6. DISEASES OF SALIVARY GLANDS
7. TONSIL & ADENOIDS
8. INFECTIONS OF PHARYNX
9. LYMPHATIC SYSTEM OF NECK & PHARYNX, WALDEYER'S RING
10. TUMOURS OF ORAL CAVITY & OROPHARYNX
11. TUMOURS OF NASOPHARYNX
12. TUMOURS OF HYPOPHARYNX
13. THYROID DISEASE
14. NECK SPACE INFECTIONS AND ABSCESSSES
15. NECK MASSES
16. DYSPHAGIA
17. OESOPHAGUS ANATOMY AND PHYSIOLOGY OF DEGLUTITION
18. CONGENITAL CONDITIONS OF OESOPHAGUS
19. TRAUMATIC CONDITIONS OF OESOPHAGUS
20. NEUROLOGICAL CONDITIONS OF OESOPHAGUS
21. FB IN UPPER DIGESTIVE TRACT
22. NEOPLASMS OF OESOPHAGUS
23. DYSPHAGIA

## LARYNX


1. ANATOMY OF LARYNX
2. PHYSIOLOGY OF PHONATION/SPEECH
3. PHYSIOLOGY OF TRACHEO-BRONCHEAL TREE (REFER HAZARIKA)
4. EXAMINATION & INVESTIGATION OF LARYNX
5. CONGENITAL MALFORMATIONS OF LARYNX
6. INFECTIONS OF LARYNX
7. BENIGN TUMOURS OF LARYNX
8. DISORDERS OF VOICE/SPEECH
9. NEUROLOGICAL CONDITIONS OF LARYNX & VOCAL CORD PALSY
10. FUNCTIONAL & OTHER DISORDERS OF LARYNX
11. NEOPLASMS OF LARYNX
12. FB IN AIRWAY
13. STRIDOR
14. TRACHEOSTOMY

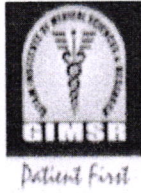
## HEAD&NECK

1. ANATOMY OF NECK
2. EVALUATION OF PATIENT WITH HEAD & NECK CANCER
3. CLASSIFICATION OF NECK SWELLING
4. CYSTIC LESIONS OF H&N
5. SOLID SWELLINGS OF H&N
6. THYROID NEOPLASMS

## RECENT ADVANCES IN ENT

1. RT IN ENT
2. CHEMOTHERAPY IN ENT
3. HIV IN ENT

  
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Research



DEPARTMENT OF OTO-RHINO-LARYNGOLOGY  
FINAL MBBS PART-1 VI Semester  
MODEL THEORY EXAMINATION QUESTION PAPER  
DURATION:2 hours Total Marks:40

Essay question:

10 marks

Q1. Discuss in detail about Development of Nose and Anatomy of Lateral wall of Nose with diagrams?

Short notes:

5 marks each(5×4=20)

Q2. Anatomy of Tracheo-Broncheal tree

Q3. Sjogren's syndrome

Q4. Mastoid Air cell system

Q5. Glue Ear

Ultra shorts:

2 marks each(5×2=10)

Q6. Canine fossa

Q7. Middle ear muscles-anatomy& nerve supply

Q8. Cartilages of Larynx

Q9. Waldeyer's Inner ring

Q10. Grdenigo's Syndrome



# **Competency based medical education(CBME)**

## **Department of General Medicine**

### **Goal:**

The broad goal of the teaching of under graduate students in the medicine is to have the knowledge, skills and behavioural attributes to function effectively as the first contact physician.

### **Objectives:**

#### **KNOWLEDGE:**

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

- (1) Diagnose common clinical disorders with special reference to infectious diseases and nutritional disorders, tropical and environmental diseases.
- (2) Outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contraindications.
- (3) Propose diagnostic and investigative procedures and ability to interpret them
- (4) Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.
- (5) Recognise geriatric disorders and their management.

#### **Skills:**

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

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

4. Assist the common bedside investigative procedures like pleural fluid paracentesis, lumbar puncture and bone marrow aspiration/biopsy.

### **Departmental Objectives:**

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

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

### **Competencies:**

The student must demonstrate ability to do the following in relation to common medical problems of the adult in the community:

1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management.

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

### **Integration:**

The teaching should be aligned and integrated horizontally and vertically in order to provide sound biologic basis and incorporating the principles of general medicine into a holistic and comprehensive approach to the care of the patient.

### **TEACHING METHODS AND HOURS:**

<b>Professional Year</b>	<b>Duration (months)</b>	<b>Teaching hours (hours)</b>	<b>Tutorials/ seminars/ Integrated Teaching (hours)</b>	<b>Self-Directed Learning (hours)</b>	<b>Total (hours)</b>
Second Professional MBBS	12	25	-	-	25
Third Professional Part I	13	25	35	5	65
Third Professional Part II	13	70	125	15	210

25% of allotted time of third professional shall be utilized for integrated learning with pre- and para- clinical subjects and shall be assessed during the clinical subjects examination. This allotted time will be utilized as integrated teaching by para-clinical subjects with clinical subjects (as Clinical Pathology, Clinical Pharmacology and Clinical Microbiology).

## CLINICAL POSTINGS:

Subject	Period of Training in weeks			Total
	Second Professional MBBS	Third Professional Part I	Third Professional Part II	
General Medicine	4	4	8+4	20

The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday). The clinical postings in the third professional part I and part II shall be 18 hours per week (3 hrs per day from Monday to Saturday). This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I). Hours from clinical postings can also be used for AETCOM modules. At least 3 hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories. Hours may be distributed weekly or as a block in each posting based on institutional logistics. There should be end of posting examination in each phase of instruction.

### Scheme of Internal assessment:

There shall be at least 2 internal assessments during second professional, 2 internal assessments during third professional part I and 2 internal assessments during third professional II. Last internal assessment in third professional should be pre-final examination. Learners must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing University examination. Internal assessment marks will reflect as separate head of passing at the summative examination.

## UNIVERSITY EXAMINATION:

Third professional part II	Marks	Pass Criteria
Theory – Paper I	100	Mandatory 50% marks separately in theory and practical (clinical + viva)
Theory – Paper II	100	
Practical/orals	200	
<b>Total</b>	<b>400</b>	



The discipline of Psychiatry and Dermatology, Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis will constitute 25% of the total theory marks in General Medicine incorporated as a separate section in paper II of General Medicine.

**DISTRIBUTION OF TOPICS IN PAPER I & II IN  
UNIVERSITY EXAMINATION:**

<b>Paper</b>	<b>Topics</b>
<b>I</b>	Anaemia, Rheumatologic problems, Envenomation, Poisoning, Diabetes Mellitus, Thyroid dysfunction, Obesity, Acute Kidney Injury and Chronic Renal Failure, Liver Disease, GI bleeding, Diarrheal disorder, Mineral, Fluid, Electrolyte and Acid base Disorder
<b>II</b>	Heart Failure, Acute Myocardial Infarction, Hypertension, Headache, Cerebrovascular accident, Movement Disorders, Fever and Febrile syndromes, HIV, Pneumonia Common Malignancies, Geriatrics, Miscellaneous Infections, The role of the physician in the community, Dermatology, Psychiatry Respiratory Medicine

### **Text Books(latest edition) Recommended:**

- a. Davidson's Principles and practice of Medicine.
- b. Kumar&Clark's Clinical Medicine.
- c. Parasitology in relation to Clinical Medicine by KD Chatterjee.

### **Clinical Methods Books recommended:**

- 1) Hutchison's Clinical Method.
- 2) Macleod's Clinical Examination
- 3) Clinical examination by Nicholas J Talley
- 4) Chamberlain's Clinical Methods.

### **Reference Books:**

- 1) Harrison's Principles of Medicine
- 2) Cecil's Test book of Medicine
- 3) CURRENT Medical Diagnosis and Treatment
- 3) Oxford text book of Medicine
- 4) Brain's Neurology, Cardiology 'HURST', API Text Book of Medicine.

**GENERAL MEDICINE SYLLABUS FOR 2ND MBBS - CBME BATCH  
(2019-2020 ADMITTED BATCH)**

Number	COMPETENCY	Domain	Level	Core	Teaching-Learning	Integrati on
	The student should be able to	K/S/A/C	K/KH/S H/P	(Y/N)	Methods	
<b>Topic : Heart Failure</b>		<b>Number of Competencies : 30</b>				
		<b>Number of procedures that require certification : (01)</b>				
IM 1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and courses of common causes of heart disease including: rheumatic/valvular, ischemic, hypertrophic, inflammatory	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM 1.2	Describe and discuss the genetic basis of some forms of heart failure	K	KH	N	Lecture, Small group discussion	Pathology, Physiology
IM 1.3	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	Pathology, Physiology, Microbiology
IM 1.4	Stage heart failure	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM 1.5	Describe ,discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM 1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM 1.7	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias,	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology

	anemia, thyrotoxicosis, dietary factors drugs etc.				n	
IM 1.8	Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM 1.9	Describe and discuss the clinical presentation and features diagnosis, recognition and management of acute rheumatic fever	K	KH	Y	Lecture, Small group discussion	Pathology, Microbiology
IM 1.19	Enumerate the indications for and describe the findings of heart failure with the following conditions including : 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram	S	KH	N	Lecture, Small group discussion, Bedside clinic	Radiodiagnosis
IM 1.20	Determine the severity of valvular heart disease based on the clinical and laboratory and imaging features and determine the level of intervention required including surgery	C	SH	Y	Small group discussion, Lecture, Bedside clinic	
IM 1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy	K	KH/SH	Y	Bedside clinic, Small group discussion, Lecture	
IM 1.23	Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations	S/C	SH	Y	Lecture, Small group discussion	
IM 1.24	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	

IM 1.25	Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation	K	KH	Y	Lecture, Small group discussion, Bedside clinic	
<b>Topic : Acute Myocardial Infarction/IHD                      Number of Competencies : (24)</b> <b>Number of procedures that require certification : (02)</b>						
IM 2.1	Discuss the describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology, Community Medicine
IM 2.2	Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM 2.3	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis	K	KH	Y	Lecture, Small group discussion	Physiology, Biochemistry
IM 2.4	Discuss and the describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM 2.5	Define the various acute coronary syndromes and describe their avolution, natural history and outcomes	K	KH	Y	Lecture, Small group discussion	Pathology
IM 2.13	Discuss and enumerate the indications for and findings on echocardiogram, stress testing and coronary angiogram	K	KH	Y	Lecture, Small group discussion	
IM 2.14	Discuss and describe the indications for admission to a coronary care unit and supportive therapy for a patient with acute coronary syndrome	K	KH	Y	Lecture, Small group discussion	
IM 2.15	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	Pharmacology
IM 2.16	Discuss and describe the indications for acute thrombolysis, PTCA and CABG	K	KH	Y	Lecture, Small group discussion	
IM2.17	Discuss and describe the indications and methods of cardiac rehabilitation	K	KH	Y	Lecture, Small group discussion	



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	Pharmacology, Biochemistry
IM2.19	Discuss and describe the pathogenesis, recognition and management of complications of acute coronary syndromes including arrhythmias, shock, LV dysfunction, papillary muscle rupture and pericarditis	K	KH	Y	Lecture, Small group discussion	
IM2.20	Discuss and describe the assessment and relief of pain in acute coronary syndromes	K	KH	Y	Lecture, Small group discussion	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	Pharmacology
<b>Topic : Pneumonia</b>						
<b>Number of Competencies : (19)</b>				<b>Number of procedures that require certification : (NIL)</b>		
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture, Small group discussion	Human Anatomy, Pathology, Microbiology
IM3.2	Discuss and describe the aetiologies of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host	K	K	Y	Lecture, Small group discussion	Microbiology
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	K	Y	Lecture, Small group discussion	Pathology, Microbiology
IM3.15	Describe and enumerate the indications for hospitalisation in patients with pneumonia	K	K	Y	Lecture, Small group discussion	
IM3.16	Describe and enumerate the indications for isolation and barrier nursing in patients with pneumonia	K	K	Y	Lecture, Small group discussion	
IM3.17	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and indications for ventilation	K	K	Y	Lecture, Small group discussion	
IM3.19	Discuss, describe, enumerate the indications and communicate to patients on pneumococcal and influenza vaccines	S/C	K	Y	Lecture, Small group discussion	Microbiology
<b>Topic : Fever and febrile syndromes</b>						
<b>Number of competencies : (26)</b>				<b>Number of procedures that require certification : (NIL)</b>		
IM4.1	Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile response	K	K	Y	Lecture, Small group discussion	Microbiology
IM4.2	Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia,	K	K	Y	Lecture, Small group discussion	Microbiology

HIV and travel						
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g.Dengue, Chikungunya, Typhus)	K	K	Y	Lecture, Small group discussion	Microbiology, Community Medicine
IM4.4	Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever	K	KH	Y	Lecture, Small group discussion	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	Pathology, Microbiology
IM4.6	Discuss and describe the pathophysiology and manifestations of malaria	K	KH	Y	Lecture, Small group discussion	Microbiology
IM4.7	Discuss and describe the pathophysiology and manifestations of the sepsis syndrome	K	K	Y	Lecture, Small group discussion	
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	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	Pathology
IM4.18	Enumerate the indications for use of imaging in the diagnosis of febrile syndromes	K	KH	N	Lecture, Small group discussion	
IM4.22	Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance	K	KH	Y	Lecture, Small group discussion	Pharmacology
<b>Topic : Liver Disease</b>		<b>Number of Competencies : (18)</b>			<b>Number of</b>	
<b>Procedures that require certification : (NIL)</b>						
IM5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia	K	K	Y	Lecture, Small group discussion	Pathology, Physiology
IM5.2	Describe and discuss the aetiology and pathophysiology of liver injury	K	K	Y	Lecture, Small group discussion	Pathology, Physiology
IM5.3	Describe and discuss the pathologic changes in various forms of liver disease	K	K	Y	Lecture, Small group discussion	Pathology
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	K	K	Y	Lecture, Small group discussion	Pathology, Microbiology

IM5.5	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease	K	K	Y	Lecture, Small group discussion	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	Pathology

<b>BED SIDE CLINICS FOR 2ND MBBS (2019 - 2020 ADMITTED BATCH)</b>			
<b>Duration 4 Weeks</b>			<b>Vertical Integration</b>
<b>Week I</b>	<b>IM 1.10</b>	Elicit document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including: presenting complaints, precipitating and exacerbating factors, risk factors exercise tolerance, changes in sleep patterns, features suggestive of infective endocarditis	
	<b>IM 2.6</b>	Elicit document and present an appropriate history that includes onset evolution, presentation risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes	
	<b>IM 2.9</b>	Distinguish and differentiate between stable and unstable angina and AMI based on the clinical presentation	
	<b>IM 3.4</b>	Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk	
	<b>IM 4.9</b>	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	Microbiology
	<b>IM 5.9</b>	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history	
<b>Week II</b>	<b>IM 7.11</b>	Elicit document and present a medical history that will differentiate the aetiologies of disease	
	<b>IM 8.9</b>	Elicit document and present a medical history that includes: duration and levels, symptoms, comorbidities, lifestyle, risk factors, family history, psychosocial and environmental factors, dietary assessment, previous and concomitant therapy	
	<b>IM 9.3</b>	Elicit document and present a medical history that includes symptoms, risk factors including GI bleeding, prior history, medications, menstrual history, and family history	

	<b>IM 11.7</b>	Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease	
	<b>IM 12.5</b>	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity	
	<b>IM 13.7</b>	Elicit document and present a history that will help establish the aetiology of cancer and includes the appropriate risk factors, duration and evolution	
	<b>IM 14.6</b>	Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history, clues for secondary causes and motivation to lose weight	
	<b>IM 15.4</b>	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors	
<b>Week III</b>	<b>IM 16.4</b>	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses	Microbiology, Pathology
	<b>IM 17.2</b>	Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches	
	<b>IM 18.3</b>	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	Pathology
	<b>IM 25.4</b>	Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel	Community Medicine
	<b>IM 26.20</b>	Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgemental and empathetic manner	
	<b>IM 26.21</b>	Demonstrate respect to patient privacy	



	<b>IM 1.11</b>	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation	
	<b>IM 1.12</b>	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure	
	<b>IM 1.13</b>	Measure the blood pressure accurately, recognise and discuss alterations in blood pressure in valvular heart disease and other causes of heart failure and cardiac tamponade	
<b>Week IV</b>	<b>IM 4.10</b>	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)	
	<b>IM 9.4</b>	Perform a systematic examination that includes : general examination for pallor, oral examination, DOAP session of hyper dynamic circulation, lymph node and splenic examination	
	<b>IM 11.8</b>	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)	
	<b>IM 12.6</b>	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings	
	<b>IM 12.7</b>	Demonstrate the correct technique to palpate the thyroid	
	<b>IM 14.7</b>	Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities	
	<b>IM 15.5</b>	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal	

		examination	
<b>IM 16.5</b>		Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination	
<b>IM 25.5</b>		Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin, mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)	

**GENERAL MEDICINE SYLLABUS FOR FINAL MBBS PART - I  
CBME BATCH (2019-2020 ADMITTED BATCH)**

Number	COMPETENCY	Domain	Level	Core	Teaching-Learning	Integration
	The student should be able to	K/S/A/C	K/KH/SH/P	(Y/N)	Methods	
<b>Topic : Liver Disease</b>		<b>Number of Competencies : (18)</b>		<b>Number of Procedures that require certification : (NIL)</b>		
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	K	Y	Lecture, Small group discussion	Pathology, Pharmacology
IM5.8	Describe and discuss the pathophysiology, clinical evolution and complications cholelithiasis and cholecystitis	K	K	Y	Lecture, Small group discussion	General Surgery
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 discussion	Pharmacology
IM5.17	Enumerate the indications, precautions and counsel patients on vaccination for hepatitis	K/C	SH	Y	Written, Small group discussion	Microbiology
IM5.18	Enumerate the indications for hepatic transplantation	K	K	Y	Written, Small group discussion	
<b>Topic : HIV</b>		<b>Number of Competencies : (23)</b>		<b>Number of Procedures that require certification :</b>		
<b>(NIL)</b>						
IM6.1	Describe and discuss the symptoms and signs of acute HIV seroconversion	K	KH	Y	Lecture, Small group discussion	Microbiology
IM6.2	Define and classify HIV AIDS based on the CDC criteria	K	KH	Y	Lecture, Small group discussion	Microbiology

IM6.3	Describe and discuss the relationship between CDC count and the risk of opportunistic infections	K	KH	Y	Lecture, Small group discussion	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	Microbiology	
IM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies	K	KH	Y	Lecture, Small group discussion	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	Pathology, Microbiology	
IM6.11	Enumerate the indications and describe the findings for CT of the chest and brain and MRI	K	K	N	Small group discussion, Lecture, Bedside clinic	Radiodiagnosis	
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	Pharmacology, Microbiology	
IM6.16	Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions	K	K	Y	Lecture, Small group discussion	Microbiology, Pharmacology	
IM6.17	Discuss and describe the principles and regimens used in post exposure prophylaxis	K	K	Y	Lecture, Small group discussion	Microbiology, Pharmacology	
IM6.18	Enumerate the indications and discuss prophylactic drugs used to prevent HIV related opportunistic infections	K/C	K	Y	Lecture, Small group discussion	Pathology, Microbiology	
IM6.23	Demonstrate a non-judgemental attitude to patients with HIV and to their lifestyles	A	SH	Y	Small group discussion	AETCOM	
<b>Topic : RHEUMATIC PROBLEMS</b>		<b>Number of Competencies : (27)</b>		<b>Number of Procedures that require certification :</b>			
		<b>(NIL)</b>					

IM7.1	Describe the pathophysiology of autoimmune disease	K	KH	Y	Lecture, Small group discussion	Pathology
IM7.2	Describe the genetic basis of autoimmune disease	K	KH	N	Lecture, Small group discussion	Pathology
IM7.3	Classify cause of joint pain based on the pathophysiology	K	KH	Y	Lecture, Small group discussion	
IM7.4	Develop a systematic clinical approach to joint pain based on the pathophysiology	K	KH	Y	Lecture, Small group discussion	
IM7.5	Describe and discriminate acute, subacute and chronic causes of joint pain	K	KH	Y	Lecture, Small group discussion	
IM7.6	Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain	K	KH	Y	Lecture, Small group discussion	
IM7.7	Discriminate, describe and discuss distinguishing articular from periarticular complaints	K	KH	Y	Lecture, Small group discussion	
IM7.8	Determine the potential causes of joint pain based on the presenting features of joint involvement	K	KH	Y	Lecture, Small group discussion	
IM7.9	Describe the common signs and symptoms of articular and periarticular diseases	K	KH	Y	Lecture, Small group discussion	
IM7.10	Describe the systemic manifestations of rheumatologic disease	K	KH	Y	Lecture, Small group discussion	
IM7.16	Enumerate the indications for arthrocentesis	K	K	Y	Small group discussion, Lecture	



IM7.27	Determine the need for specialist consultation	K	K	Y	Small group discussion, Lecture	
<b>Topic : HYPERTENSION</b>		<b>Number of Competencies : (20) (NIL)</b>		<b>Number of Procedures that require certification :</b>		
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM8.2	Describe and discuss the pathophysiology of hypertension	K	KH	Y	Lecture, Small group discussion	Pathology, Physiology
IM8.3	Describe and discuss the genetic basis of hypertension	K	KH	N	Lecture, Small group discussion	Pathology
IM8.4	Define and classify hypertension	K	KH	Y	Lecture, Small group discussion	Pathology
IM8.5	Describe and discuss the differences between primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Pathology
IM8.6	Define, describe and discuss and recognise hypertensive urgency and emergency	K	KH	Y	Lecture, Small group discussion	
IM8.7	Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension	K	KH	Y	Lecture, Small group discussion	Pathology
IM8.8	Describe, discuss and identify target organ damage due to hypertension	K	KH	Y	Lecture, Small group discussion	Pathology
IM8.12	Describe the appropriate diagnostic work up based on the presumed aetiology	K	KH	Y	Small group discussion	
IM8.13	Enumerate the indications for and interpret the results of : CBC, Urine routine, BUN, Cr, Electrolytes, Uric acid, ECG	K	KH	Y	Small group discussion	

IM8.14	Develop an appropriate treatment plan for essential hypertension	K	KH	Y	Small group discussion	Pharmacology
IM8.20	Determine the need for specialist consultation	K	KH	Y	Lecture, Small group discussion	
<b>Topic : ANEMIA</b>		<b>Number of Competencies : (21)</b>		<b>Number of Procedures that require certification :</b>		
		<b>(NIL)</b>				
IM9.1	Define, describe and classify anemia based on red blood cell size and reticulocyte count	K	KH	Y	Lecture, Small group discussion	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	Pathology
IM9.7	Describe and discuss the meaning and utility of various components of the hemogram	K	KH	Y	Lecture, Small group discussion	Pathology
IM9.8	Describe and discuss the various tests for iron deficiency	K	KH	Y	Lecture, Small group discussion	Pathology
IM9.11	Describe the indications and interpret the results of a bone marrow aspirations and biopsy	K	KH	Y	Lecture, Small group discussion	Pathology
IM9.12	Describe, develop a diagnostic plan to determine the aetiology of anemia	K	KH	Y	Lecture, Small group discussion	Pathology
IM9.14	Describe the national programs for anemia prevention	K	KH	Y	Lecture, Small group discussion	Pharmacology, Community Medicine
IM9.17	Describe the indications for blood transfusion and the appropriate use of blood components	K	KH	Y	Lecture, Small group discussion	Pathology
IM9.18	Describe the precautions required necessary when performing a blood transfusion	K	KH	Y	Lecture, Small group discussion	

IM9.21	Determine the need for specialist consultation	K	KH	Y	Lecture, Small group discussion	Written
<b>Topic : ACUTE KIDNEY INJURY AND CHRONIC RENAL FAILURE Number of Competencies : (31)Number of Procedures that require certification : (NIL)</b>						
IM10.1	Define, describe and differentiate between acute and chronic renal failure	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.2	Classify, describe and differentiate the pathophysiologic causes of acute renal failure	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.3	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.4	Describe the evolution, natural history and treatment of ARF	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.5	Describe and discuss the aetiology of CRF	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.6	Stage Chronic Kidney Disease	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.7	Describe and discuss the pathophysiology and clinical findings of uraemia	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.8	Classify, describe and discuss the significance of proteinuria in CKD	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.9	Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.10	Describe and discuss the association between CKD glycemia and hypertension	K	KH	Y	Lecture, Small group discussion	Pathology

IM10.11	Describe and discuss the relationship between CAD risk factors and CKD and in dialysis	K	KH	Y	Lecture, Small group discussion	Pathology
IM10.14	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	K	KH	Y	DOAP session, Small group discussion	
IM10.15	Describe the appropriate diagnostic work up based on the presumed aetiology	K	SH	Y	DOAP session, Small group discussion	
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	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	Pathology
IM10.18	Identify the ECG findings in hyperkalemia	S	SH	Y	DOAP session, Small group discussion	
IM10.19	Enumerate the indications and describe the findings in renal ultrasound	K	KH	N	Lecture, Small group discussion	Radiodiagnosis
IM10.20	Describe and discuss the indications to perform arterial blood gas analysis: interpret the data	S	P	Y	DOAP session	
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	Pharmacology
IM10.26	Describe and discuss supportive therapy in CKD including diet, anti	K	KH	Y		

	hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and secondary hyperparathyroidism				Lecture, Small group discussion	
IM10.27	Describe and discuss the indications for renal dialysis	C/A	KH	Y	Lecture, Small group discussion	
IM10.28	Describe and discuss the indications for renal replacement therapy	C	KH	Y	Lecture, Small group discussion	
IM10.29	Describe discuss and communicate the ethical and legal issues involved in renal replacement therapy	C/A	KH	Y	Lecture, Small group discussion	
IM10.30	Recognise the impact of CKD on patient's quality of life well being work and family	A	K	Y	Lecture, Small group discussion, Bedside clinic	
IM10.31	Incorporate patient preferences in to the care of CKD	A/C	KH	Y	Lecture, Small group discussion, Bedside clinic	
<b>Topic : DIABETUS MILLETUS</b>						
		<b>Number of Competencies : (24)</b>		<b>Number of Procedures that require certification :</b>		
		<b>(02)</b>				
IM11.1	Define and classify diabetes	K	KH	Y	Lecture, Small group discussion	
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	Pathology
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	Pathology
IM11.4	Describe and discuss the genetic background and the influence of the environment on diabetes	K	KH	N	Lecture, Small group discussion	



IM11.5	Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes	K	KH	Y	Lecture, Small group discussion	Pathology
IM11.6	Describe and discuss the pathogenesis and precipitating factors, recognition and management of diabetic emergencies	K	KH	Y	Lecture, Small group discussion	
IM11.9	Describe and recognise the clinical features of patients who present with a diabetic emergency	K	KH	Y	Small group discussion, Lecture	
IM11.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	K	KH	Y	Small group discussion, Lecture	
IM11.14	Recognise the presentation of hypoglycaemia and outline the principles on its therapy	K	KH	Y	Small Group discussion, Lecture	
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	Pathology, Physiology
IM11.15	Recognise the presentation of diabetic emergencies and outline the principles of therapy	K	KH	Y	Small Group discussion, Lecture	
IM11.16	Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions	K	KH	Y	Small Group discussion, Lecture	Pharmacology
IM11.17	Outline a therapeutic approach to therapy of T2Diabetes based on presentation, severity and complications in a cost effective manner	K	KH	Y	Small Group discussion, Lecture	
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	Pharmacology
IM11.23	Describe the precipitating causes,	K	KH	Y	Lecture,	

	pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of diabetic ketoacidosis				Small group discussion	
IM11.24	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of Hyperosmolar non ketotic state	K	KH	N	Lecture, Small group discussion	
<b>Topic : THYROID DYSFUNCTION</b>		<b>Number of Competencies : (15)</b>		<b>Number of Procedures that require certification :</b>		
<b>(NIL)</b>						
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	Pathology, Physiology
IM12.2	Describe and discuss the genetic basis of some forms of thyroid dysfunction	K	K	N	Lecture, Small group discussion	
IM12.3	Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function	K	K	Y	Lecture, Small group discussion	Pathology, Physiology
IM12.4	Describe and discuss the principles of radio iodine uptake in the diagnosis of thyroid disorders	K	KH	Y	Lecture, Small group discussion	
IM12.12	Describe and discuss the iodisation programs of the government of India	K	KH	Y	Lecture, Bedside clinic	Community Medicine
IM12.13	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs	K	KH	Y	Lecture, Small group discussion	Pharmacology
<b>Topic : COMMON MALIGNANCIES</b>		<b>Number of Competencies : (19)</b>		<b>Number of Procedures that require certification :</b>		
<b>(NIL)</b>						
IM13.1	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India	K	K	Y	Lecture, Small group discussion	Pathology, Biochemistry
IM13.2	Describe the genetic basis of selected cancers	K	K	N	Lecture, Small group discussion	Pathology

IM13.3	Describe the relationship between infection and cancers	K	K	Y	Lecture, Small group discussion	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	Pathology
IM13.5	Describe the common issues encountered in patients at the end of life and principles of management	K	K	N	Lecture, Small group discussion	
IM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer	K	K	N	Lecture, Small group discussion	Pharmacology
<b>Topic : OBESITY</b>						
		<b>Number of Competencies : (15)</b>		<b>Number of Procedures that require certification :</b>		
		<b>(NIL)</b>				
IM14.1	Define and measure obesity as it relates to the Indian population	K	K	Y	Lecture, Small group discussion	
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	Pathology
IM14.3	Describe and discuss the monogenic forms of obesity	K	K	N	Lecture, Small group discussion	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	Pathology, Community Medicine
IM14.5	Describe and discuss the natural history of obesity and its complications	K	K	Y	Lecture, Small group discussion	Pathology
IM14.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity	K	K	Y	Lecture, Small group discussion	Pharmacology

IM14.14	Describe and enumerate the indications and side effects of bariatric surgery	K	K	Y	Lecture, Small group discussion	
IM14.15	Describe and enumerate and educate patients, health care workers and the public on measures to prevent obesity and promote a healthy lifestyle	K	K	Y	Lecture, Small group discussion	
<b>GI BLEEDING</b>		<b>Number of Competencies : (18)</b>		<b>Number of Procedures that require certification : (NIL)</b>		
IM15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding	K	KH	Y	Lecture, Small group discussion	Pathology
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	Pathology
IM15.3	Describe and discuss the physiologic effects of acute blood and volume loss	K	K	Y	Lecture, Small group discussion	Pathology, Physiology
IM15.4	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors	S	SH	Y	Bedside clinic	
IM15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination	S	SH	Y	Bedside clinic, Skills lab	
IM15.6	Distinguish between upper and lower	S	KH	Y	Lecture, Small group discussion	
	gastrointestinal bleeding based on the clinical features					
IM15.10	Enumerate the indications for endoscopy, colonoscopy and other imaging procedures in the investigation of Upper GI bleeding	K	KH	Y	Lecture, Small group discussion	
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	Pathology

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	Pathology
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	Pharmacology
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	Pharmacology, Microbiology
IM15.16	Enumerate the indications for endoscopic interventions and Surgery	K	K	Y	Lecture, Small group discussion	
IM15.17	Determine appropriate level of specialist consultation	S	K	Y	Small group discussion	
<b>Topic : DIARRHEAL DISORDER</b>						
		<b>Number of Competencies : (17)</b>		<b>Number of Procedures that require certification :</b>		
<b>(NIL)</b>						
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	Microbiology
IM16.2	Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance	K	K	Y	Lecture, Small group discussion	
IM16.3	Describe and discuss the chronic effects of diarrhea including malabsorption	K	K	Y	Lecture, Small group discussion	
IM16.6	Distinguish between diarrhea and dysentery based on clinical features	S	KH	Y	Lecture, Small group discussion	
IM16.11	Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea	K	KH	Y	Lecture, Small group discussion	Microbiology
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	Pathology



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	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	Pharmacology, Microbiology
IM16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis	S	SH	Y	Lecture, Small group discussion	Pathology
IM16.16	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy	K	K	Y	Lecture, Small group discussion	Pharmacology
IM16.17	Describe and enumerate the indications for surgery in inflammatory bowel disease	K	K	Y	Lecture, Small group discussion	
<b>Topic : HEADACHE</b>						
		<b>Number of Competencies : (14)</b>			<b>Number of Procedures that require certification :</b>	
<b>(NIL)</b>						
IM17.1	Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache	K	KH	Y	Lecture, Small group discussion	Human Anatomy
IM17.6	Choose and interpret diagnostic testing based on the clinical diagnosis including imaging	S	SH	Y	Lecture, Small group discussion, Bedside clinic	
IM17.10	Enumerate the indications for emergency care admission and immediate supportive care in patients with headache	K	K	Y	Lecture, Small group discussion	
IM17.11	Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine	K	KH	Y	Lecture, Small group discussion	Pharmacology
IM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine	K	KH	Y	Lecture, Small group discussion	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	Pharmacology
<b>Topic : CEREBROVASCULAR ACCIDENT</b>						
		<b>Number of Competencies : (17)</b>		<b>Number of Procedures that require certification : (NIL)</b>		
IM18.1	Describe the functional and the vascular anatomy of the brain	K	KH	Y	Lecture, Small group discussion	Human Anatomy
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	Pathology
IM18.10	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)	S	SH	Y	Lecture, Small group discussion	
IM18.11	Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)	K	KH	Y	Lecture, Small group discussion	
IM18.12	Enumerate the indications for and describe acute therapy of non hemorrhagic stroke including the use of thrombolytic agents	K	KH	Y	Lecture, Small group discussion	
IM18.13	Enumerate the indications for and describe the role of anti platelet agents in non hemorrhagic stroke	K	KH	Y	Lecture, Small group discussion	
IM18.14	Describe the initial management of a hemorrhagic stroke	K	KH	Y	Lecture, Small group discussion	
IM18.15	Enumerate the indications for surgery in a hemorrhagic stroke	K	K	Y	Lecture, Small group discussion	
IM18.16	Enumerate the indications describe and observe the multidisciplinary rehabilitation of patients with a CVA	S	KH	Y	Lecture, Small group discussion	
<b>Topic : MOVEMENT DISORDERS</b>						
		<b>Number of Competencies : (09)</b>		<b>Number of Procedures that require certification :</b>		
<b>(NIL)</b>						

IM19.1	Describe the functional anatomy of the locomotor system of the brain	K	KH	Y	Lecture, Small group discussion	Human Anatomy, Physiology
IM19.2	Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors	K	KH	Y	Lecture, Small group discussion	
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	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	Pharmacology
<b>Topic : ENVENOMATION</b>						
		<b>Number of Competencies : (09)</b>		<b>Number of Procedures that require certification :</b>		
		<b>(NIL)</b>				
IM20.1	Enumerate the local poisonous snakes	K	KH	Y	Lecture, Small group discussion	Forensic Medicine, Pharmacology
	and describe the distinguishing marks of each					
IM20.3	Describe the initial approach to the stabilisation of the patient who presents with snake bite	K	KH	Y	Lecture, Small group discussion	Forensic Medicine
IM20.6	Choose and interpret the appropriate diagnostic testing in patients with snake bites	S	SH	Y	Small group discussion	
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	Pharmacology
IM20.8	Describe the diagnosis, initial approach stabilisation and therapy of scorpion envenomation	K	KH	N	Lecture, Small group discussion	Pharmacology
IM20.9	Describe the diagnosis initial approach stabilisation and therapy of bee sting allergy	K	KH	N	Lecture, Small group discussion	Pharmacology
<b>Topic : POISONING</b>						
		<b>Number of Competencies : (08)</b>		<b>Number of Procedures that require certification :</b>		
		<b>(NIL)</b>				

IM21.1	Describe the initial approach to the stabilisation of the patient who presents with snake bite	K	KH	Y	Lecture, Small group discussion	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	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	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	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	Forensic Medicine, Pharmacology

<b>BED SIDE CLINICS FOR FINAL MBBS -PART I (2019 - 2020 ADMITTED BATCH)</b>			
<b>Duration 4 Weeks</b>			<b>Vertical Integration</b>
<b>Week I</b>	<b>IM 1.14</b>	Demonstrate and measure jugular venous distension	
	<b>IM 1.15</b>	Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations	
	<b>IM 1.28</b>	Enumerate the causes of adult presentations of congenital heart disease and describe the distinguishing features between cyanotic and acyanotic heart disease	
	<b>IM 1.29</b>	Elicit document and present an appropriate history, demonstrate correctly general examination, relevant clinical findings and formulate document and present a management plan for an adult patient presenting with a common form of congenital heart disease	
	<b>IM 2.7</b>	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation	
	<b>IM 3.5</b>	Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of disease	
<b>Week II</b>	<b>IM 5.10</b>	Perform a systematic examination that establishes the diagnosis and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of portosystemic hypertension and hepatic encephalopathy	
	<b>IM 5.14</b>	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	Radiodiagnosis
	<b>IM 5.15</b>	Assist in the performance and interpret the findings of an ascitic fluid analysis	
	<b>IM 7.12</b>	Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease	
	<b>IM 7.19</b>	Develop an appropriate treatment plan for patients with rheumatologic diseases	
	<b>IM 7.20</b>	Select, prescribe and communicate appropriate medications for relief of joint pain	Pharmacology
<b>Week III</b>	<b>IM 7.21</b>	Select, prescribe and communicate preventive therapy for crystalline arthropathies	Pharmacology
	<b>IM 7.22</b>	Select, prescribe and communicate treatment option for systemic rheumatologic conditions	Pharmacology



	<b>IM 7.23</b>	Describe the basis for biologic and disease modifying therapy in rheumatologic diseases	Pharmacology
	<b>IM 8.10</b>	Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart	
	<b>IM 8.16</b>	Develop and communicate to the patient lifestyle modification including weight reduction, moderation of alcohol intake, physical activity and sodium intake	
	<b>IM 8.18</b>	Incorporate patient preferences in the management of HTN	
<b>Week IV</b>	<b>IM 8.19</b>	Demonstrate understanding of the impact of Hypertension on quality of life, well being, work and family	
	<b>IM 10.13</b>	Perform a systematic examination that establishes the diagnosis and severity including determination of volume status, presence of edema and heart failure, features of uraemia and associated systemic disease	
	<b>IM 12.11</b>	Interpret thyroid function tests in hypo and hyperthyroidism	
	<b>IM 13.8</b>	Perform and demonstrate a physical examination that includes an appropriate general and local examination that excludes the diagnosis, extent spread and complications of cancer	
	<b>IM 14.10</b>	Describe the indications and interpret the results of tests for secondary causes of obesity	
	<b>IM 14.11</b>	Communicate and counsel patient on behavioural, dietary and lifestyle modifications	
	<b>IM 14.12</b>	Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgemental way	

**GENERAL MEDICINE SYLLABUS FOR FINAL MBBS PART - II  
CBME BATCH (2019-2020 ADMITTED BATCH)**

Number	COMPETENCY	Domain	Level	Core	Teaching-Learning	Integration
	The student should be able to	K/S/A/C	K/KH/SH/P	(Y/N)	Methods	
<b>Topic : Mineral, Fluid Electrolyte and Acid Based Disorder    Number of Competencies : (13)    Number of Procedures that require certification : (NIL)</b>						
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	Pathology, Physiology
IM22.2	Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Pathology
IM22.3	Describe the approach to the management of hypercalcemia	K	KH	N	Lecture, Small group discussion	Pharmacology
IM22.4	Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome	K	KH	N	Lecture, Small group discussion	Pathology
IM22.5	Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management of the patient with hyponatremia	K	KH	Y	Lecture, Small group discussion	
IM22.6	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyponatremia	K	KH	Y	Lecture, Small group discussion	
IM22.7	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hypokalemia	K	KH	Y	Lecture, Small group discussion	
IM22.8	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyperkalemia	K	KH	Y	Lecture, Small group discussion	

IM22.9	Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis	K	KH	N	Lecture, Small group discussion	Physiology
IM22.10	Enumerate the causes of describe the clinical and laboratory features of metabolic alkalosis	K	KH	N	Lecture, Small group discussion	Physiology
IM22.11	Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis	K	KH	N	Lecture, Small group discussion	Physiology
IM22.12	Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis	K	KH	N	Lecture, Small group discussion	Physiology
IM22.13	Identify the underlying acid based disorder based on an ABG report and clinical situation	S	KH	N	Lecture, Small group discussion	Physiology
<b>Topic : Nutritional and Vitamin Deficiencies</b>		<b>Number of Competencies : (05)</b>		<b>Number of Procedures that require certification : (NIL)</b>		
IM23.1	Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses	K	KH	Y	Lecture, Small group discussion	Physiology, Biochemistry
IM23.2	Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital	K	KH	Y	Lecture, Small group discussion	Physiology, Biochemistry
IM23.3	Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies	K	KH	Y	Lecture, Small group discussion	Physiology, Biochemistry
IM23.4	Enumerate the indications for enteral and parenteral nutrition in critically ill patients	K	KH	Y	Lecture, Small group discussion	Physiology, Biochemistry
<b>Topic : Geriatrics</b>		<b>Number of Competencies : (22) (NIL)</b>		<b>Number of Procedures that require certification :</b>		
IM24.1	Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly	K	KH	Y	Lecture, Small group discussion	

IM24.3	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of acute confusional states	K	KH	Y	Lecture, Small group discussion	
IM24.4	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vascular events in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.5	Describe and discuss the aetiopathogenesis clinical presentation identification, functional changes, acute care, stabilization, management and rehabilitation of depression in the elderly	K	KH	Y	Lecture Small group discussion	
IM24.6	Describe and discuss the aetiopathogenesis causes, clinical presentation, difference in discussion presentation identification, functional changes, acute care, stabilization, management and rehabilitation of dementia in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.7	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the elderly	K	KH	N	Lecture, Small group discussion	
IM24.8	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of osteoporosis in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.9	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of CVA in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.10	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.11	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery	K	KH	Y	Lecture, Small group discussion	
IM24.12	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of degenerative joint disease	K	KH	Y	Lecture, Small group discussion	
IM24.13	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly	K	KH	Y	Lecture, Small group discussion	

IM24.14	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of common fractures in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.15	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.16	Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.17	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.18	Describe the impact of the demographic changes in ageing on the population	K	KH	Y	Lecture, Small group discussion	Community Medicine
IM24.19	Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on health.	K	KH	Y	Lecture, Small group discussion	
IM24.20	Enumerate and describe social interventions in the care of elderly including domiciliary discussion services, rehabilitation facilities, old age homes and state interventions	K	KH	Y	Lecture, Small group discussion	
IM24.21	Enumerate and describe ethical issues in the care of the elderly	K	KH	Y	Lecture, Small group discussion	
IM24.22	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly	K	KH	Y	Lecture, Small group discussion	Physiology, Biochemistry
<b>Topic : Miscellaneous infections</b>		<b>Number of Competencies : (13)</b>		<b>Number of Procedures that require certification : (NIL)</b>		
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis, Rabies) and non-febrile infectious disease (e.g. Tetanus)	K	K	Y	Lecture, Small group discussion	Microbiology, Community Medicine
IM25.2	Discuss and describe the common causes, pathophysiology and manifestations of these diseases	K	K	Y	Lecture, Small group discussion	Microbiology, Community Medicine

IM25.3	Describe and discuss the pathophysiology and manifestations of these diseases	K	KH	Y	Lecture, Small group discussion	Microbiology
IM25.8	Enumerate the indications for use of newer techniques in the diagnosis of these infections	K	KH	N	Lecture, Small group discussion	
<b>Topic : The role of the Physician in the Community                      Number of Competencies : (49)                      Number of Procedures that require certification : (NIL)</b>						
IM26.1	Enumerate and describe professional qualities and roles of a physician	K	KH	Y	Small group discussion	
IM26.2	Describe and discuss the commitment to lifelong learning as an important part of physician growth	K	KH	Y	Small group discussion	
IM26.3	Describe and discuss the role of non maleficence as a guiding principle in patient care	K	KH	Y	Small group discussion	
IM26.4	Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care	K	KH	Y	Small group discussion	
IM26.5	Describe and discuss the role of beneficence of a guiding principle in patient care	K	KH	Y	Small group discussion	
IM26.6	Describe and discuss the role of a physician in health care system	K	KH	Y	Small group discussion	
IM26.7	Describe and discuss the role of justice as a guiding principle in patient care	K	KH	Y	Small group discussion	
IM26.8	Identify discuss medicolegal, socioeconomic and ethical issues as it pertains to organ donation	K	KH	Y	Small group discussion	
IM26.9	Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care	K	KH	Y	Small group discussion	
IM26.10	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care	K	KH	Y	Small group discussion	
IM26.11	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to patient autonomy, patient rights and shared responsibility in health care	K	KH	Y	Small group discussion	



IM26.12	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in health care including advanced directives and surrogate decision making	K	KH	Y	Small group discussion	
IM26.13	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to decision making in emergency care including situations where patients do not have the capability or capacity to give consent	K	KH	Y	Small group discussion	
IM26.14	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects	K	KH	Y	Small group discussion	
IM26.15	Identify, discuss and defend, medicolegal, socio-cultural and ethical issues as they pertain to consent for surgical procedures	K	KH	Y	Small group discussion	
IM26.16	Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)	K	KH	Y	Small group discussion	
IM26.17	Identify, discuss physician's role and responsibility to society and the community that she/ he serves	K	KH	Y	Small group discussion	
IM26.18	Identify, discuss and defend medicolegal, socio-cultural, professional and ethical issues in physician- industry relationships	K	KH	Y	Small group discussion	
IM26.23	Demonstrate a commitment to continued learning	S	SH	Y	Small group discussion	
IM26.26	Demonstrate ability to maintain required documentation in health care (including correct use of medical records)	S	SH	Y	Small group discussion	
IM26.27	Demonstrate personal grooming that is adequate and appropriate for health care responsibilities	S	SH	Y	Small group discussion	
IM26.28	Demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning	S	SH	Y	Small group discussion	
IM26.32	Demonstrate appropriate respect to colleagues in the profession	S	SH	N	Small group discussion	
IM26.33	Demonstrate an understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors	S	SH	N	Small group discussion	
IM26.34	Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts	S	SH	Y	Small group discussion	
IM26.36	Demonstrate ability to balance personal and professional priorities	S	SH	N	Small group discussion	

IM26.37	Demonstrate ability to manage time appropriately	S	SH	Y	Small group discussion	
IM26.38	Demonstrate ability to form and function in appropriate professional networks	S	SH	N	Small group discussion	
IM26.39	Demonstrate ability to pursue and seek career advancement	S	SH	N	Small group discussion	
IM26.40	Demonstrate ability to follow risk management and medical error reduction practices where appropriate	S	SH	N	Small group discussion	
IM26.41	Demonstrate ability to work in a mentoring relationship with junior colleagues	S	SH	N	Small group discussion	
IM26.42	Demonstrate commitment to learning and scholarship	S	SH	N	Small group discussion	
IM26.43	Identify, discuss and defend medicolegal, sociocultural, economic and ethical issues as they pertain to in vitro fertilisation donor insemination and surrogate motherhood	K	KH	N	Small group discussion	Obstetrics & Gynaecology
IM26.44	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to medical negligence	K	KH	N	Small group discussion	
IM26.45	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues pertaining to malpractice	K	KH	N	Small group discussion	
IM26.46	Identify, discuss and defend medicolegal, socio-cultural professional and ethical issues in dealing with impaired physicians	K	KH	N	Small group discussion	
IM26.47	Identify, discuss and defend medicolegal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support	K	KH	Y	Small group discussion	
IM26.48	Demonstrate altruism	S	SH	Y	Small group discussion	

<b>BED SIDE CLINICS FOR FINAL MBBS -PART II (2019 - 2020 ADMITTED BATCH)</b>			
<b>Duration 8 + 4 Weeks</b>			<b>Vertical Integration</b>
<b>HEART FAILURE</b>			
<b>Week - 1</b>	<b>IM 1.16</b>	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis	
	<b>IM 1.17</b>	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures	
	<b>IM 1.18</b>	Perform and interpret a 12 lead ECG	
	<b>IM 1.22</b>	Assist and demonstrate the proper technique in collecting specimen for blood culture	Microbiology
	<b>IM 1.26</b>	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology	
	<b>IM 1.27</b>	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease	Microbiology, Pharmacology
	<b>IM 1.30</b>	Administer an intramuscular injection with an appropriate explanation to the patient	Pharmacology
<b>ACUTE MYOCARDIAL INFARCTION/IHC (ACUTE MI)</b>			
<b>Week - 2</b>	<b>IM 2.8</b>	Generate document and present a differential diagnosis based on the clinical presentation and prioritise based on "cannot miss", most likely diagnosis and severity	
	<b>IM 2.10</b>	Order, perform and interpret an ECG	
	<b>IM 2.11</b>	Order and interpret a Chest X-ray and markers of acute myocardial infarction	
	<b>IM 2.12</b>	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context	Biochemistry
	<b>IM 2.21</b>	Observe and participate in a controlled environment an ACLS program	
	<b>IM 2.22</b>	Perform and demonstrate in a mannequin BLS	
	<b>IM 2.24</b>	Counsel and communicate to patients with empathy lifestyle changes in atherosclerosis / post coronary syndromes	AETCOM
<b>HYPERTENSION</b>			
<b>Week - 3</b>	<b>IM 8.11</b>	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	
	<b>IM 8.15</b>	Recognise, prioritise and manage hypertensive emergencies	Pharmacology
	<b>IM 8.17</b>	Perform and interpret a 12 lead ECG	
<b>ANEMIA</b>			
<b>Week - 4</b>	<b>IM 9.5</b>	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	Pathology
	<b>IM 9.6</b>	Describe the appropriate diagnostic work up based on the presumed aetiology	Pathology
	<b>IM 9.9</b>	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate	Pathology
	<b>IM 9.10</b>	Describe, perform and interpret a peripheral smear and stool occult blood	Pathology
	<b>IM 9.13</b>	Prescribe replacement therapy with iron, B12, folate	Pharmacology

	<b>IM 9.15</b>	Communicate the diagnosis and the treatment appropriately to patients	
	<b>IM 9.16</b>	Incorporate patient preferences in the management of anemia	
	<b>IM 9.19</b>	Assist in a blood transfusion	
	<b>IM 9.20</b>	Communicate and counsel patients with methods to prevent nutritional anemia	
<b>PNEUMONIA</b>			
Week - 5	<b>IM 3.6</b>	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation	
	<b>IM 3.7</b>	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	Radiodiagnosis Microbiology
	<b>IM 3.8</b>	Demonstrate in a mannequin and interpret results of an arterial blood gas examination	
	<b>IM 3.9</b>	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration	
	<b>IM 3.10</b>	Demonstrate the correct technique in a mannequin and interpret results of a blood culture	Microbiology
	<b>IM 3.11</b>	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing	Radiodiagnosis Microbiology
	<b>IM 3.12</b>	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	Pharmacology Microbiology
	<b>IM 3.13</b>	Select, describe and prescribe based on culture and sensitivity appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum.	Pharmacology Microbiology
	<b>IM 3.14</b>	Perform and interpret a sputum gram stain and AFB	Microbiology
	<b>IM 3.18</b>	Communicate and counsel patient on family on the diagnosis and therapy of pneumonia	
<b>LIVER DISEASE</b>			
WEEK - 6	<b>IM 5.11</b>	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom	
	<b>IM 5.12</b>	Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases.	Pathology
	<b>IM 5.13</b>	Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease	Radiodiagnosis
<b>GI BLEEDING</b>			
WEEK - 6	<b>IM 15.7</b>	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent	
	<b>IM 15.8</b>	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis	
	<b>IM 15.9</b>	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.	Pathology
	<b>IM 15.13</b>	Observe cross matching and blood / blood component transfusion	Pathology
	<b>IM 15.18</b>	Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options	

<b>DIARRHEAL DISORDER</b>			
<b>WEEK - 6</b>	<b>IM16.7</b>	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis	
	<b>IM16.8</b>	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination	Microbiology, Pathology
	<b>IM16.9</b>	Identify common parasitic causes of diarrhea under the microscope in a stool specimen	Microbiology
	<b>IM16.10</b>	Identify vibrio cholera in a hanging drop specimen	Microbiology
<b>HEADACHE</b>			
<b>WEEK - 7</b>	<b>IM 17.3</b>	Classify migraine and describe the distinguishing features between classical and non classical forms of migraine	
	<b>IM 17.4</b>	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis	
	<b>IM 17.5</b>	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation	
	<b>IM 17.7</b>	Enumerate the indications and describe the findings in the CSF in patients with meningitis	Microbiology Pathology
	<b>IM 17.8</b>	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	Microbiology Pathology
	<b>IM 17.9</b>	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	Microbiology Pathology
	<b>IM 17.14</b>	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy	Pharmacology
<b>CEREBROVASCULAR ACCIDENT (CVA)</b>			
<b>WEEK - 7</b>	<b>IM 18.4</b>	Identify the nature of the cerebrovascular accident based on the temporal evolution and resolution of the illness	
	<b>IM 18.5</b>	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history	
	<b>IM 18.6</b>	Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion	Physiology
	<b>IM 18.7</b>	Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech	Physiology
	<b>IM 18.8</b>	Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in CNS disease	Physiology
	<b>IM 18.9</b>	Choose and interpret the appropriate diagnostic and imaging test that will delineate the anatomy and underlying cause of the lesion	Radiodiagnosis
	<b>IM 18.17</b>	Counsel patient and family about the diagnosis and therapy in an empathetic manner	
<b>MOVEMENT DISORDERS</b>			
<b>WEEK - 7</b>	<b>IM 19.3</b>	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the movement disorders	

	<b>IM 19.4</b>	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales	
	<b>IM 19.5</b>	Generate document and present a differential diagnosis and prioritise based on the history and physical examination	
	<b>IM 19.6</b>	Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings	
	<b>IM 19.7</b>	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders	Radiodiagnosis
<b>FEVER AND FEBRILE SYNDROMES</b>			
<b>WEEK - 8</b>	<b>IM 4.11</b>	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes	
	<b>IM 4.12</b>	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	Pathology Microbiology
	<b>IM 4.13</b>	Perform and interpret a sputum gram stain	Microbiology
	<b>IM 4.14</b>	Perform and interpret a sputum AFB	Microbiology
	<b>IM 4.15</b>	Perform and interpret a malarial smear	Microbiology
	<b>IM 4.19</b>	Assist in the collection of blood and wound cultures	Microbiology
	<b>IM 4.20</b>	Interpret a PPD (Mantoux)	Microbiology
	<b>IM 4.21</b>	Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner	
	<b>IM 4.24</b>	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis	
	<b>IM 4.25</b>	Communicate to the patient and family the diagnosis and treatment	AETCOM
<b>IM 4.26</b>	Counsel the patient on malarial prevention	Microbiology Pharmacology	
<b>HIV</b>			
<b>WEEK - 8</b>	<b>IM 6.7</b>	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status	
	<b>IM 6.8</b>	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom	
	<b>IM 6.9</b>	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	Pathology Microbiology
	<b>IM 6.10</b>	Choose and interpret appropriate diagnostic tests to diagnose opportunistic infections including CBC, sputum examination and cultures, blood cultures, stool analysis, CSF analysis and Chest radiographs	
	<b>IM 6.12</b>	Enumerate the indications for and interpret the results of: pulse oximetry, ABG, Chest Radiograph	



	<b>IM 6.14</b>	Perform and interpret AFB sputum	Microbiology
	<b>IM 6.19</b>	Counsel patients on prevention of HIV transmission	AETCOM
	<b>IM 6.20</b>	Communicate diagnosis, treatment plan and subsequent follow up plan to patients	AETCOM
	<b>IM 6.21</b>	Communicate with patients on the importance of medication adherence	AETCOM
	<b>IM 6.22</b>	Demonstrate understanding of ethical and legal issues regarding patient confidentiality and disclosure in patients with HIV	AETCOM
<b>RHEUMATOLOGIC PROBLEMS</b>			
<b>WEEK - 9</b>	<b>IM 7.13</b>	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	
	<b>IM 7.14</b>	Describe the appropriate diagnostic work up based on the presumed aetiology	
	<b>IM 7.15</b>	Enumerate the indications for and interpret the results of : CBC, anti- CCP, RA, ANA, DNA and other tests of autoimmunity	Pathology
	<b>IM 7.17</b>	Enumerate the indications and interpret plain radiographs of joints	Radiodiagnosis, Orthopedics
	<b>IM 7.18</b>	Communicate diagnosis, treatment plan and subsequent follow up plan to patients	
	<b>IM 7.24</b>	Communicate and incorporate patient preferences in the choice of therapy	AETCOM
	<b>IM 7.25</b>	Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions	
	<b>IM 7.26</b>	Demonstrate an understanding of the impact of rheumatologic conditions on quality of life, well being, work and family	
<b>ACUTE KIDNEY INJURY AND CHRONIC RENAL FAILURE</b>			
<b>WEEK - 9</b>	<b>IM 10.12</b>	Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes	
	<b>IM 10.21</b>	Describe and discuss the indications for and insert a peripheral intravenous catheter	
	<b>IM 10.22</b>	Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter	
	<b>IM 10.23</b>	Communicate diagnosis treatment plan and subsequent follow up plan to patients	
	<b>IM 10.24</b>	Counsel patients on a renal diet	
<b>DIABETES MELLITUS</b>			
<b>WEEK - 10</b>	<b>IM11.11</b>	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	Pathology
	<b>IM11.12</b>	Perform and interpret a capillary blood glucose test	Pathology, Biochemistry
	<b>IM11.13</b>	Perform and interpret a urinary ketone estimation with a dipstick	Pathology, Biochemistry

	IM11.19	Demonstrate and counsel patients on the correct technique to administer insulin	Pharmacology
	IM11.20	Demonstrate to and counsel patients on the correct technique of self monitoring of blood glucose	
	IM11.21	Recognise the importance of patient preference while selecting therapy for diabetes	
<b>OBESITY</b>			
WEEK - 10	IM 14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis	
	IM 14.9	Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.	
<b>THYROID DYSFUNCTION</b>			
WEEK - 10	IM 12.8	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis	General Surgery
	IM 12.9	Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan	General Surgery
	IM 12.10	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG	
	IM 12.15	Describe and discuss the indications of thionamide therapy, radio iodine therapy and surgery in the management of thyrotoxicosis	Pharmacology, General Surgery
<b>ENVENOMATION</b>			
WEEK - 11	IM 20.2	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	Forensic Medicine
	IM 20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite	Forensic Medicine
	IM 20.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination	
<b>POISONING</b>			
WEEK - 11	IM 21.5	Observe and describe the functions and role of a poison center in suspected poisoning	Forensic Medicine, Pharmacology
	IM 21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy	Forensic Medicine, Pharmacology
	IM 21.8	Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture	Forensic Medicine, Psychiatry
<b>NUTRITIONAL AND VITAMIN DEFICIENCIES</b>			
WEEK - 11	IM 23.5	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet	
<b>GERIATRICS</b>			
WEEK - 11	IM 24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components	Psychiatry
<b>MISCELLANEOUS INFECTIONS</b>			
WEEK - 11	IM 25.6	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes	

	<b>IM 25.7</b>	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	Pathology, Microbiology
	<b>IM 25.9</b>	Assist in the collection of blood and other specimen cultures	Microbiology
	<b>IM 25.10</b>	Develop and present an appropriate diagnostic plan based on the clinical presentation, most likely diagnosis in a prioritised and cost effective manner	
	<b>IM 25.11</b>	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis	Microbiology, Pharmacology
	<b>IM 25.12</b>	Communicate to the patient and family the diagnosis and treatment of identified infection	AETCOM
	<b>IM 25.13</b>	Counsel the patient and family on prevention of various infections due to environmental issues	Community Medicine, General Medicine
<b>COMMON MALIGNANCIES</b>			
<b>WEEK - 12</b>	<b>IM 13.9</b>	Demonstrate in a mannequin the correct technique for performing breast exam, rectal examination and cervical examination and pap smear	Human Anatomy, General Surgery
	<b>IM 13.10</b>	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis	General Surgery
	<b>IM 13.11</b>	Order and interpret diagnostic testing based on the clinical diagnosis including CBC and stool occult blood and prostate specific antigen	
	<b>IM 13.12</b>	Describe the indications and interpret the results of Chest X Ray, mammogram, skin and tissue biopsies and tumor markers used in common cancers	Radiodiagnosis
	<b>IM 13.13</b>	Describe and assess pain and suffering objectively in a patient with cancer	Pharmacology, General Surgery
	<b>IM 13.14</b>	Describe the indications for surgery, radiation and chemotherapy for common malignancies	Pharmacology, General Surgery
	<b>IM 13.15</b>	Describe the need, tests involved, their utility in the prevention of common malignancies	Pathology
	<b>IM 13.16</b>	Demonstrate an understanding and needs and preferences of patients when choosing curative and palliative therapy	AETCOM
	<b>IM 13.17</b>	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer	Pharmacology, Anesthesiology
	<b>IM 13.18</b>	Describe and discuss the ethical and the medico legal issues involved in end of life care	AETCOM
<b>IM 13.19</b>	Describe the therapies used in alleviating suffering in patients at the end of life	AETCOM	
<b>THE ROLE OF THE PHYSICIAN IN THE COMMUNITY</b>			
<b>WEEK - 12</b>	<b>IM26.22</b>	Demonstrate ability to maintain confidentiality in patient care	
	<b>IM26.24</b>	Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers	
	<b>IM26.25</b>	Demonstrate responsibility and work ethics while working in the health care team	

<b>IM26.29</b>	Communicate diagnostic and therapeutic options to patient and family in a simulated environment	
<b>IM26.30</b>	Communicate care options to patient and family with a terminal illness in a simulated environment	
<b>IM26.31</b>	Demonstrate awareness of limitations and seeks help and consultations appropriately	
<b>IM26.35</b>	Demonstrate empathy in patient encounters	
<b>IM26.49</b>	Administer informed consent and appropriately address patient queries to a patient being enrolled in a research protocol in a simulated environment	

**DEPARTMENT OF GENERAL SURGERY**  
**GIMSR, GITAM (Deemed to be University)**  
**CBME BASED CURRICULUM**

**Subject:** Academic schedule and assessment procedure for General Surgery, subject to MBBS Undergraduate in 2<sup>nd</sup> professional year ( Phase II) and 3<sup>rd</sup> Professional year ( Phase III – Part I& Part II) including University Examination

**Goal:**

The broad goal of the teaching of under graduate students in the Surgery is to have the basic knowledge, skills and behavioral attributes towards surgical patient for quality care.

**Objectives:**

**KNOWLEDGE:**

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

- (1) Diagnose common surgical problems with good clinical examination.
- (2) Outline various modes of managements including conservative, damage control surgeries and definitive and palliative surgical treatments.
- (3) Propose diagnostic and investigative procedures and ability to interpret them
- (4) Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.
- (5) Pre and post operative care in surgical patient.

**Skills:**

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

1. Develop clinical skills (history taking, clinical examination) to diagnose various common surgical disorders and emergencies.
2. Refer a patient to secondary and/or tertiary level of health care after having instituted primary care.
3. Perform simple routine investigations like Pus for c/s, FNAC, Biopsy etc.

4. Perform the common minor surgical procedures like Dressings, Debridement, Drainage of abscess, suturing, First aid and Excision of small swellings.

5. Able to assist the various Surgical procedures in the operation theatre.

### **Departmental Objectives:**

At the end of clinical postings in General Surgery, the medical student shall

- Have developed an interest in patient care.
- Be able to discern the hopes and fears of patients, which inevitably underlie the symptom complexes and know how to handle these emotions, himself and in others.
- Possess adequate knowledge in the sciences of Medicines.
- Elicit a good clinical history, and physical findings, making a probable diagnosis and discuss the management keeping in mind all the differential diagnosis.
- Requisition for relevant tests and perform common bed side procedures.
- Outline the principles of management of various diseases.
- Have an open attitude to the developments in medicine so as to be aware of the need to keep abreast of new knowledge.
- Learn to be adaptable to new ideas and new situations where resources may be limited.
- maintain interpersonal communication with other branches of medicine
- Understand the ethical and legal implications in the surgical care.

(a) **Competencies:** The student must demonstrate:

1. Understanding of the structural and functional basis, principles of diagnosis and management of commonsurgical problems in adults and children,
2. Ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and bloodproducts based on the clinical condition,



3. Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice,
4. Knowledge of common malignancies in India and their prevention, early detection and therapy,
5. Ability to perform common diagnostic and surgical procedures at the primary care level,
6. Ability to recognize, resuscitate, stabilize and provide Basic & Advanced Life Support to patients following trauma,
7. Ability to administer informed consent and counsel patient prior to surgical procedures,
8. Commitment to advancement of quality and patient safety in surgical practice.

(b) **Integration:** The teaching will be aligned and integrated horizontally and vertically in order to provide a sound biologic basis and a holistic approach to the care of the surgical patient.

#### TEACHING METHODS & HOURS

Phase of MBBS	Large group Teaching	Small group teaching/Practical/Tutorials	SDL/AETCOM	Total	Clinical/Field Posting
2nd	25hours			25hours	4 week
3rdpart 1	40hours	42hours	5hours	87hours	4 week
3rdpart2	70hours	125hours	16hours	211hours	12week
<b>Total</b>	<b>135hours</b>	<b>167hours</b>	<b>21hours</b>	<b>323hours</b>	<b>20 week</b>

#### CLINICAL POSTINGS:

Subject	Period of Training in weeks			Total
	Second Professional MBBS	Third Professional Part I	Third Professional Part II	
General Surgery	4	4	8+4	20

The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday). The clinical postings in the third professional part I and part II shall be 18 hours per week (3 hrs per day from

Monday to Saturday). In these postings students attend Out-patient department, Operation theatres one day each per week, Remaining days students will see the clinical cases, take history and do clinical examination with the guidance of faculty, followed by clinical discussion. Few hours will be allotted to skill lab teaching and AETCOM modules. Hours may be distributed weekly or as a block in each posting based on institutional logistics. Students maintain the log book and frequently evaluated by the faculty and feedback will be given. There will be end of posting ward examination.

## **Assessment**

Total marks	University Examination Marks			Internal Assessment	
	Theory	clinical	Viva	Theory	Practical + Viva
Theory=200 Practical + Viva = 200	Paper 1=100 Paper 2=100	Long Case & Short case-120 Practical =30 Log Book & Record =10	40 One external & one Internal in each Group	200	200
Pass marks	Mandatory 50% in theory and Practical (Practical= Practical +Viva)				
Eligibility for University Exams	Internal Assessment Marks			Attendance	
	50% combined in theory and Practical (not less than 40% in each) for eligibility of appearing the University Examination			Theory	Clinics
				75%	80%

## **Scheme of Internal assessment**

Timing	Month	Theory	Practical & Viva
2 <sup>nd</sup> Professional Year	July	200	200
	December	200	200
3 <sup>rd</sup> Professional Year part I	July	200	200
	December	200	200
3 <sup>rd</sup> Professional Year part II	July	200	200
	December(Pre-final)	200	200

There shall be at least 2 internal assessments during second professional, 2 internal assessments during third professional part I and 2 internal assessments during third professional II. Last internal assessment in third professional should be pre-final examination

**SYLABUS FOR GENERAL SURGERY & BLUEPRINTING FOR QUESTION PAPER**

<b>Paper – I ( 100 Marks )</b>			
<b>Topic</b>	<b>Weightage %</b>	<b>Marks allotted</b>	<b>Type of questions</b>
<b><u>Basics of General Surgery</u></b> 1. Metabolic response to injury 2. Shock 3. Blood and blood components 4. Wound healing and wound care 5. Surgical Audit and Research 6. Ethics 7. Investigation of surgical patient 8. Pre, intra and post- operative management 9. Basic Surgical Skills 10. Surgical infections 11. Nutrition and fluid therapy 12. Biohazard disposal 13. Skin and subcutaneous tissue	<b>20-30%</b>	<b>20-30</b>	<b>EQ, SAQ, BAQ, MCQ</b>
<b><u>Head and Neck</u></b> 15. Developmental anomalies of face, mouth and jaws 16. Oropharyngeal cancer 17. Disorders of salivary glands	<b>10-15%</b>	<b>10-15</b>	<b>EQ, SAQ, BAQ, MCQ</b>
<b><u>Endocrine Surgery</u></b> 15. Endocrine General Surgery: Thyroid and parathyroid 16. Breast 17. Adrenal gland	<b>10-20%</b>	<b>10-20</b>	<b>EQ, SAQ, BAQ, MCQ</b>
<b><u>Abdomen</u></b> 18. Abdomen, Esophagus, Stomach, Small intestine, Large intestine, Appendix, Rectum, Anus 19. Liver, Gall bladder, Pancreas, spleen, 20. Minimally invasive General Surgery	<b>40-50%</b>	<b>40-50</b>	<b>EQ, SAQ, BAQ, MCQ</b>

**EQ- Essay Question, SAQ- Short Answer Question, BAQ- Brief Answer Question, MCQ- Multiple Choice Question**

<b>Paper – II ( 100 Marks )</b>			
<b>Part – A ( 50 Marks)</b>			
<b>Topic</b>	<b>Weightage %</b>	<b>Marks allotted</b>	<b>Type of questions</b>
1. Transplantation	<b>2 - 20%</b>	<b>1-10</b>	<b>EQ, SAQ, BAQ, MCQ</b>
2. Urinary System 3. Penis, Testis and scrotum	<b>20-40%</b>	<b>10-20</b>	<b>EQ, SAQ, BAQ, MCQ</b>
4. Trauma & Neuro surgery	<b>2-20%</b>	<b>1-10</b>	<b>EQ, SAQ, BAQ, MCQ</b>
5. Cardio-thoracic General Surgery- Chest - Heart and Lungs	<b>2 - 20%</b>	<b>1-10</b>	<b>EQ, SAQ, BAQ, MCQ</b>
6. Burns, Plastic surgery	<b>2 - 20%</b>	<b>1-10</b>	<b>EQ, SAQ, BAQ, MCQ</b>
7. Pediatric surgery	<b>2 - 20%</b>	<b>1-10</b>	<b>EQ, SAQ, BAQ, MCQ</b>
8. Vascular diseases	<b>10-20%</b>	<b>5-10</b>	<b>EQ, SAQ, BAQ, MCQ</b>
<b>Part – B ( 50 Marks )</b>			
1. Orthopaedics	<b>70%</b>	<b>35</b>	<b>EQ, SAQ, BAQ, MCQ</b>
2. Anaesthesia and pain management	<b>10%</b>	<b>5</b>	<b>SAQ</b>
3. Radio diagnosis & Imagiology in surgery	<b>10%</b>	<b>5</b>	<b>SAQ</b>
4. Dentistry	<b>10%</b>	<b>5</b>	<b>SAQ</b>

**EQ- Essay Question, SAQ- Short Answer Question, BAQ- Brief Answer Question, MCQ- Multiple Choice Question**

**COMPETENCY BASED UNDERGRADUATE CURRICULUM**  
**DEPARTMENT OF GENERAL SURGERY, GIMSR - Visakhapatnam**  
**GENERAL SURGERY MBBS Phase-II**

No.	COMPETENCY	Domain		Level	Core	Suggested Teaching learning method					Durati on
		K/S/A/C				K/KH/SH/P	(Y/N)	Lectures	Integrati on	Tut oria ls	
<b>Topic: Metabolic response to injury</b>											
SU1.1	Describe Basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.	K		KH	Y	Lecture-1hr					
SU1.2	Describe the factors that affect the metabolic response to injury.	K		KH	Y	Lecture - 1hr					
SU1.3	Describe basic concepts of perioperative care.	K		KH	Y						
<b>Topic: Shock</b>											
SU2.1	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring.	K		KH	Y	Lecture - 2hrs					
SU2.2	Describe the clinical features of shock and its appropriate treatment.	K		KH	Y	Lecture - 1hr					
<b>Topic: Blood and blood components</b>											
SU3.1	Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion.	K		KH	Y	Lecture 1 hr					
<b>Topic: Wound healing and wound care</b>											
SU5.1	Describe normal wound healing and factors affecting healing.	K		KH	Y	Lecture - 1 hr					
SU5.3	Differentiate the various types of wounds, plan and observe management of wounds.	K		KH	Y	Lecture - 1 hr					
SU5.4	Discuss medico legal aspects of wounds	K		KH	Y						
<b>Topic: Surgical infections</b>											
SU6.1	Define and describe the aetiology and pathogenesis of surgical Infections	K		KH	Y	Lecture - 2hs					
SU6.2	Enumerate Prophylactic and therapeutic antibiotics Plan appropriate management	K		KH	Y	Lecture - 1hr					
<b>Topic: Surgical Audit and Research</b>											
SU7.1	Describe the Planning and conduct of Surgical audit	K		KH	Y	Lecture - 1hr					
SU7.2	Describe the principles and steps of clinical research in General Surgery!	K		KH	Y	Lecture - 1hr					
<b>Topic: Ethics</b>											
SU8.1	Describe the principles of Ethics as it pertains to General Surgery		K	KH	Y	Lecture-1hr					

Topic: Pre, intra and post- operative management.										
SU10.1	Describe the principles of perioperative management of common surgical procedures	K	KH	Y	Lecture-2hrs					
Topic: Nutrition and fluid therapy										
SU12.1	Enumerate the causes and consequences of malnutrition in the surgical patient	K	KH	Y	Lecture-1hr					
SU12.2	Describe and discuss the methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patient	K	KH	Y	Lecture-2hrs					
SU12.3	Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications	K	KH	Y	Lecture -1hr					
Topic: Transplantation										
SU13.1	Describe the immunological basis of organ transplantation	K	KH	Y	Lecture-2hrs					
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ transplantation	K	KH	Y	Lecture-2hrs					
SU13.3	Discuss the legal and ethical issues concerning organ donation	K	KH	Y	Lecture -1hr					
					TOTAL	25HRS	0	0	0	0

## BED SIDE CLINICS FOR Phase II MBBS

**Duration 4 Weeks**

S.No	Number	Competency	Teaching method
1	SU5.2	Elicit, document and present a history in a patient presenting with wounds.	Small group teaching/DOAP
2	SU10.3	Observe common surgical procedures and assist in minor surgical procedures; Observe emergency lifesaving surgical procedures.	CLINICS(OT)
3	SU18.3	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.	Small group teaching/DOAP
4	SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management	Small group teaching/DOAP
5	SU25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent	Small group teaching/DOAP
6	SU27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	Small group teaching/DOAP
7	SU27.8	Demonstrate the correct examination of the lymphatic system	Small group teaching/DOAP
8	SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.	Small group teaching/DOAP
9	SU28.9	Demonstrate the correct technique of examination of a patient with disorders of the stomach	Small group teaching/DOAP



10	SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan	Small group teaching/DOAP
11	SU10.2	Describe the steps and obtain informed consent in a simulated environment	SKILL LAB(DOAP/Small group discussion)
12	SU10.4	Perform basic surgical Skills such as First aid including suturing and minor surgical procedures in simulated environment	SKILL LAB(DOAP/Small group discussion)
13	SU11.3	Demonstrate maintenance of an airway in a mannequin or equivalent	SKILL LAB(DOAP/Small group discussion)
14	SU29.10	Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent	SKILL LAB(DOAP/Small group discussion)
15	SU14.4	Demonstrate the techniques of asepsis and suturing in a simulated environment	SKILL LAB(DOAP/Small group discussion)
16	SU17.1	Describe the Principles of FIRST AID	SKILL LAB(DOAP/Small group discussion)
17	SU17.2	Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	SKILL LAB(DOAP/Small group discussion)
18	SU17.10	Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment.	SKILL LAB(DOAP/Small group discussion)
19	SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care	TUTORIAL/AETCOM
20	SU3.2	Observe blood transfusions.	
21	SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.	TUTORIAL/AETCOM
22	SU4.4	Burns - Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.	TUTORIAL/AETCOM
23	SU8.2	Demonstrate Professionalism and empathy to the patient undergoing General Surgery	TUTORIAL/AETCOM
24	SU8.3	Discuss Medico-legal issues in surgical practice	TUTORIAL/AETCOM
25	SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	TUTORIAL/AETCOM
26	SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately	TUTORIAL/AETCOM
27	SU13.4	Counsel patients and relatives on organ donation in a simulated environment	TUTORIAL/AETCOM
28	SU25.4	Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast	TUTORIAL/AETCOM

These competencies will be taught to the students according to the institutional logistics and availability of clinical material. Students will attend Out-patient department, Operation theatres one day each per week.

## GENERAL SURGERY MBBS phase-III, PART – I

Number	COMPETENCY	Domain	Level	Core	Suggested Teaching learning method				
					K/S/A/C	K/KH/SH/P	(Y/N)	Lectures	Integration
<b>Topic: Blood and blood components</b>									
SU3.1	Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion.	K	KH	Y				1hr	
SU3.2	Observe blood transfusions.	S	SH	Y			BEDSIDE CLINICS		
SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.	A/C	SH	Y		Pathology( Blood bank) 1hr	DOAP session-1hr		
<b>Topic: Burns</b>									
SU4.1	Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns.	K	KH	Y		Physiology - 1hr		1hr	
SU4.2	Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.	K	KH	Y	2hrs				1hr
SU4.3	Discuss the Medicolegal aspects in burn injuries.	K	KH	Y		FMT-1hr			
SU4.4	Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.	A /C	SH	Y			1hr		
<b>Topic: Wound healing and wound care</b>									
SU5.2	Elicit, document and present a history in a patient presenting with wounds.	C	SH	Y			BEDSIDE CLINICS/ Tutorial-1hr		
<b>Topic: Skin and subcutaneous tissue</b>									
SU18.1	Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections.	K	KH	Y	1hr				
SU18.2	Classify skin tumors Differentiate different skin tumors and discuss their management.	K	KH	Y	2hrs	Pathology-1hrs		1hr	
SU18.3	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.	S	SH	Y			BEDSIDE CLINICS/ Tutorial - 1hr		
<b>Topic: Investigation of surgical patient</b>									
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	C	KH	Y	1hr	Lecture 4hr (Biochemistry, Microbiology, Pathology, Radiology)			
SU9.2	Biological basis for early detection of cancer and multidisciplinary approach in management of cancer	C	KH	Y	2hrs	Pathology-1hr			1hr
SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately	C	SH	Y			1hr		

<b>Topic: Pre, intra and post- operative management.</b>									
SU10.2	Describe the steps and obtain informed consent in a simulated environment	S/A/C	SH	Y			1hr		
<b>Topic: Anaesthesia and pain management</b>									
SU11.1	Describe principles of Preoperative assessment.	K	KH	Y	2hrs				
SU11.2	Enumerate the principles of general, regional, and local Anaesthesia.	K	KH	Y		Anaesthesia - 1hr			
SU11.4	Enumerate the indications and principles of day care General Surgery	K	KH	Y	1hr				
SU11.5	Describe principles of providing post-operative pain relief and management of chronic pain.	K	KH	Y		Anaesthesia - 1hr			
SU11.6	Describe Principles of safe General Surgery	K	KH	Y	1hr			1hr	
<b>Topic: Transplantation</b>									
SU13.4	Counsel patients and relatives on organ donation in a simulated environment	S	SH	Y			DOAP session-1hr		1hr
<b>Topic: Cardio-thoracic General Surgery- Chest - Heart and Lungs</b>									
SU26.1	Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases	K	K	Y	1hr	General medicine - 1hr			
SU26.3	Describe the clinical features of mediastinal diseases and the principles of management	K	K	Y	1hr			1hr	
SU26.4	Describe the etiology, pathogenesis, clinical features of tumors of lung and the principles of management	K	K	Y	1hr				1hr
<b>Topic: Vascular diseases</b>									
SU27.1	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.	K	KH	Y	3hrs				
SU27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	S	SH	Y			Bedside clinic 1hr		
SU27.3	Describe clinical features, investigations and principles of management of vasospastic disorders	K	KH	Y	1hr				
SU27.4	Describe the types of gangrene and principles of amputation	K	KH	Y	1hrs				
SU27.5	Describe the applied anatomy of venous system of lower limb	K	K	Y		Anatomy-1hr			
SU27.6	Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins	K	KH	Y	3hrs				
SU27.7	Describe pathophysiology, clinical features, investigations and principles of management of Lymph edema, lymphangitis and Lymphomas	K	KH	Y	2hrs				
SU27.8	Demonstrate the correct examination of the lymphatic system	S	SH	Y			Bedside clinic		

Topic: Urinary System									
SU29.1	Describe the causes, investigations and principles of management of Hematuria	K	KH	Y	1hr			1hr	
SU29.2	Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system	K	KH	Y	1hr	Anatomy-1hr			
SU29.3	Describe the Clinical features, Investigations and principles of management of urinary tract infections	K	KH	Y	1hr	Microbiology- 1hr			
SU29.4	Describe the clinical features, investigations and principles of management of hydronephrosis	K	KH	Y	1hr			1hr	
SU29.5	Describe the clinical features, investigations and principles of management of renal calculi	K	KH	Y	1hr			1hr	
SU29.6	Describe the clinical features, investigations and principles of management of renal tumours	K	KH	Y	1hr			1hr	
SU29.7	Describe the principles of management of acute and chronic retention of urine	K	KH	Y	1hr				1hr
SU29.8	Describe the clinical features, investigations and principles of management of bladder cancer	K	KH	Y	1hr			1hr	
SU29.9	Describe the clinical features, investigations and principles of management of disorders of prostate	K	KH	Y	1hr	Anatomy-1hr			
SU29.11	Describe clinical features, investigations and management of urethral strictures	K	KH	Y	1hr				
Topic: Penis, Testis and scrotum									
SU30.1	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis and carcinoma penis.	K	KH	Y	2hrs	Anatomy-1hr		1hr	
SU30.2	Describe the applied anatomy clinical features, investigations and principles of management of undescended testis.	K	KH	Y	1hr	Anatomy-1hr			
SU30.3	Describe the applied anatomy clinical features, investigations and principles of management of epididymo-orchitis	K	KH	Y	1hr			1hr	
SU30.4	Describe the applied anatomy clinical features, investigations and principles of management of varicocele	K	KH	Y				1hr	
SU30.5	Describe the applied anatomy, clinical features, investigations and principles of management of Hydrocele	K	KH	Y	1hr			1hr	
SU30.6	Describe classification, clinical features, investigations and principles of management of tumours of testis	K	KH	Y	1hr	Pathology-1hr		1hr	
				Total	40hrs	19hrs	8hrs	15hrs	5hrs
									Total: 87hrs

## BED SIDE CLINICS FOR Phase III MBBS PART I

### Duration 4 Weeks

S.No	Number	Competency	Teaching method
1	SU5.2	Elicit, document and present a history in a patient presenting with wounds.	Small group teaching/DOAP
2	SU10.3	Observe common surgical procedures and assist in minor surgical procedures; Observe emergency lifesaving surgical procedures.	CLINICS(OT)
3	SU18.3	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.	Small group teaching/DOAP
4	SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management	Small group teaching/DOAP
5	SU25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent	Small group teaching/DOAP
6	SU27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	Small group teaching/DOAP
7	SU27.8	Demonstrate the correct examination of the lymphatic system	Small group teaching/DOAP
8	SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.	Small group teaching/DOAP
9	SU28.9	Demonstrate the correct technique of examination of a patient with disorders of the stomach	Small group teaching/DOAP
10	SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan	Small group teaching/DOAP
11	SU10.2	Describe the steps and obtain informed consent in a simulated environment	SKILL LAB(DOAP/Small group discussion)
12	SU10.4	Perform basic surgical Skills such as First aid including suturing and minor surgical procedures in simulated environment	SKILL LAB(DOAP/Small group discussion)
13	SU11.3	Demonstrate maintenance of an airway in a mannequin or equivalent	SKILL LAB(DOAP/Small group discussion)
14	SU29.10	Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent	SKILL LAB(DOAP/Small group discussion)
15	SU14.4	Demonstrate the techniques of asepsis and suturing in a simulated environment	SKILL LAB(DOAP/Small group discussion)
16	SU17.1	Describe the Principles of FIRST AID	SKILL LAB(DOAP/Small group discussion)
17	SU17.2	Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	SKILL LAB(DOAP/Small group discussion)
18	SU17.10	Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment.	SKILL LAB(DOAP/Small group discussion)

19	SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care	TUTORIAL/AETCOM
20	SU3.2	Observe blood transfusions.	
21	SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.	TUTORIAL/AETCOM
22	SU4.4	Burns - Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.	TUTORIAL/AETCOM
23	SU8.2	Demonstrate Professionalism and empathy to the patient undergoing General Surgery	TUTORIAL/AETCOM
24	SU8.3	Discuss Medico-legal issues in surgical practice	TUTORIAL/AETCOM
25	SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	TUTORIAL/AETCOM
26	SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately	TUTORIAL/AETCOM
27	SU13.4	Counsel patients and relatives on organ donation in a simulated environment	TUTORIAL/AETCOM
28	SU25.4	Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast	TUTORIAL/AETCOM

These competencies will be taught to the students according to the institutional logistics and availability of clinical material. Students will attend Out-patient department, Operation theatres one day each per week.

### **GENERAL SURGERY MBBS phase-III, PART – II**

Number	COMPETENCY	Domain	Level	Core	Suggested Teaching learning method				
					K/S/A/C	K/KH/SH/P	(Y/N)	Lectures	Integration
<b>Topic: Metabolic response to injury</b>									
SU1.1	Describe Basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.	K	KH	Y				2hrs	
SU1.2	Describe the factors that affect the metabolic response to injury.	K	KH	Y					
SU1.3	Describe basic concepts of perioperative care.	K	KH	Y					
<b>Topic: Shock</b>									
SU2.1	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring.	K	KH	Y				2hrs	
SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care	A/C	SH	Y					AETCOM
<b>Topic: Blood and blood components</b>									
SU3.1	Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion.	K	KH	Y				2hrs	
<b>Topic: Wound healing and wound care</b>									
SU5.1	Describe normal wound healing and factors affecting healing.	K	KH	Y				2hrs	
<b>Topic: Ethics</b>									
SU8.2	Demonstrate Professionalism and empathy to the patient undergoing General Surgery	A/C	SH	Y		FMT 1hr			FMT-AETCOM
SU8.3	Discuss Medico-legal issues in surgical practice	A/C	KH	Y		FMT 1hr			FMT-AETCOM
<b>Topic: Pre, intra and post- operative management.</b>									



SU10.2	Describe the steps and obtain informed consent in a simulated environment	S/A/C	SH	Y			Tutorial- 2hr		
SU10.3	Observe common surgical procedures and assist in minor surgical procedures; Observe emergency lifesaving surgical procedures.	S	KH	Y			BEDSIDE CLINICS, Operative procedures-tutorial-2hrs		
SU10.4	Perform basic surgical Skills such as First aid including suturing and minor surgical procedures in simulated environment	S	P	Y			Skill Lab- 2hrs		
<b>Topic: Anaesthesia and pain management</b>									
SU11.3	Demonstrate maintenance of an airway in a mannequin or equivalent	S	SH	Y		Anaesthesia - 2hr Skill Lab			
<b>Topic: Nutrition and fluid therapy</b>									
SU12.1	Enumerate the causes and consequences of malnutrition in the surgical patient	K	KH	Y				2hrs	
SU12.2	Describe and discuss the methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patient	K	KH	Y					
SU12.3	Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications	K	KH	Y					
<b>Topic: Transplantation</b>									
SU13.1	Describe the immunological basis of organ transplantation	K	KH	Y				2hrs	
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ transplantation	K	KH	Y					
<b>Topic: Basic Surgical Skills</b>									
SU14.1	Describe Aseptic techniques, sterilization and disinfection.	K	KH	Y	1hr	Microbiology- 2hr			
SU14.2	Describe Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.	K	KH	Y	1hr				
SU14.3	Describe the materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)	K	KH	Y	2hrs				1hr
SU14.4	Demonstrate the techniques of asepsis and suturing in a simulated environment	S	SH	Y			Skill Lab- 4hrs		
<b>Topic: Biohazard disposal</b>									
SU15.1	Describe classification of hospital waste and appropriate methods of disposal.	K	KH	Y	1hr	Microbiology- 2hr			1hr
<b>Topic: Minimally invasive General Surgery</b>									
SU16.1	Minimally invasive General Surgery: Describe indications advantages and disadvantages of Minimally invasive General Surgery	K	K	Y	2hrs				1hr
<b>Topic: Trauma</b>									
SU17.1	Describe the Principles of FIRST AID	S	KH	Y	1hr		Tutorial- 2hr		
SU17.2	Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	S	SH	Y		Anaesthesia - 2hr	Skill Lab- 2hrs		
SU17.3	Describe the Principles in management of mass casualties	K	KH	Y	1hr				1hr

SU17.4	Describe Pathophysiology, mechanism of head injuries	K	KH	Y	1hr				
SU17.5	Describe clinical features for neurological assessment and GCS in head injuries	K	KH	Y	1hr				1hr
SU17.6	Chose appropriate investigations and discuss the principles of management of head injuries	K	KH	Y	2hr	Radiology-2hr			
SU17.7	Describe the clinical features of soft tissue injuries. Chose appropriate investigations and discuss the principles of management.	K	KH	Y	1hr			2hrs	
SU17.8	Describe the pathophysiology of chest injuries.	K	KH	Y	1hr				
SU17.9	Describe the clinical features and principles of management of chest injuries.	K	KH	Y	1hr				1hr
SU17.10	Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment.	S	SH	Y		Anaesthesia- 2hr	Skill Lab- 2hrs		
<b>Topic: Developmental anomalies of face, mouth and jaws</b>									
SU19.1	Describe the etiology and classification of cleft lip and palate	K	KH	Y	1hr	Anatomy-2hrs		2hrs	
SU19.2	Describe the Principles of reconstruction of cleft lip and palate	K	KH	Y	1hr				
<b>Topic: Oropharyngeal cancer</b>									
SU20.1	Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer.	K	KH	Y	2hr	ENT- 2hr			1hr
SU20.2	Enumerate the appropriate investigations and discuss the Principles of treatment.	K	K	Y	1hr				
<b>Topic: Disorders of salivary glands</b>									
SU21.1	Describe surgical anatomy of the salivary glands, pathology, and clinical presentation of disorders of salivary glands	K	KH	Y	1hr	Anatomy-2hrs		2hrs	
SU21.2	Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands	K	KH	Y	1hr				1hr
<b>Topic: Endocrine General Surgery: Thyroid and parathyroid</b>									
SU22.1	Describe the applied anatomy and physiology of thyroid	K	KH	Y	1hr	Anatomy-2hr		2hrs	
SU22.2	Describe the etiopathogenesis of thyroidal swellings discussion	K	KH	Y		Pathology-2hr			
SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management	S	SH	Y			Bedside clinic, Tutorial- 2hr		1hr
SU22.4	Describe the clinical features, classification and principles of management of thyroid cancer	K	KH	Y	3hrs				
SU22.5	Describe the applied anatomy of parathyroid	K	KH	Y	1hr	Anatomy-2hr			
SU22.6	Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management	K	KH	Y	1hr	General Medicine-2hr			
<b>Topic: Adrenal glands</b>									
SU23.1	Describe the applied anatomy of adrenal glands	K	KH	Y		Anatomy-2hr			
SU23.2	Describe the etiology, clinical features and principles of management of disorders of adrenal gland	K	KH	Y	1hr	General Medicine-2hr			

SU23.3	Describe the clinical features, principles of investigation and management of Adrenal tumors Demonstration	K	KH	Y	1hr				1hr
<b>Topic: Pancreas</b>									
SU24.1	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis.	K	KH	Y	2hrs	General Medicine-2hr			
SU24.2	Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumours	K	KH	Y	1hr				1hr
SU24.3	Describe the principles of investigation and management of Pancreatic disorders including pancreatitis and endocrine tumors.	K	KH	Y	1hr	Radiology-2hr		1hr	
<b>Topic: Breast</b>									
SU25.1	Describe applied anatomy and appropriate investigations for breast disease	K	KH	Y		Anatomy-2hr		2hrs	
SU25.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast	K	KH	Y	2hrs				1hr
SU25.3	Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.	K	KH	Y	3hrs	Radiology-2hr, Pathology 2hrs			
SU25.4	Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast	A/ C	SH	Y			1hr		AETCOM
SU25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent	S	SH	Y			DOAP session-skill lab 2hrs		
<b>Topic: Vascular diseases</b>									
SU27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	S	SH	Y			Bedside clinic, Tutorial- 2hr		
SU27.8	Demonstrate the correct examination of the lymphatic system	S	SH	Y			Bedside clinic, Tutorial- 2hr		
<b>Topic: Abdomen</b>									
SU28.1	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias	K	KH	Y	2hrs			2hrs	
SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.	S	SH	Y			Bedside clinic, Tutorial- 2hr		
SU28.3	Describe causes, clinical features, complications and principles of mangament of peritonitis	K	K	Y	1hr				1hr
SU28.4	Describe pathophysiology, clinical features, investigations and principles of management of Intra-abdominal abscess, mesentericcyst, and retroperitoneal tumors	K	K	Y	2hrs			2hrs	
SU28.5	Describe the applied Anatomy and physiology of esophagus	K	K	Y		Anatomy, Physiology - 2hr			
SU28.6	Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus	K	K	Y	3hrs			2hrs	

SU28.7	Describe the applied anatomy and physiology of stomach	K	KH	Y		Anatomy-2hr			
SU28.8	Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach	K	KH	Y	3hrs				1hr
SU28.9	Demonstrate the correct technique of examination of a patient with disorders of the stomach	S	SH	Y			Bedside clinic, Tutorial 2hrs		
SU28.10	Describe the applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumors of the liver	K	KH	Y	4hrs	Anatomy-2hr		2hrs	
SU28.11	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis - prophylaxis	K	KH	Y	2hrs				
SU28.12	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system	K	KH	Y	4hrs	Anatomy-2hr		2hrs	
SU28.13	Describe the applied anatomy of small and large intestine	K	KH	Y		Anatomy-2hrs			
SU28.14	Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	K	KH	Y	5hrs	General Medicine-2hr			1hr
SU28.15	Describe the clinical features, investigations and principles of management of diseases of Appendix including appendicitis and its complications.	K	KH	Y	2hrs				
SU28.16	Describe applied anatomy including congenital anomalies of the rectum and anal canal	K	KH	Y		Anatomy-2hrs			
SU28.17	Describe the clinical features, investigations and principles of management of common anorectal diseases	K	KH	Y	2hrs			2hrs	
SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan	S	SH	Y			Bedside clinic, Tutorial 2hrs		1hr
<b>Topic: Urinary System</b>									
SU29.10	Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent	S	SH	Y			Skill lab 2hrs		
Total					70hrs	56hrs	33hrs	36hrs	16hrs
								<b>TOTAL</b>	<b>211HRS</b>

## BED SIDE CLINICS FOR Phase III MBBS PART II

**Duration 8+4 Weeks**

S.No	Number	Competency	Teaching method
1	SU5.2	Elicit, document and present a history in a patient presenting with wounds.	Small group teaching/DOAP
2	SU10.3	Observe common surgical procedures and assist in minor surgical procedures; Observe emergency lifesaving surgical procedures.	CLINICS(OT)
3	SU18.3	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.	Small group teaching/DOAP
4	SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their management	Small group teaching/DOAP
5	SU25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent	Small group teaching/DOAP
6	SU27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	Small group teaching/DOAP
7	SU27.8	Demonstrate the correct examination of the lymphatic system	Small group teaching/DOAP
8	SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.	Small group teaching/DOAP
9	SU28.9	Demonstrate the correct technique of examination of a patient with disorders of the stomach	Small group teaching/DOAP
10	SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan	Small group teaching/DOAP
11	SU10.2	Describe the steps and obtain informed consent in a simulated environment	SKILL LAB(DOAP/Small group discussion)
12	SU10.4	Perform basic surgical Skills such as First aid including suturing and minor surgical procedures in simulated environment	SKILL LAB(DOAP/Small group discussion)
13	SU11.3	Demonstrate maintenance of an airway in a mannequin or equivalent	SKILL LAB(DOAP/Small group discussion)
14	SU29.10	Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent	SKILL LAB(DOAP/Small group discussion)
15	SU14.4	Demonstrate the techniques of asepsis and suturing in a simulated environment	SKILL LAB(DOAP/Small group discussion)
16	SU17.1	Describe the Principles of FIRST AID	SKILL LAB(DOAP/Small group discussion)
17	SU17.2	Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	SKILL LAB(DOAP/Small group discussion)
18	SU17.10	Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment.	SKILL LAB(DOAP/Small group discussion)
19	SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care	TUTORIAL/AETCOM

20	SU3.2	Observe blood transfusions.	
21	SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.	TUTORIAL/AETCOM
22	SU4.4	Burns - Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.	TUTORIAL/AETCOM
23	SU8.2	Demonstrate Professionalism and empathy to the patient undergoing General Surgery	TUTORIAL/AETCOM
24	SU8.3	Discuss Medico-legal issues in surgical practice	TUTORIAL/AETCOM
25	SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	TUTORIAL/AETCOM
26	SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately	TUTORIAL/AETCOM
27	SU13.4	Counsel patients and relatives on organ donation in a simulated environment	TUTORIAL/AETCOM
28	SU25.4	Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast	TUTORIAL/AETCOM

These competencies will be taught to the students according to the institutional logistics and availability of clinical material. Students will attend Out-patient department, Operation theatres one day each per week.

### **Text Books(latest edition) Recommended AND Operative manuals:**

1. Bailey & Love's short practice of surgery recent edition.
2. Farquharson's – Operative General Surgery

### **Clinical Methods Books recommended:**

1. Pye's Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery
2. A manual of clinical surgery by S.Das recent edition
3. Hamilton bailey's demonstrations of physical signs in clinical surgery recent edition

### **Reference Books:**

1. Schwartz's Principles of Surgery recent edition
2. Sabiston's Textbook of Surgery: The Biological Basis of Modern Surgical Practice recent Edition.



## **DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY**

### **GIMSR, GITAM (Deemed to be University)**

#### **CBME Curriculum Phase - II & III**

This curriculum and syllabus are based on CBME curriculum applicable for admissions from 2019.

#### **Goal**

The broad goal of teaching and training of undergraduate students in Obstetrics and Gynaecology is that the student should acquire knowledge of structure, normal function and abnormal function of the female reproductive system and gain the knowledge and competency to diagnose and manage common clinical conditions affecting it.

#### **Objectives**

##### **Knowledge and Skills**

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

1. Outline the anatomy, physiology and pathophysiology of the reproductive system and the common clinical obstetric and gynaecological conditions.
2. Diagnose and manage normal pregnancy, normal labour, puerperium and lactation and identify high risk pregnancy and the associated problems.
3. Identify the leading causes of maternal and perinatal morbidity and mortality and learn prevention and basic management and situations of referral to the specialist care.
4. Understand the principles of contraception and various techniques employed, methods of medical termination of pregnancy, sterilisation and their complications and awareness of national programs.
5. Identify use, abuse and side effects of drugs in obstetric and gynaecological practice.
5. Acquire basic knowledge of benign gynaecological diseases and infections and sexually transmitted infections.
6. Learn diagnosis and prevention of gynaecological cancers and referral to specialist care.
7. Acquire basic knowledge of indications, techniques complications and perioperative care of minor and major obstetric, gynaecological and family planning surgical procedures.
8. Acquire skill in basic obstetrics and gynaecological examination and procedures, management of common diseases and their complications.

##### **Course Schedule:**

The above objectives are achieved through clinical postings and theory classes( lectures, tutorials, SDL, integrated teaching).

**Gynaec Postings begin in Second professional year.**

### **Second Professional Year**

- 25 hours allotted for OBG
- Clinical postings for 4 Weeks, shall be 15 hours per week (3 hours per day from Monday to Friday)

### **Third Professional Year**

Phase III Part – I - total duration 13 months reduced to 11 months (pandemic module for 2019 batch)

	<b>Lectures</b>	<b>SGD (tutorials/Seminar/ Integrated Teaching)</b>	<b>SDL</b>	<b>Total</b>	<b>Clinical postings</b>
<b>Phase III Part I</b>	25	35	5	65	4 weeks
<b>Phase III Part II</b>	70	125	15	210	8+4=12weeks

1. In clinical postings each student will follow 2 cases per week from admission to discharge and note in the record or observation book duly signed by assistant professor.
2. Bedside teaching to involve all students, focus on history taking, eliciting clinical signs, management strategies and communication skills.
3. For all certifiable procedural skills (implement DOAP session) skill lab will be used and all these to be entered in log book and duly signed.
4. Improving analytical skills in respective competencies by small group discussions.
5. Internal assessment at the end of every posting both theory and practical's.
6. Attendance cumulative in all professional years.
7. Dedicated posting to labour room for 4 weeks in part II , third professional year to assist and conduct normal deliveries under supervision, Caesarean section, operative deliveries, management of PPH, Eclampsia other major and minor procedures. All these are to be entered in record book and duly signed.

8. Mandatory practice on mannequins for certain must do procedures.
9. Focussed visits to centres dealing with national programs
10. Electives will be designed as per available infrastructure.
11. Implementing pandemic module.
12. Internal assessment needs to focus on log book and direct observation of skills.
15. AETCOM modules as per longitudinal program.
17. Encouragement of self directed learning, making students participate in seminars and symposia.
18. Field visits to primary and secondary level of health care.
19. Emphasize case based teaching.
21. Clinical clerkship in second professional year to focus on history taking, basic clinical examination, assessment of change in clinical status, communication and patient education. Third professional year part I to focus on all of the above and arriving at differential diagnosis, ordering relevant investigations. Third professional year part II to focus on decision making, management plans, prognosis, follow up and continuity of care.

**Integration:**

- The teaching shall be aligned and integrated horizontally and vertically recognizing the importance of medical, surgical, medico – legal, social and ethical issues as they relate to the practice of Obstetrics & Gynaecology.
- 25 % of the allotted time shall be utilized for integrated learning with pre and para clinical subjects and assessed during clinical subject examination.
- Integrated teaching with clinical departments like Medicine, Surgery, Paediatrics, Radiology etc will be conducted where ever necessary.

**Assessment:**

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

**(a) Attendance:-**

The learner must have 75% attendance in theory and 80% in clinical postings in each 2<sup>nd</sup> Professional (Phase II) and 3<sup>rd</sup> Professional (Phase III) – Part – I & Part – II.

**(b) Internal Assessment :**

Internal assessment will be based on day -to- day assessment. It will relate to different ways in which learners participate in learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/ problem solving exercise, maintaining log book and records, written test and orals etc.

1. Regular periodic examinations will be conducted throughout 2<sup>nd</sup> professional (Phase II) and 3<sup>rd</sup> Professional (Phase III) – Part I & Part – II.
- 2. Second Professional year** : There will be 2 internal assessments in second professional year for 100 marks each. Clinical examination will be conducted at the end of the clinical postings for 100 marks based on competencies and skills acquired in that phase.
- 3. Third Professional year:** There will be 2 internal assessments in third professional year for 100 marks each. Second exam is the pre final exam .Clinical examination will be conducted at the end of the clinical postings for 100 marks based on competencies and skills acquired in that phase.
4. Day to Day records and findings will be written in log book (including required skill certifications).These findings will be given importance in internal assessment.
5. Learners must secure at least 50% marks of the total marks(combined in theory and practical not less than 40 % marks in theory and practical separately.) assigned for internal assessment marks will reflect as separate head of passing at the summative examination.
6. The results of internal assessment will be displayed on the notice board within 1 – 2 weeks of the test.
7. Students must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination.

#### **University Examination Pattern:**

##### **Theory:-**

Number of papers – Two

Paper I : Obstetrics, Neonatology, Social Obstetrics

Paper II : Gynaecology, Family planning and Contraception.

Time – 3 hours each.

<b>Distribution of Marks</b> – 2 Essay	-	2 X 10	= 20 marks
10 Short notes	-	10 X 5	= 50 Marks
5 Brief notes	-	5 X 2	= 10 Marks
20 MCQs/ Objective type	-	20 X 1	= 20 Marks
<b>Total</b>			<b>= 100 Marks</b>

**Practical:**

**Distribution of marks –**

Obstetrics case - 50 marks

Gynaec case - 50 marks

**Viva Voce -**

1. Maternal pelvis and fetus = 20 marks

2. Obstetrics Viva = 25 marks

(Obstetrics instruments, specimens, drugs etc.)

3. Gynaec Viva = 25 marks

(Gynaec instruments, specimens, drugs etc.)

4. Family planning and contraception = 20 marks

5. Record = 10 marks

**Total marks = 200 marks**

**Eligibility criteria to appear for university examination:**

**Marks requirements**

- 50% marks combined in theory and practical marks (not less than 40% in each in any internal assessment examination for eligibility to appear for university examinations.
- The student has to attend final internal assessment examination (Pre final) without fail.

**Attendance requirements**

- 75 % in theory and 80% in clinical in 2<sup>nd</sup> Professional year
- 75% in theory and 80% in clinical 3<sup>rd</sup> Professional year (Phase III) - Part – I & Part - II

**Eligibility criteria to pass Final university examination:**

A candidate shall obtain 50 % marks in university examination separately in theory and practical (practical includes: practical and viva) in order to be declared as passed.

**Recommended Text Books:**

1. Shaw's text book of Gynaecology by Dr.Daftari&V.Pdubaidri
2. Text book of Obstetrics – by Dr.D.C.Dutta
3. Text Book of Gyanecology – by Dr.D.C.Dutta.
6. Text Book of Obstetrics – Dr.G.R.K.Raju
7. Manual of Obstetrics – Dr.SirishDaftary
8. Text Book of Obstetrics – by Mudaliar& Menon

**Reference Books:**

1. Williams Obstetrics.
2. Jeffcoates Gynaecology
3. Novak's Text Book of Gynaecology
4. Williams Gynaecology
5. Post graduate obstetrics & Gynaecology ol-I & II by Dr.Ratnam &Dr.Arul Kumaran
6. Management of labour – Dr.Arul Kumaran
7. Spheroff's text book of endocrinology and infertility



**Blue printing for Question paper**

**Paper I - Obstetrics, Neonatology, Social Obstetrics**

**Total Marks = 100 ( including MCQs)**

<b>S.No</b>	<b>Topic</b>	<b>Weightage in %</b>	<b>Marks</b>	<b>Type of Questions</b>
1	Anatomy and Physiology of pelvis, Genital organs, Fertilisation and development of Embryo	5	5	SAQ,BAQ.MCQ
2	Physiology of pregnancy, Prenatal care and antepartum surveillance	5	5	SAQ,BAQ.MCQ
3	Physiology of labour and Puerperium	15	15	LAQ,SAQ,BAQ.MCQ
4	Complications of pregnancy	20	20	LAQ,SAQ,BAQ.MCQ
5	Diseases complicating pregnancy	20	20	LAQ,SAQ,BAQ.MCQ
6	Abnormal labour	15	15	LAQ,SAQ,BAQ.MCQ
7	New born and neonatal problems	5	5	SAQ,BAQ.MCQ
8	Obstetrics operations and procedures	10	10	SAQ,BAQ.MCQ
9	Social obstetrics and miscellaneous	5	5	SAQ,BAQ.MCQ
	<b>Total</b>	<b>100</b>	<b>100</b>	

**Note:**

SAQ - Short Answer Question (5 marks)

LAQ - Long Answer Question (10 marks)

BAQ - Brief Answer Question (2 marks)

MCQ - Multiple Choice Question (1 mark)

**Blue printing for Question paper**

**Paper II - Gynaecology, Family Planning, Contraception**

**Total Marks = 100 ( including MCQs)**

<b>S.No</b>	<b>Topic</b>	<b>Weightage in %</b>	<b>Marks</b>	<b>Type of Questions</b>
1	Anatomy and Reproductive Physiology	2	2	SAQ,BAQ.MCQ
2	Puberty, Paediatric and Adolescent gynaecology	5	5	SAQ,BAQ.MCQ
3	Adult gynaecology : Reproductive years (AUB, Dysmenorrhoea, Pelvic pain, Endometriosis)	14	14	LAQ,SAQ,BAQ.MCQ
4	STD's and Genito urinary infections including Tuberculosis	5	5	SAQ,BAQ.MCQ
5	Sexual development and its disorders, malformations of genital tract	2	2	SAQ,BAQ.MCQ
6	Urogynaecology, Genital prolapse, Injuries, Genital fistulae	10	10	LAQ,SAQ,BAQ.MCQ
7	Reproductive endocrinology, Infertility( Including Amenorrhoea)	15	15	LAQ,SAQ,BAQ.MCQ
8	Early pregnancy issues ( Ectopic, Molar pregnancy)	10	10	LAQ,SAQ,BAQ.MCQ
9	Benign diseases of Vulva, Vagina, Cervix.	2	2	SAQ,BAQ.MCQ
10	Gynaecologic oncology ( including intra epithelial lesions of vulva, vagina, cervix)	15	15	LAQ,SAQ,BAQ.MCQ
11	Birth control and MTP	15	15	SAQ,BAQ.MCQ
12	Miscellaneous	5	5	SAQ,BAQ.MCQ
	<b>Total</b>	100	100	

**Note:**

SAQ - Short Answer Question (5 marks)

LAQ - Long Answer Question (10 marks)

BAQ - Brief Answer Question (2 marks)

MCQ - Multiple Choice Question (1 mark)

**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH**  
**Department of Obstetrics & Gynaecology**  
**Syllabus According to CBME Curriculum-Phase III MBBS Part-I**

No	Competency the Student should be able to	Domain K/S/A/ C	Level K/KH/ SH/P	Core (Y/N)	Teaching Learning Methods	Hours
OG 9.1	Classify, define and discusses the aetiology and management of abortions including threatened, incomplete, inevitable, missed and septic	K	KH	Y	SDL	1
OG 13.1	Enumerate and discuss the physiology of normal labor, mechanism of labour in occipito - anterior presentation, monitoring of labour including partogram, conduct of labour, pain relief, principles of induction and acceleration of labour, management of third stage of labour.	K	KH	Y	SGD	4
OG 14.1	Enumerate and discuss the diameters of maternal pelvis and types.	K	KH	Y	SGD	1
OG 14.2	Discuss the mechanism of normal labor, define and describe obstructed labor, its clinical features; prevention; and Management.	K	KH	Y	SGD	2
OG 13.1	Enumerate and discuss the physiology of normal labor, mechanism of labour in occipito - anterior presentation, monitoring of labour including partogram, conduct of labour, pain relief, principles of induction and acceleration of labour, management of third stage of labour.	K	KH	Y	SDL	1
OG 14.3	Describe and discuss rupture uterus, causes, diagnosis and Management.	K	KH	Y	SGD	1

OG14.4	Describe and discuss the classification; diagnosis; management of abnormal labour.	K	KH	Y	SGD	2
OG14.2	Discuss the mechanism of normal labor, define and describe obstructed labor, its clinical features; prevention; and management.	K	KH	Y	SDL	1
OG12.1	Define, classify and describe the etiology and pathophysiology, early detection, investigations, principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.	K	KH	Y	SGD	5
OG10.1	Define, classify and describe the aetiology, pathogenesis, clinical featured, ultra sonography, differential diagnosis and management of antepartum haemorrhage in pregnancy.	K	KH	Y	Lecture	3
OG10.2	Enumerate the indications and describe the appropriate use of blood and blood products, their complications and management.	K	KH	Y	SGD	2
OG10.1	Define, classify and describe the aetiology, pathogenesis, clinical featured, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy.	k	KH	Y	SDL	1
OG11.1	Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies.	K	KH	Y	Lecture	3
OG12.1	Define, classify and describe the etiology and pathophysiology, early detection, investigations, principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.	K	KH	Y	Lecture	5

OG12.2	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of anemia in pregnancy.	K	KH	Y	Lecture	3
OG12.1	Define, classify and describe the etiology and pathophysiology, early detection, investigations, principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.	K	KH	Y	SDL	1
OG12.2	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of anemia in pregnancy.	K	KH	Y	Integrated	2
OG12.4	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy.	K	KH	Y	Lecture	3
OG12.7	Describe and discuss screening, risk factors, management of mother and newborn with HIV.	K	KH	Y	SGD	2
OG12.1	Define, classify and describe the etiology and pathophysiology, early detection, investigations, principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.	K	KH	Y	Integrated	2
OG15.1	Enumerate and describe the indications and steps of common obstetrics procedures, technique and complications: Episiotomy, vacuum extraction: low forceps: Caesarean section, assisted breech delivery: external cephalic version: cervical cerclage.					

OG21.1	Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications, selections of patients, side effects and failure rate including Ocs, male contraception, emergency contraception and IUCD.	K	KH	Y	Lecture	3
OG31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus.	K	KH	Y	Lecture	5
OG12.3	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of diabetes diseases in pregnancy.					



**Phase III MBBS Part I  
Clinics**

<b>Number</b>	<b>Competency the Student should be able to</b>	<b>Domain K/S/A/C</b>	<b>Level K/KH/SH/P</b>	<b>Core (Y/N)</b>	<b>Teaching Learning Methods</b>
OG 35.2	Arrive at a logical provisional diagnosis after examination.	K/S	SH	Y	Bed Side
OG 35.3	Recognize situations, which call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment.	K/S	SH	Y	Bed Side
OG 35.4	Demonstrate interpersonal and communications skills befitting a physician in order to discuss illness and its outcome with patient and family.	A/C	SH	Y	Bed Side
OG 35.5	Determine gestational age, EDD and obstetric formula.	K/S	SH	Y	Bed Side
OG 35.6	Demonstrate ethical behavior in all aspects of medical practice.	A/C	SH	Y	Bed Side
OG 35.7	Obtain informed consent for any examination / procedure.	S	SH	Y	Bed Side
OG 35.8	Write a complete case record with all necessary details.	S	SH	Y	Bed Side
OG 35.9	write a proper discharge summary with all relevant information	S	SH	Y	Bed Side
OG 35.10	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.	S	SH	Y	Bed Side
OG 35.11	Demonstrate the correct use of appropriate universal precautions for self - protection against HIV and hepatitis and counsel patients.	S	SH	Y	Bed Side

OG 36.1	Plan and institute a line of treatment, which is need based, cost effective and appropriate for common conditions taking into consideration (a) Patient (b) Disease (c) Socio - economic status (d) Institution/ Governmental guidelines	K/S	SH	Y	Bed Side
OG 36.2	Organize antenatal, postnatal, well-baby and family welfare clinics	K/S	SH	Y	Bed Side
OG 23.1	Describe and discuss the physiology of puberty, features of abnormal puberty, common problems and their management	K	KH	Y	Bed Side
OG 13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin and counsel on methods of safe abortion.	S	SH	Y	Skill lab
OG 15.2	Observe and assist in the performance of an episiotomy and demonstrate the correct suturing technique of an episiotomy in a simulated environment. Observe/Assist in operative obstetrics cases - including - CS, Forceps, vacuum extraction, and breech delivery.	S	SH	Y	Skill lab
OG 19.1	Describe and discuss the physiology of puerperium, its complications, diagnosis and management, counseling for contraception, puerperal sterilization.	K	KH	Y	Skill lab
OG 35.1	Obtain a logical sequence of history, and perform a humane and through clinical examination, excluding internal examinations (per rectal and per- vaginal	K/S	KH	Y	Skill lab
OG 35.17	Demonstrate the correct technique of urinary catheterization in a simulated / supervised environment.	S	SH	Y	Skill lab
OG 17.2	Counsel in a simulated environment, care of the breast, importance and the technique of breast feeding.	S/A/C	SH	Y	Skill lab

**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH**

**DEPARTMENT OF Obstetrics & Gynaecology**

**Syllabus According to CBME Curriculum - Phase III MBBS Part - II**

<b>Number</b>	<b>Competency the Student should be able to</b>	<b>Domain K/S/A/C</b>	<b>Level K/KH/SH/P</b>	<b>Core (Y/N)</b>	<b>Teaching Learning Methods</b>	<b>Hours</b>
OG30.1	Describe and discuss the etiopathogenesis; clinical features; differential diagnosis, investigations, management, PCOS.	K	KH	Y	Lecture	2
OG30.2	Enumerate the causes and describe the investigations and management of hyper androgenism.	K	KH	N	Lecture	2
OG12.4	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy.	K	KH	Y	Integrated	2
OG28.1	Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of infertility - methods of tubal patency, ovulation induction, assisted reproductive techniques.	K	KH	Y	Lecture	4
OG28.2	Enumerate the assessment and restoration of tubal Patency.	K	KH	N	Lecture	2
OG28.3	Describe the principles of ovulation induction.	K	KH	Y	Lecture	3
OG28.4	Enumerate the various Assisted Reproduction Techniques.	K	KH	N	Lecture	2
OG12.6	Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of liver disease in pregnancy.	K	KH	Y	Integrated	2

OG13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy.	K/S	KH	Y	Lecture	4
OG13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy.	K/S	KH	Y	SDL	1
OG13.1	Enumerate and discuss the physiology of normal labor, mechanism of labor in occipito- anterior presentation; monitoring of labor including partogram; conduct of labor, pain relief; principles of induction and acceleration of labor; management of third stage of labor.	K/S	KH	Y	Lecture	3
OG27.4	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease.	K	KH	Y	SGD	2
OG12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of iso immunization in pregnancy.	K	KH	Y	Integrated	2
OG29.1	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, principles of management , complications of fibroid uterus.	K	KH	Y	Lecture	4
OG13.1	Enumerate and discuss the physiology of normal labor, mechanism of labor in occipito- anterior presentation; monitoring of labor including partogram; conduct of labor, pain relief; principles of induction and acceleration of labor; management of third stage of labor.	K/S	KH	Y	SDL	1
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well - being.	K/S	KH	Y	SGD	2

OG9.1	Classify, define and discusses the aetiology and management of abortions including threatened, incomplete, inevitable, missed and septic	K	KH	Y	SGD	2
OG9.3	Discuss the aetiology, clinical features, differential diagnosis of acute abdomen in early pregnancy (with a focus on ectopic pregnancy) and enumerate the principles of medical and surgical management.	K	KH	Y	SGD	2
OG15.1	Enumerate and describe the indications and steps of common obstetrics procedures, technique and complications: Episiotomy, vacuum extraction: low forceps: Caesarean section, assisted breech delivery: external cephalic version: cervical cerclage.	S	KH	Y	Lecture	5
OG15.1	Enumerate and describe the indications and steps of common obstetrics procedures, technique and complications: Episiotomy, vacuum extraction: low forceps: Caesarean section, assisted breech delivery: external cephalic version: cervical cerclage.	S	KH	Y	SGD	13
OG9.1	Classify, define and discusses the aetiology and management of abortions including threatened, incomplete, inevitable, missed and septic	K	KH	Y	SDL	1
OG12.5	Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of urinary tract infections in pregnancy.	K	KH	Y	Lecture	1
OG12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of iso immunization in pregnancy.	K	KH	Y	SGD	2
OG13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy.	K	KH	Y	Integrated	2

OG12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of iso immunization in pregnancy.	K	KH	Y	SDL	1
OG19.1	Describe and discuss the physiology of puerperium, its complications, diagnosis and management; counseling for contraception, puerperal sterilization.	K	KH	Y	SGD	2
OG21.1	Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including Ocs, male contraception, emergency contraception and IUCD.	K	KH	Y	Lecture	8
OG33.2	Describe the principles of management including surgery and radiotherapy of Benign, Pre- malignant (CIN) and Malignant Lesions of the Cervix.	K	KH	Y	Lecture	10
OG33.4	Enumerate the methods to prevent cancer of cervix including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine (VILI), pap smear and colposcopy.	K	KH	Y	Lecture	2
OG33.1	Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer.	K/S	KH	Y	Lecture	1
OG33.2	Describe the principles of management including surgery and radiotherapy of Benign, Pre- malignant (CIN) and Malignant Lesions of the Cervix.	K	KH	Y	SDL	1
OG25.1	Describe and discuss the causes of primary and secondary amenorrhea, its investigation and the principles of management.	K	KH	Y	Integrated	2
OG34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer.	K	KH	Y	Lecture	8

OG34.2	Describe and discuss the etiology , pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principles of management including staging laparotomy.	K	KH	Y	Lecture	8
OG32.2	Enumerate the causes of postmenopausal bleeding and describe its management.	K	KH	Y	Lecture	1
OG34.2	Describe and discuss the etiology , pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principles of management including staging laparotomy.	K/S	KH	Y	SDL	1
OG34.2	Describe and discuss the etiology , pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principles of management including staging laparotomy.	K/S	KH	Y	Integrated	2
OG9.5	Describe the etiopathology, impact on maternal and fetal health and principles of management of hyperemesis gravidarum.	K	KH	Y	SGD	2
OG34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer.	K	KH	Y	SDL	1
OG10.1	Define, classify and describe the aetiology, pathogenesis, clinical featured, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy.	K	KH	Y	SGD	2
OG11.1	Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies.	K	KH	y	SGD	2
OG11.1	Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies.	K	KH	Y	SDL	1



OG12.1	Define, classify and describe the etiology and pathophysiology, early detection, investigations, principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.	K	KH	Y	SGD	4
OG27.2	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease.	K	KH	Y	Integrated	2
OG27.2	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease.	K	KH	Y	SDL	1
OG12.2	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of anemia in pregnancy.	K	KH	Y	SGD	2
OG12.3	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of diabetes diseases in pregnancy.	K	KH	Y	SGD	2
OG12.4	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy.	K	KH	Y	SGD	2
OG12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of iso immunization in pregnancy.	K	KH	Y	SGD	2

OG13.1	Enumerate and discuss the physiology of normal labor, mechanism of labour in occipito - anterior presentation, monitoring of labour including partogram, conduct of labour, pain relief, principles of induction and acceleration of labour, management of third stage of labour.	K	KH	Y	SGD	6
OG16.3	Describe and discuss causes, clinical features, diagnosis, investigations, monitoring of fetal well - being, including ultrasound and fetal Doppler, principles of management, prevention and counseling in intrauterine growth retardation.	K	KH	Y	Integrated	2
OG13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy.	K	KH	Y	SGD	6
OG13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy.	K	KH	Y	SDL	1
OG14.1	Enumerate and discuss the diameters of maternal pelvis and types.	K	KH	Y	SGD	2
OG14.2	Discuss the mechanism of normal labor, define and describe obstructed labor, its clinical features; prevention; and management.	K	KH	Y	SGD	2
OG14.3	Describe and discuss rupture uterus, causes, diagnosis and management.	K	KH	Y	SGD	2
OG12.7	Describe and discuss screening, risk factors, management of mother and newborn with HIV.	K	KH	Y	Integrated	2
OG14.4	Describe and discuss the classification; diagnosis; management of abnormal labour.	K	KH	Y	SGD	2

OG15.1	Enumerate and describe the indications and steps of common obstetrics procedures, technique and complications: Episiotomy, vacuum extraction: low forceps: Caesarean section, assisted breech delivery: external cephalic version: cervical cerclage.	K	KH	Y	SGD	2
OG30.1	Describe and discuss the etiopathogenesis; clinical features; differential diagnosis, investigations, management, complications of PCOS.	K	KH	Y	Integrated	2
OG16.1	Enumerate and discuss causes, prevention, diagnosis, management, appropriate use of blood and blood products in postpartum haemorrhage.	K	KH	Y	SGD	2
OG16.3	Describe and discuss causes, clinical features, diagnosis, investigations, monitoring of fetal well - being, including ultrasound and fetal Doppler, principles of management, prevention and counseling in intrauterine growth retardation.	K	KH	Y	SGD	2
OG17.3	Describe and discuss the clinical features, diagnosis and management of mastitis and breast abscess.	K	KH	Y	SGD	2
OG19.1	Describe and discuss the physiology of puerperium, Its complications, diagnosis and management; counseling for contraception. Puerperal sterilization.	K	KH	Y	SGD	2
OG19.1	Describe and discuss the physiology of puerperium, Its complications, diagnosis and management; counseling for contraception. Puerperal sterilization.	K	KH	Y	SDL	1
OG27.1	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease.	K	KH	Y	Integrated	2

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	SGD	2
OG24.1	Define, classify and discuss abnormal uterine bleeding, its aetiology, clinical features, investigations, diagnosis and management.	K	KH	Y	SGD	2
OG26.1	Describe and discuss the etiopathogenesis, clinical features; investigations and implications on health and fertility and management of endometriosis and adenomyosis	K	KH	Y	SGD	4
OG18.3	Describe and discuss the diagnosis of birth asphyxia	k	KH	v	Integrated	2
OG29.1	Describe and discuss the etiology; pathology; clinical features; differential diagnosis, investigations, principles of management, complications of fibroid uterus.	K	KH	Y	SGD	2
OG29.1	Describe and discuss the etiology; pathology; clinical features; differential diagnosis, investigations, principles of management, complications of fibroid uterus.	K	KH	Y	SDL	1
OG31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus.	K	KH	Y	SGD	2
OG31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus.	K	KH	Y	SDL	1
OG9.3	Discuss the aetiology, clinical features, differential diagnosis of acute abdomen in early pregnancy ( with a focus on ectopic pregnancy) and enumerate the principles of medical and surgical ,management.	K	KH	Y	Integrated	2

OG33.4	Enumerate the methods to prevent cancer of cervix including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine (VILI), pap smear and colposcopy.	K	KH	Y	SGD	2
OG33.1	Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer.	K	KH	Y	SGD	2
OG33.1	Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer.	K	KH	Y	Integrated	2
OG31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus.	K	KH	Y	SDL	1
OG34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer.	K	KH	Y	SGD	2
OG34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer.	K	KH	Y	SDL	1
OG34.2	Describe and discuss the etiology , pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principles of management including staging laparotomy.	K	KH	Y	SGD	2
OG34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer.	K	KH	Y	Integrated	2
OG34.3	Describe and discuss the etiology , pathology, classification, staging , clinical features, differential diagnosis, investigations and management of gestational trophoblastic disease.	K	KH	Y	SGD	2

**Phase III MBBS Part II  
Clinics**

Number	Competency the Student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Teaching Learning Methods
OG 9.2	Describe the steps and observe/ assist in the performance of an MTP evacuation.	S	SH	Y	Bed Side
OG 10.1	Define, classify and describe the aetiology, pathogenesis, clinical features, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy.	K	KH	Y	Bed Side
OG 11.1	Describe the etiopathology, clinical features; diagnosis and investigations, complications, principles of management of multiple pregnancies.	K	KH	Y	Bed Side
OG 12.1	Define , classify and describe the etiology and pathophysiology, early detection, investigations; principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.	K	KH	Y	Bed Side
OG 12.2	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and fetus and the management during pregnancy and labour, and complications of anemia in pregnancy.	K	KH	Y	Bed Side
OG 12.3	Define, classify and describe the etiology, pathophysiology , diagnosis, investigations, criteria, adverse effects on the mother and fetus and the management during pregnancy and labour, and complications of diabetes in pregnancy.	K	KH	Y	Bed Side

OG 12.4	Define, classify and describe the etiology, pathophysiology , diagnosis, investigations, criteria, adverse effects on the mother and fetus and the management during pregnancy and labour, and complications of heart diseases in pregnancy.	K	KH	Y	Bed Side
OG 12.5	Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of urinary tract infections in pregnancy.	K	KH	Y	Bed Side
OG 12.6	Describe the clinical features, detection, effect of pregnancy on the disease and impact of the disease on pregnancy complications and management of liver diseases in pregnancy.	K	KH	Y	Bed Side
OG 12.7	Describe and discuss screening, risk factors, management of mother and newborn with HIV	K	KH	Y	Bed Side
OG 12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of iso immunization in pregnancy.	K	KH	Y	Bed Side
OG 13.2	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and postdated pregnancy.	K/S	KH	Y	Bed Side
OG 13.3	Observe/ assist in the performance of an artificial rupture of membranes	S	SH	Y	Bed Side
OG 14.1	Enumerate and discuss the diameters of maternal pelvis and types	K	KH	Y	Bed Side
OG 14.2	Discuss the mechanism of normal labor, Define and describe obstructed labour, its clinical features, prevention, and management.	K	KH	Y	Bed Side
OG 14.3	Describe and discuss rupture uterus, causes, diagnosis and management.	K	KH	Y	Bed Side



OG 14.4	Describe and discuss the classification; diagnosis; management of abnormal labour.	K	KH	Y	Bed Side
OG 16.1	Enumerate and discuss causes, prevention, diagnosis, management, appropriate use of blood and blood products in postpartum haemorrhage.	K	KH	Y	Bed Side
OG 16.2	Describe and discuss uterine inversion – causes, prevention, diagnosis and management.	K	KH	Y	Bed Side
OG 16.3	Describe and discuss causes, clinical features, diagnosis, investigations, monitoring of fetal well-being, including ultrasound and fetal Doppler, principles of management, prevention and counseling in intrauterine growth retardation.	K/S	SH	Y	Bed Side
OG 21.1	Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications, selection of patients, side effects and failure rate including Ocs, male contraception, emergency contraception and IUCD.	K	KH	Y	Bed Side
OG 22.2	Describe and discuss the etiology (with special emphasis on Candida, T.vaginalis, bacterial vaginosis), characteristics, clinical diagnosis, investigations, genital hygiene, management of common causes and the syndromic management.	K	KH	Y	Bed Side
OG 28.1	Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of infertility - methods of tubal patency, ovulation induction, assisted reproductive techniques.	K	KH	Y	Bed Side
OG 28.2	Enumerate the assessment and restoration of tubal latency.	K	K	N	Bed Side
OG 28.3	Describe the principles of ovulation induction.	K	KH	Y	Bed Side

OG 28.4	Enumerate the various Assisted Reproduction Techniques.	K	K	N	Bed Side
OG 29.1	Describe and discuss the etiology; pathology; clinical features; differential diagnosis, investigations, principles of management, complications of fibroid uterus.	K/A/C	KH	Y	Bed Side
OG 31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus.	K/S	KH	Y	Bed Side
OG 32.1	Describe and discuss the etiology, classification, clinical features, diagnosis, principles of management and preventive aspects of prolapse of uterus.	K	KH	Y	Bed Side
OG 32.2	Enumerate the causes of postmenopausal bleeding and describe its management.	K	KH	Y	Bed Side
OG 33.1	Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer.	K/S	KH	Y	Bed Side
OG 33.2	Describe the principles of management including surgery and radiotherapy of Benign, Pre- malignant (CIN) and Malignant Lesions of the Cervix.	K	KH	Y	Bed Side
OG 33.4	Enumerate the methods to prevent cancer of cervix including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine (VILI), pap smear and coposcopy.	K	K	Y	Bed Side
OG 34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer.	K	KH	Y	Bed Side
OG 36.3	Demonstrate the correct technique of punch biopsy of uterus in a simulated / supervised environment.	S	SH	Y	Bed Side

OG 37.1	Observe and assist in the performance of a Caesarean section	K/S/A/C	SH	Y	Bed Side
OG 37.2	Observe and assist in the performance of Laparotomy	K/S/A/C	SH	Y	Bed Side
OG 37.3	Observe and assist in the performance of Hysterectomy – abdominal /vaginal.	K/S/A/C	SH	Y	Bed Side
OG 37.4	Observe and assist in the performance of Dilatation & Curettage (D&C)	K/S/A/C	SH	Y	Bed Side
OG 37.5	Observe and assist in the performance of Endometrial aspiration -endocervical curettage(EA - ECC)	K/S/A/C	SH	Y	Bed Side
OG 37.6	Observe and assist in the performance of outlet forceps application of vacuum and breech delivery.	K/S/A/C	SH	Y	Bed Side
OG 37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion	K/S/A/C	SH	Y	Bed Side
OG 38.1	Laparoscopy	K/S/A/C	SH	Y	Bed Side
OG 38.2	Hysteroscopy	K/S/A/C	SH	Y	Bed Side
OG 38.3	Lap sterilization	K/S/A/C	SH	Y	Bed Side
OG 38.4	Assess the need for and issue proper medical certificates to patients for various purposes	K/S/A/C	SH	Y	Bed Side
OG 8.5	Describe and demonstrate pelvic assessment in a model	K/S	SH	Y	Skill lab
OG 13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin and counsel on methods of safe abortion.	S	SH	Y	Skill lab

OG 15.2	Observe and assist in the performance of an episiotomy and demonstrate the correct suturing technique of an episiotomy in a simulated environment. Observe/ Assist in operative obstetric cases-including - CS, Forceps, Vacuum extraction , and breech delivery.	S	SH	Y	Skill lab
OG 18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment.	S	SH	Y	Skill lab
OG 19.2	Counsel in a simulated environment, contraception and puerperal sterilization	S/A/C	SH	Y	Skill lab
OG 20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy.	S/A/C	SH	Y	Skill lab
OG 35.11	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy.	S	SH	Y	Skill lab
OG 35.12	Obtain a PAP smear in a stimulated environment	S	SH	Y	Skill lab
OG 35.13	Demonstrate the correct technique to perform artificial rupture of membranes in a simulated/supervised environment.	S	SH	Y	Skill lab
OG 35.14	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment.	S	SH	Y	Skill lab
OG 35.15	Demonstrate the correct technique to insert and remove an IUD in a simulated / supervised environment.	S	SH	Y	Skill lab
OG 35.16	Diagnose and provide emergency management of antepartum and postpartum haemorrhage in a simulated/ guided environment.	S	SH	Y	Skill lab



**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH**  
**DEPARTMENT OF OPHTHALMOLOGY**

**COMPETENCY BASED UNDERGRADUATE CURRICULUM (C B M E)**

**GOAL**

The goal is to mould the student into a competent clinician with compassion and acquire knowledge and skills to provide preventive, promotive, curative, palliative and holistic eye care. The student should be a good communicator with patients, families, colleagues and community. The student should recognize the key importance of ocular health in our country.

**OBJECTIVES**

1. The student should possess adequate knowledge, skills, attitude regarding examination and management of ophthalmology disorders
2. Function appropriately and effectively as a clinician in correlating history and symptoms of patients to diagnose ocular diseases and advising proper investigations.
3. Take decisions for the patient's and patient's family's best interest including referral to a senior consultant if there is any difficulty.
4. Possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of Ophthalmology.
5. Be familiar with the essential National Eye Health Programs, including National Programmes for Control of Blindness.

**KNOWLEDGE AND SKILLS**

The student will be able to

1. Demonstrate knowledge about structure and function of the eye and orbit
2. Demonstrate Visual acuity assessment and understand the principles of refraction and diagnose refractive errors
3. Demonstrate knowledge and take detailed history, perform full ocular examination including anterior and posterior segment of eye and neuro ophthalmology and make clinical diagnosis and competently manage the patient
4. Perform relevant investigative and therapeutic procedures for the patient
5. Interpret important imaging and laboratory results
6. Plan and advise measures for the prevention of eye diseases and visual disability
7. Manage ocular emergencies efficiently
8. Integrate Ocular diseases with systemic disorders
9. Actively participate in Community eye camps
10. Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities
11. Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based ophthalmology.

# GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

## DEPARTMENT OF OPHTHALMOLOGY

### UG Classes Division

Topic	Large Group Lectures	Small Group Lectures / Tutorial / Seminar		Number of hours	SDL
		Small group lectures / Tutorial / seminar	Integration classes		
Topic: Visual Acuity Assessment Number of Competencies: (05)	OP1.1 OP1.2 OP1.4	OP1.2.2 OP1.2.3 OP1.2.4	AN41.1 PY10.17	5	OP1.3
Topic: Lids and Adnexa, Orbit Number of Competencies: (06)	OP2.1.1 OP2.1.2 OP2.1.3	OP2.4 OP2.7.2 OP2.5 OP2.8.1 OP2.6.1 OP2.8.2 OP2.6.2 OP2.8.3 OP2.7.1		10	OP2.1 OP2.2 OP2.3
Topic: Conjunctiva Number of Competencies: (05)	OP3.3.1 OP3.3.2 OP3.4 OP3.5 OP3.6	OP3.7		6	OP3.1 OP3.2 OP3.8 OP3.9
Topic: Corneas Number of Competencies: (08)	OP4.1.1 OP4.1.2 OP4.1.3 OP4.2 OP4.5.2	OP4.3 OP4.7 OP4.4.1 OP4.9.1 OP4.4.2 OP4.9.2 OP4.5 OP4.6.1 OP4.6.2 OP4.6.3		13	OP4.8 OP4.10
Topic: Sclera Number of competencies: (02)		OP5.1 OP5.2 OP5.2.2		2	
Topic: Iris and Anterior chamber Number of Competencies (09)	OP6.1 OP6.8.1 OP6.2 OP6.9 OP6.3.1 OP6.5 OP6.7.1 OP6.7.2 OP6.7.3 OP6.7.4 OP6.7.5 (R) OP6.7.9 OP6.7.10	OP6.3.2 OP6.4.1 OP6.4.2 OP6.5 (R) OP6.7.5 OP6.7.6 OP6.7.6 (R) OP6.7.7 OP6.7.8 OP6.7.8 (R) OP6.8.2 OP6.8.3 OP6.9.2	AN41.2 PY10.20	20	
Topic: Lens Number of Competencies: (03)	OP7.2.5 OP7.2.6 OP7.4.1 OP7.4.2 OP7.4.5	OP7.1 OP7.2.1 OP7.2.2 OP7.2.3 OP7.2.4 OP7.2.7		9	OP7.3.1



Topic: Retina & optic Nerve Number of Competencies (10)	OP8.5.1 OP8.5.2 OP8.5.4	OP8.1 OP8.2.1 OP8.2.2 OP8.2.3 OP8.3.1 OP8.4	PA36.1 PY10.18 PY10.19 AN30.5 AN31.3	13	OP8.3.2
Topic: Miscellaneous Number of Competencies (16)	OP1.5 OP9.4.1 OP7.3.2 OP9.5.2 OP8.5.3 OP9.5.3 OP9.2	OP2.3.2 OP9.4.2 OP6.7.5 OP9.4.3 OP7.4.3 OP9.4.4 OP7.4.4 OP9.5.1 OP9.3	AN31.5 AN41.3 IM24.15 PH1.58	20	OP9.1
<b>TOTAL</b>	<b>44</b>	<b>60</b>	<b>13</b>	<b>117</b>	<b>13</b>

# GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

## DEPARTMENT OF OPHTHALMOLOGY

### Lectures

Sl no	Number	Competency	Number of Hours
<b><u>Topic: Visual Acuity Assessment</u></b>			
1.	OP1.1	<ul style="list-style-type: none"> <li>Describe the physiology of vision</li> </ul>	1
2.	OP1.2	<ul style="list-style-type: none"> <li>Define, classify and describe the types and methods of correcting refractive error</li> </ul>	1
3.	OP1.4	<ul style="list-style-type: none"> <li>Enumerate the indications and describe the principles of refractive surgery</li> </ul>	1
<b><u>Topic: Lids and Adnexa, Orbit</u></b>			
4.	OP2.1.1 OP2.1.2 OP2.1.3	<ul style="list-style-type: none"> <li>Enumerate the causes, describe and discuss the aetiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa including Hordeolum externum/ internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag, lagophthalmos</li> </ul>	3
<b><u>Topic: Conjunctiva</u></b>			
05.	OP3.3.1 OP3.3.2	<ul style="list-style-type: none"> <li>Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications. and management of various causes of conjunctivitis</li> </ul>	2
06.	OP3.4	<ul style="list-style-type: none"> <li>Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of trachoma</li> </ul>	1
07.	OP3.5	<ul style="list-style-type: none"> <li>Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of vernal catarrh</li> </ul>	1
08.	OP3.6	<ul style="list-style-type: none"> <li>Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of pterygium</li> </ul>	1
<b><u>Topic: Cornea</u></b>			
09.	OP4.1.1 OP4.1.2 OP4.1.3	<ul style="list-style-type: none"> <li>Enumerate, describe and discuss the types and causes of corneal ulceration.</li> </ul>	3
10.	OP4.2	<ul style="list-style-type: none"> <li>Enumerate and discuss the differential diagnosis of infective keratitis</li> </ul>	1
11	OP4.5.2	<ul style="list-style-type: none"> <li>Enumerate the causes of corneal blindness</li> </ul>	1
<b><u>Topic: Iris and Anterior chamber</u></b>			
12.	OP6.1	<ul style="list-style-type: none"> <li>Describe clinical signs of intraocular inflammation and enumerate the features that distinguish granulomatous from non-granulomatous inflammation</li> </ul>	1
13.	OP6.2	<ul style="list-style-type: none"> <li>Identify and distinguish acute iridocyclitis from chronic iridocyclitis</li> </ul>	1
14.	OP6.3.1	<ul style="list-style-type: none"> <li>Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations</li> </ul>	1

15.	OP6.5	<ul style="list-style-type: none"> <li>Describe and discuss the angle of the anterior chamber and its clinical correlates</li> </ul>	1
16.	OP6.7.1 OP6.7.2 OP6.7.3 OP6.7.4 OP6.7.5(R) OP6.7.9 OP6.7.10	<ul style="list-style-type: none"> <li>Enumerate and discuss the aetiology, the clinical distinguishing features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above conditions.</li> </ul>	7
17.	OP6.8.1	<ul style="list-style-type: none"> <li>Enumerate and choose the appropriate investigation for patients with conditions affecting the Uvea</li> </ul>	1
18.	OP6.9	<ul style="list-style-type: none"> <li>Choose the correct local and systemic therapy for conditions of the anterior chamber and enumerate their indications, adverse events and interactions</li> </ul>	1
<b><u>Topic – Lens</u></b>			
19.	OP7.2.5 OP7.2.6	<ul style="list-style-type: none"> <li>Describe and discuss the aetio-pathogenesis, stages of maturation and complications of cataract</li> </ul>	2
20.	OP7.4.1 OP7.4.2 OP7.4.5	<ul style="list-style-type: none"> <li>Enumerate the types of cataract surgery and describe the steps, intra-operative and post-operative complications of extracapsular cataract extraction surgery.</li> </ul>	3
Topic: Retina & optic Nerve			
21.	OP8.5.1 OP8.5.2 OP8.5.4	<ul style="list-style-type: none"> <li>Describe and discuss the correlative anatomy, aetiology, clinical manifestations, diagnostic tests, imaging and management of diseases of the optic nerve and visual pathway</li> </ul>	3
<b><u>Topic – Miscellaneous</u></b>			
22.	OP1.5 OP7.3.2 OP8.5.3 OP9.2 OP9.4.1 OP9.5.2 OP9.5.3	<ul style="list-style-type: none"> <li>Define, enumerate the types and the mechanism by which strabismus leads to amblyopia.</li> <li>Demonstrate the correct technique of ocular examination in a patient with a cataract.</li> <li>Describe and discuss the correlative anatomy, aetiology, clinical manifestations, diagnostic tests, imaging and management of diseases of the optic nerve and visual pathway.</li> <li>Classify, enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus.</li> <li>Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020).</li> <li>Describe the evaluation and enumerate the steps involved in the stabilisation, initial management and indication for referral in a patient with ocular injury.</li> </ul>	7
<b>Total</b>			<b>44</b>

# GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

## DEPARTMENT OF OPHTHALMOLOGY

### Small group teaching / Tutorial / Seminar

Sl no	Number	Competency	Number of hours
<b><u>Topic: Visual Acuity Assessment</u></b>			
1	OP1.2.2 OP1.2.3 OP1.2.4	Define, classify and describe the types and methods of correcting refractive error	3
<b><u>Topic: Lids and Adnexa, Orbit</u></b>			
2	OP2.4	<ul style="list-style-type: none"> <li>Describe the aetiology, clinical presentation. Discuss the complications and management of orbital cellulitis</li> </ul>	1
3	OP2.5	<ul style="list-style-type: none"> <li>Describe the clinical features on ocular examination and management of a patient with cavernous sinus thrombosis</li> </ul>	1
4	OP2.6.1 OP2.6.2	<ul style="list-style-type: none"> <li>Enumerate the causes and describe the differentiating features, and clinical features and management of proptosis</li> </ul>	2
5	OP2.7.1 OP2.7.2	<ul style="list-style-type: none"> <li>Classify the various types of orbital tumours. Differentiate the symptoms and signs of the presentation of various types of ocular tumours</li> </ul>	2
6	OP2.8.1 OP2.8.2 OP2.8.3	<ul style="list-style-type: none"> <li>List the investigations helpful in diagnosis of orbital tumors. Enumerate the indications for appropriate referral</li> </ul>	3
<b><u>Topic: Conjunctiva</u></b>			
7	OP3.7	<ul style="list-style-type: none"> <li>Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management of symblepharon</li> </ul>	1
<b><u>Topic: Cornea</u></b>			
8	OP4.3	<ul style="list-style-type: none"> <li>Enumerate the causes of corneal edema</li> </ul>	1
9	OP4.4.1 OP4.4.2	<ul style="list-style-type: none"> <li>Enumerate the causes and discuss the management of dry eye</li> </ul>	2
10	OP4.5	<ul style="list-style-type: none"> <li>Enumerate the causes of corneal blindness</li> </ul>	1
11	OP4.6.1 OP4.6.2 OP4.6.3	<ul style="list-style-type: none"> <li>Enumerate the indications and the types of keratoplasty</li> </ul>	3
12	OP4.7	<ul style="list-style-type: none"> <li>Enumerate the indications and describe the methods of tarsorrhaphy</li> </ul>	1
13	OP4.9.1 OP4.9.2	<ul style="list-style-type: none"> <li>Describe and discuss the importance and protocols involved in eye donation and eye banking</li> </ul>	2

<b><u>Topic – Sclera</u></b>			
14	OP5.1	<ul style="list-style-type: none"> <li>Define, enumerate and describe the aetiology, associated systemic conditions, clinical features complications indications for referral and management of episcleritis</li> </ul>	1
15	OP5.2.1 OP5.2.2	<ul style="list-style-type: none"> <li>Define, enumerate and describe the aetiology, associated systemic conditions, clinical features, complications, indications for referral and management of scleritis</li> </ul>	2
<b><u>Topic: Iris and Anterior chamber</u></b>			
16	OP6.3.2 OP6.4.1 OP6.4.2 OP6.5 (R) OP6.7.5 OP6.7.6 OP6.7.6(R) OP6.7.7 OP6.7.8 OP6.7.8(R) OP6.8.2 OP6.8.3 OP6.9.2	<ul style="list-style-type: none"> <li>Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations.</li> <li>Describe and distinguish hyphema and hypopyon.</li> <li>Describe and discuss the angle of the anterior chamber and its clinical correlates.</li> <li>Enumerate and discuss the aetiology, the clinical distinguishing features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above conditions.</li> <li>Enumerate and choose the appropriate investigation for patients with conditions affecting the Uvea.</li> <li>Choose the correct local and systemic therapy for conditions of the anterior chamber and enumerate their indications, adverse events and interactions.</li> </ul>	13
<b><u>Topic – Lens</u></b>			
17	OP7.1 OP7.2.1 OP7.2.2 OP7.2.3 OP7.2.4 OP7.2.7	<ul style="list-style-type: none"> <li>Describe the surgical anatomy and the metabolism of the lens</li> <li>Describe and discuss the aetio-pathogenesis, stages of maturation and complications of cataract</li> </ul>	6
<b><u>Topic – Retina and Optic Nerve</u></b>			
18	OP8.1	<ul style="list-style-type: none"> <li>Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina</li> </ul>	1
19	OP8.2.1 OP8.2.2 OP8.2.3	<ul style="list-style-type: none"> <li>Enumerate the indications for laser therapy in the treatment of retinal diseases (including retinal detachment, retinal degenerations, diabetic retinopathy &amp; hypertensive retinopathy)</li> </ul>	3
20	OP8.3.1	<ul style="list-style-type: none"> <li>Demonstrate the correct technique of a fundus examination and describe and distinguish the fundoscopic features in a normal condition and in conditions causing an abnormal retinal exam.</li> </ul>	1

21	OP8.4	<ul style="list-style-type: none"> <li>Enumerate and discuss treatment modalities in management of diseases of the retina.</li> </ul>	1
<b><u>Topic Miscellaneous</u></b>			
22	OP2.3.2 OP6.7.5 OP7.4.3 OP7.4.4	<ul style="list-style-type: none"> <li>Demonstrate under supervision clinical procedures performed in the lid including: bells phenomenon, assessment of entropion/ectropion, perform the regurgitation test of lacrimal sac. massage technique in cong. dacryocystitis, and trichiatic cilia removal by epilation</li> <li>Enumerate and discuss the aetiology, the clinical distinguishing features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above conditions.</li> <li>Enumerate the types of cataract surgery and describe the steps, intra-operative and post-operative complications of extracapsular cataract extraction surgery</li> </ul>	4
23	OP9.3	<ul style="list-style-type: none"> <li>Describe the role of refractive error correction in a patient with headache and enumerate the indications for referral</li> </ul>	1
24	OP9.4.2 OP9.4.3 OP9.4.4	<ul style="list-style-type: none"> <li>Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020)</li> </ul>	3
25	OP9.5.1	<ul style="list-style-type: none"> <li>Describe the evaluation and enumerate the steps involved in the stabilisation, initial management and indication for referral in a patient with ocular injury</li> </ul>	1
<b>Total</b>			<b>60</b>

**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH**  
**DEPARTMENT OF OPHTHALMOLOGY**  
**Integrated Classes**

<b>Sl no.</b>	<b>Number</b>	<b>Human Anatomy</b>				<b>No of Hours</b>
1	AN30.5	Explain effect of pituitary tumours on visual pathway	Lecture	Written	Ophthalmology	1
2	AN31.3	Describe anatomical basis of Horner's syndrome	Lecture	Written	Ophthalmology	1
3	AN31.5	Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus	Lecture	Written	Ophthalmology	1
4	AN41.1	Describe & demonstrate parts and layers of eyeball	Practical, Lecture, Small group discussion	Written / Viva voce	Ophthalmology	1
5	AN41.2	Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion	Lecture	Written	Ophthalmology	1
6	AN41.3	Describe the position, nerve supply and actions of intraocular muscles	Lecture	Written	Ophthalmology	1
<b>Physiology</b>						
7	PY10.17	Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, Refractive errors, colour blindness, Physiology of pupil and light reflex	Lecture, Small group discussion	Written / Viva voce	Ophthalmology	1
8	PY10.18	Describe and discuss the physiological basis of lesion in visual pathway	Lecture, Small group discussion	Written / Viva voce	Ophthalmology	1
9	PY10.19	Describe and discuss auditory & visual evoke potentials	Lecture, Small group discussion	Written / Viva voce	Ophthalmology	1
10	PY10.20	Demonstrate testing of visual acuity, colour and field of vision in volunteer/ simulated environment	DOAP sessions	Skill assessment / Viva voce	1 ENT, Ophthalmology	1
<b>Pathology</b>						
11	PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	Lecture, Small group discussion	Written / Viva voce	Ophthalmology	1
<b>Pharmacology</b>						
12	PH1.58	Describe drugs used in Ocular disorders	Lecture	Written / Viva voce	Ophthalmology	1
<b>General Medicine</b>						
13	IM24.15	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly	Lecture, Small group discussion	Written / Viva voce	Ophthalmology	1
<b>Total</b>						<b>13</b>



**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH  
DEPARTMENT OF OPHTHALMOLOGY**

**UG CURRICULUM FOR SDL**

<b>Topic code.</b>	<b>Topic</b>	<b>No. of Hours (13)</b>	<b>Integration</b>	<b>Method of Teaching</b>
OP9.1	Examination of extra ocular movements?	1 hr		SDL
OP8.3.2	fundus examination techniques. Describe & distinguish the fundoscopic features of abnormal retina?	1 hr		SDL
OP7.3.1	Ocular examination of a patient with cataract	1 hr		SDL
OP4.8	Demonstrate technique of removal of foreign body in the cornea in a simulated environment	1 hr		SDL
OP4.10	Counsel patients and family about eye donation in a simulated environment	1 hr		SDL
OP3.1	Elicit document present an appropriate history in patient presenting with red eye	1 hr		SDL
OP3.2	Demonstrate document and present the correct method of examination of a "red eye" including vision assessment, corneal	1 hr		SDL
OP2.1	Demonstrate the symptoms & clinical signs of different lid disorder	1 hr		SDL
OP2.2	Demonstrate the symptoms & clinical signs of different lid disorder	1 hr		SDL
OP1.3	Demonstrate & describe the steps in performing visual acuity assessment for distance vision, near vision, colour vision pinhole test	1 hr		SDL
OP2.3	Demonstrate and describe bell's phenomena regurgitation test of lacrimal sac, massage technique in Cong. NSDO	1 hr		SDL
OP3.8	Demonstrate and describe the technique of removal of foreign body from eye	1 hr		SDL
OP3.9	Demonstrate the correct technique of instillation of eye drops in a simulated environment	1 hr		SDL

# GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

## Department of Ophthalmology

### Theory & Practical Internal Assessment Exams

A minimum of 4 theory internal assessment exams will be conducted as per the schedule

Sl no	Professional year	Number of exams	Theory Internal Assessment	Practical Internal Assessment	Total Marks	Scheduling
1	II	1	10 marks	15 marks	25 marks	At the end of 2nd MBBS clinical postings
2	III	2	50 marks	50 marks	100 marks	Tentatively in the month of March/April
3	III	3	50 marks	50 marks	100 marks	Tentatively in the month of August/September
4	III	4	100 marks	100 marks	200 marks	Preliminary exam, tentatively in the month of November/December, as per final exam pattern.

#### Eligibility criteria to appear for University Examination

- 75% attendance in Theory classes
- 80% attendance in Clinical postings
- 50 % total marks in Internal Assessment theory and practical together (40% minimum in each).

## GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

### DEPARTMENT OF OPHTHALMOLOGY

#### Blueprint for Final Practical / Clinical examinations

The University Practical examination in Ophthalmology will be conducted for 100 marks as per NMC guidelines

The pattern of assessment in practical is suggested as follows

Sl no	Name of the Activity	Marks
1	Case presentations = 2 long cases + 2 short cases	2x15 = 30 marks 2x10= 20 marks Total = 50 marks
2	Objective Structured Clinical Examination (OSCE)	15 marks
3	Directly Observed Procedural Skills (DOPS)	5 marks
4	Viva Voce	20 marks
5	Instruments	10 marks
	Total	100 marks

**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH**  
**DEPARTMENT OF OPHTHALMOLOGY**  
**Blueprint of Theory assessment**

**Maximum Marks : 100 Marks**

Sl no	Topic	Weightage	Marks	Type of questions
1	Anatomy and Physiology of eye	2%	2	BAQ, MCQ
2	Conjunctiva	10%	10	LAQ, SAQ,BAQ, MCQ
3	Cornea & Sclera	12%	12	LAQ, SAQ, BAQ,MCQ
4	Iris & Anterior chamber	15%	15	LAQ, SAQ,BAQ, MCQ
5	Lens	10%	10	LAQ, SAQ, BAQ,MCQ
6	Strabismus	1%	1	MCQ
7	Retina & Optic Nerve	10%	10	LAQ, SAQ,BAQ, MCQ
8	Lids, Adnexa and Orbit	10%	10	LAQ, SAQ,BAQ, MCQ
9	Ocular injuries	5%	5	
10	Optics and Refraction	10%	10	LAQ,SAQ, BAQ,MCQ
11	Ocular manifestations of systemic diseases & Community Ophthalmology	5%	5	SAQ, BAQ,, MCQ
11	Ocular Pharmacology & Ocular Pathology, Ocular Diagnostics	6%	6	SAQ, BAQ, MCQ
12	AETCOM	4%	4	SAQ
	Total	100%	100	

LAQ = long answer question, SAQ = short answer question,BAQ = brief answer questions, MCQ = multiple choice question

Two LAQ (2x10 = 20 marks) will be from following topics

1. Conjunctiva
2. Cornea
3. Iris & Anterior chamber
4. Lens
5. Retina & Optic Nerve
6. Optics & Refraction
7. Lids, Adnexa

**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH  
DEPARTMENT OF OPHTHALMOLOGY**

**CLINICAL POSTINGS- STUDENT DOCTOR METHOD OF LEARNING**

**STUDENTS**-3<sup>rd</sup> PROFESSIONAL PART-1 STUDENTS

**DURATION OF POSTING**- 4 WEEKS

**METHOD OF TRAINING**--MBBS, 3<sup>rd</sup> PROFESSIONAL YEAR STUDENTS ARE POSTED TO DEPARTMENT OF OPHTHALMOLOGY FOR 4 WEEKS BATCH WISE, EACH BATCH COMPRISING 25 STUDENTS.

AN INTRODUCTORY CLASS IS TAKEN TO THE ENTIRE BATCH REGARDING CASE SHEET WRITING, HOW TO INTERACT WITH PATIENTS, HOW TO ELICIT & RECORD COMPLAINTS, HISTORY OF ILLNESS, NECESSARY PERSONAL & FAMILY HISTORY.

THEY WILL BE EXPLAINED HOW TO EXAMINE THE PATIENT AFTER TAKING HIS/ HER CONSENT, HOW TO ELICIT EXAMINATION FINDINGS, SUGGESTING NECESSARY INVESTIGATIONS & TREATMENT BY PRESCRIPTION.

THE STUDENTS ARE DIVIDED INTO BATCHES AND ENTRUSTED TO FACULTY MEMBERS. UNDER GUIDANCE AND SUPERVISION OF DESIGNATED FACULTY MEMBERS, THE STUDENTS WILL PERFORM CLINICAL EXAMINATION, CASE SHEET WRITING, FOLLOW WARD ROUNDS, ATTEND OPERATION THEATRE AND FOLLOW THE ENTRUSTED PATIENT UNTIL HE/SHE IS DISCHARGED FROM WARD.

FACULTY WILL TAKE CLASSES FOR CASE DISCUSSIONS, DISCUSS ETHICAL & HUMANITARIAN ISSUES AND TRAIN HOW TO DOCUMENT THE FINDINGS.

STUDENTS HAVE TO ENTER ALL THEIR DAILY CLINICAL WORK IN LOG BOOK AND SHOW IT TO FACULTY.

LOG BOOK WILL BE REVIEWED PERIODICALLY BY FACULTY AND NECESSARY CORRECTIONS MADE.

BY THE END OF POSTING STUDENT SHOULD LEARN NECESSARY CLINICAL KNOWLEDGE, DOCTOR- PATIENT RELATIONSHIP, ORDERING NECESSRY INVESTIGATIONS, PRESCRIBING TREATMENT & KNOWLEDGE OF REFERRAL WHEN NECESSARY.

AT THE END OF EACH BATCH WARD POSTING, FORMATIVE ASSESSMENT TEST IS CONDUCTED AND FEEDBACK GIVEN TO STUDENT. WHEN NEEDED, REVISED CLASSES AND REEXAMINATION WILL BE CONDUCTED.

**GITAM INSTITUTE OF MEDICAL SCIENCES AND RESEARCH**  
**DEPARTMENT OF OPHTHALMOLOGY**

**DOAP sessions**

Sl no	Number	Competency	Number of hours
<b><u>Topic Visual Acuity Assessment</u></b>			
1	OP1.3	Demonstrate the steps in performing the visual acuity assessment for distance vision, near vision, colour vision, the pin hole test and the menace and blink reflexes	6
<b><u>Topic Lids Adnexa and Orbit</u></b>			
2.	OP2.2	Demonstrate the symptoms & clinical signs of conditions of lids & adnexa.	6
3	OP2.3	Demonstrate under supervision clinical procedures performed in the lid including: bells phenomenon, assessment of entropion/ ectropion, perform the regurgitation test of lacrimal sac. massage technique in cong. dacryocystitis, and trichiatic cilia removal by epilation	3
<b><u>Topic Conjunctiva</u></b>			
4	OP3.1	Elicit document and present an appropriate history in a patient presenting with a “red eye” including congestion, discharge, pain	3
5	OP3.2	Demonstrate document and present the correct method of examination of a “red eye” including vision assessment, corneal lustre, pupil abnormality, ciliary tenderness	3
6	OP3.8	Demonstrate correct technique of removal of foreign body from the eye in a simulated environment	3
7	OP3.9	Demonstrate the correct technique of instillation of eye drops in a simulated environment	3
<b><u>Topic Cornea</u></b>			
8	OP4.8	Demonstrate technique of removal of foreign body in the cornea in a simulated environment & Corneal diseases	6
9	OP4.10	Counsel patients and family about eye donation in a simulated environment	3
<b><u>Topic Iris and Anterior chamber</u></b>			
10	OP6.6	Identify and demonstrate the clinical features and distinguish and diagnose common clinical conditions affecting the anterior chamber	12
11	OP6.10	Counsel patients with conditions of the iris and anterior chamber about their diagnosis, therapy and prognosis in an empathetic manner in a simulated environment	9

<b><u>Topic Lens</u></b>			
12	OP7.3	Demonstrate the correct technique of ocular examination in a patient with a cataract	3
13	OP7.4	Enumerate the types of cataract surgery and describe the steps, intra-operative and post-operative complications of extracapsular cataract extraction surgery.	6
14	OP7.5	To participate in the team for cataract surgery	6
15	OP7.6	Administer informed consent and counsel patients for cataract surgery in a simulated environment	3
<b><u>Topic Miscellaneous</u></b>			
16	OP9.1	Demonstrate the correct technique to examine extra ocular movements (Unicocular& Binocular)	3
<b>Total Hours:</b>			<b>78</b>

GIMSR ORTHOPAEDICS MBBS Syllabus As Per CBME

<b>Topic: Skeletal Trauma, Poly trauma</b>					<b>Number of competencies : (06)</b>
OR1.1	Describe and discuss the Principles of pre-hospital care and Casualty management of a trauma victim including principles of triage	K/S/A/C	K/KH	Y	Lecture with video, Small group discussion 1 hour
OR1.2	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock	K/S	K/KH	Y	Lecture 1 hour
OR1.3	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries	K	KH/SH	Y	Lecture, Small group discussion 1 hour
OR1.4	Describe and discuss the Principles of management of soft tissue injuries	K	K/KH	Y	Lecture, Small group discussion 1 hour
OR1.5	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic 2 hours



GIMSR ORTHOPAEDICS MBBS Syllabus As Per CBME

OR1.6	Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation	K/S/A/C	SH	Y	Simulation, DOAP session 2 hours
OR2.1	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle	K/S	KH/SH	Y	Lecture, Small group discussion, Bed side clinic 2 hours
OR2.2	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus	K	K/KH/SH	Y	Lecture, Small group discussion, Bed side clinic 2 hours
OR2.3	Select, prescribe and communicate appropriate medications for relief of joint pain	K	KH/SH	Y	Lecture, Small group discussion, Bed side clinic 2 hours
OR2.4	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovascular deficit	K/S	K/KH	Y	Lecture, Small group discussion, Bed side clinic 2 hours

GIMSR ORTHOPAEDICS MBBS Syllabus As Per CBME

OR2. 5	Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 6	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius	K	KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 7	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability	K	K/KH/ SH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 8	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 9	Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours

GIMSR ORTHOPAEDICS MBBS Syllabus As Per CBME

OR2. 10	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur	K/S/A/C	KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 11	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of (a) Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 12	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 13	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: (a) Fracture both bones leg (b) Calcaneus (c) Small bones of foot	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 14	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures	K/S/C	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours

GIMSR ORTHOPAEDICS MBBS Syllabus As Per CBME

OR2. 15	Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome	K/S	SH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR2. 16	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
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  2 hours
OR3. 2	Participate as a member in team for aspiration of joints under supervision	K/S/A/C	SH	Y	Small group Discussion. DOAP session  2 hours (Skill Lab/Patients)

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OR3. 3	Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy	K/S/A/C	SH	Y	DOAP session, Videodemonstration  2 hours (Skill Lab/Patients)
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  2 hours
OR5. 1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic  2 hours
OR6. 1	Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)	K	K/KH	Y	Lecture, Small group discussion, Case discussion  2 hours
OR7. 1	Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease	K	K/KH	Y	Lecture, Small group discussion, Case discussion  2 hours

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OR8. 1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post Polio Residual Paralysis	K	K/KH	Y	Lecture, Small group discussion, Case discussion  2 hours
OR9. 1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient	K	K/KH	Y	Lecture, Small group discussion  2 hours
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  2 hours
OR11 .1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves	K	K/H	Y	Lecture, Small group discussion, case discussion  2 hours
OR12 .1	Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of: a. limbs and spine - Scoliosis and spinal bifida b. Congenital dislocation of Hip, Torticollis,	K	KH	Y	Lecture, Small group discussion  2 hours

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	c. congenital talipes equino varus				
OR13.1	Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following: i. Above elbow plaster ii. Below knee plaster iii. Above knee plaster iv. Thomas splint v. splinting for long bone fractures vi. Strapping for shoulder and clavicle trauma	S/A	KH / SH	Y	Case discussion, Videoassisted Lecture, Smallgroup discussion, Teaching, Skill lab sessions  2 hours (Skill Lab/Patients)
OR13.2	Participate as a member in team for Resuscitation of Polytraumavictim by doing all of the following : (a) I.V. access central - peripheral (b) Bladder catheterization (c) Endotracheal intubation (d) Splintage	S/A	KH / SH	Y	Case discussion, Videoassisted Lecture, Smallgroup discussion, Teaching, Skill lab sessions 2 hours (Skill Lab/Patients)  AETCOM
OR14.1	Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like a. fractures with disabilities b. fractures that require prolonged bed stay c. bone tumours d. congenital disabilities	K/S/A/C	KH / SH	Y	Case discussion, Videoassisted lecture, Small group discussion, Teaching, Skills lab sessions  2 hours (Skill Lab/Patients)



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					AETCOM
OR14 .2	Demonstrate the ability to counsel patients to obtain consent for various orthopedic procedures like limb amputation, permanent fixations etc..	K/S/A/C	KH / SH	Y	Case discussion, Videoassisted Lecture, Smallgroup discussion, Teaching, Skills lab sessions  2 hours (Skill Lab/Patients)  AETCOM
OR14 3	Demonstrate the ability to convince the patient for referral to a higher centre in various orthopedic illnesses, based on the detection of warning signals and need for sophisticated management	K/S/A/C	KH / SH	Y	Case discussion, Videoassisted Lecture, Smallgroup discussion, Teaching, Skills lab sessions  2 hours (Skill Lab/Patients)  AETCOM
<p><b>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.</b></p>					

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

AETCOM -6HOURS

Skills Station – 6hours

Lectures-40Hours

Small Group Discussion/ Seminars - 30Hours

**Teaching Learning Methods:** Didactic Lecture, Self- directed Learning (SDL), Small group learning, Problem-based learning, Tutorials, Seminars, etc), Integrated Teaching.

**Assessments methods:** MCQ's, Long essay, Short essay, Short Answer questions, Viva voce.

**Eligibility Criteria:** 75% of attendance in theory & 80 % of attendance in practicals & 50 % of marks in internal examination of both theory and clinical.

**UNIVERSITY EXAMINATION MODEL: 50 MARKS**

EXAM PAPER	NUMBER	MARKS	MARKS
Essay	1	10	10
Short Answer Questions	4	5	20

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Write a Brief Notes	5	2	10
MCQ'S	10	1	10
Total			50 marks

**INTERNAL ASSESSMENT:** Learners must secure at least 50%marks of the total marks ( theory & practical/clinical not less than 40%marks in theory and practical / clinical separately) assigned for internal assessment on a particular subject in order to be eligible for appearing at the final university examination of that subject . Internal assessment marks will reflect as separate head of passing at the summative examination .

**REFERENCE BOOKS:**

1. ESSENTIALS ORTHOPAEDICS – J.Maheswari .
2. NATARAJAN'S TEXT BOOK OF ORTHOPAEDICS & TRAUMATOLOGY .
3. ADAM'S OUTLINE OF ORTHOPAEIDCS.
4. APLEY'S & SOLOMON'S SYSTEM OF ORTHOPAEDICS & TRAUMA.

# **ORTHOPAEDICS**

# **CURRICULUM/SYLLABUS**

**GITAM INSTITUTE OF MEDICAL SCIENCES AND  
RESEARCH  
DEPARTMENT OF PAEDIATRICS**

**Subject:**

Academic schedule and assessment procedure for the subject of Paediatrics for MBBS Undergraduates in 2<sup>nd</sup> (Phase II) and 3<sup>rd</sup> professional year (Phase III part 1 and part 2) including university examinations.

**Goal:**

The broad goals of the teaching of undergraduate students in Pediatrics are to acquire knowledge and appropriate skills for optimally dealing with major health problems of children and to ensure their optimal growth and development. The course includes systematic instructions in growth and development, nutritional needs of a child, immunization schedules and management of common diseases of infancy and childhood, scope of Social Pediatrics and counseling.

**Objectives:**

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

- (a) Describe the normal growth and development during fetal life, neonatal period, childhood and adolescence and outline deviations thereof
- (b) Describe the common pediatrics disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation.
- (c) State age related requirements of calories, nutrients, fluids, drugs etc. in health and disease
- (d) Describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents and child abuse
- (e) Outline National programmes relating to child health including immunization programmes

**Competencies:**

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

- (a) Take a detailed pediatrics history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, explain common bedside investigative procedures, interpret common laboratory investigations and plan and institute therapy,
- (b) Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate,
- (c) Ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy,
- (d) Ability to perform procedures as indicated for children of all ages in the primary care setting
- (e) Ability to recognize children with special needs and refer appropriately
- (f) Ability to communicate appropriately and effectively.
- (g) Distinguish between normal newborn babies and those requiring special care and institute early care to all new born babies including care of pre-term and low birth weight babies, provide correct guidance and counselling in breast-feeding.

#### **Integration:4**

The training in Pediatrics should be done in an integrated manner with other disciplines, such as Anatomy, Physiology, Forensic Medicine, pathology, Microbiology, pharmacology, Community Medicine, Obstetrics and Physical Medicine, curative and rehabilitative services for care of children both in the community and at hospital as part of a team.

#### **Course schedule**

The above objectives are achieved through clinical postings and theory classes (lectures, tutorials/seminars, SDL and integrated teaching). Paediatric clinical postings begin in 2<sup>nd</sup> professional year.

#### **Second professional year:**

2 weeks allotted for clinics, 3 hours per day from Monday to Friday.

**Third professional year:**

Phase III part 1– total duration 13 months reduced to 11 months (pandemic module for 2019 batch)

	<b>Lectures</b>	<b>SGD</b>	<b>SDL</b>	<b>Total</b>	<b>Clinical postings</b>
Phase III Part 1	20	30	5	55	4 weeks
Phase III Part 2	20	35	10	65	4 weeks

1. In clinical postings each student will follow 2 cases per week from admission to discharge and note in the record or observation book duly signed by assistant professor.
2. Bedside teaching to involve all students; focus on history taking, eliciting clinical signs, management strategies and communication skills.
3. For all certifiable procedural skills (implement DOAP) skill lab will be used and all these to be entered in log book and duly signed.
4. Improving analytical skills in respective competencies by small group discussions
5. Internal assessment at the end of every posting- both theory and practicals
6. Attendance cumulative in all professional years
7. Mandatory practice on mannequins for certain procedures
8. Focused visits to centres dealing with national programs
9. Electives will be designed as per available infrastructure
10. Internal assessment needs to focus on log book and direct observation of skills.
11. AETCOM modules as per longitudinal program
12. Encouragement of self directed learning, making students participate in seminars and symposia

13. Field visits to primary and secondary level healthcare
14. Emphasize case based teaching
15. Clinical clerkship in second professional year to focus on history taking, basic clinical examination, assessment of change in clinical status, communication and patient education.
16. Third professional part 1 focuses on all above and arriving at differential diagnosis, ordering relevant investigations. Third professional part 2 to focus on decision making, management plans, prognosis, follow up and continuity of care.

**Integration:**

Teaching shall be integrated both vertically and horizontally recognizing the importance of medical, surgical, medico-legal and ethical issues as they relate to the practice of Paediatrics.

25% of the allotted time shall be utilized for integrated learning with pre and para clinical subjects and assessed during clinical subject examination.

Integrated teaching with clinical departments likes Medicine, Surgery, Obstetrics and Gynecology, radiology etc will be conducted whenever necessary.

**Recommended Text Books:**

Essential Paediatrics - OP Ghai

Paediatric Clinical Methods- Meherban Singh

**Reference Books:**

Nelson textbook of Paediatrics

Nutrition and Child development – K E Elizabeth

Cloherly and Starks Manual of Neonatal Care

Practical Aspects of Paediatrics – Mayo K Chedda



## SYLLABUS – COMPETENCIES FOR III<sup>RD</sup> PROFESSIONAL YEAR PART-I

NO.	Competency	Domain	K/KH/SH /P	Core	T/L method	Time
<b>Normal Growth And Development</b>						
PE1.1	Define the terminologies Growth and Development and Discuss the factors affecting normal growth and development	K	KH	Y	Lecture	1 hour
PE1.2	Discuss and Describe the patterns of growth in infants, children and adolescents	K	KH	Y		
PE1.3	Discuss and Describe the methods of assessment of growth including use of WHO and Indian national standards. Enumerate the parameters used for assessment of physical growth in infants ,children and adolescents	K	KH	Y	SGD	1 hour
PE1.5	Define development and Discuss the normal developmental milestones with respect to motor, behavior, social, adaptive and language	K	KH	Y	Lecture	1 hour
PE1.6	Discuss the methods of assessment of development.	K	KH	Y		
<b>Common Problems Related To Growth</b>						
PE2.1	Discuss the Aetio-pathogenesis, clinical features and management of a child who	K	KH	Y	Lecture	1 hour

	failure to thrive					
PE2.4	Discuss the Aetio-pathogenesis , clinical features and management of a child with short stature	K	KH	Y		
PE2.6	Enumerate there fetal criteria for growth related problems	K	K	Y		

### **Adolescent Health & Common Problems Related To Adolescent Health**

PE6.1	Define Adolescence and stages of adolescence				SGD	1 hour
PE 6.2.	Describe the physical ,physiological and psychological changes during adolescence(Puberty)					
PE6.3	Discuss the general health problems during adolescence	K	KH	Y		
PE6.4	Describe adolescent sexuality and common problems related to it	K	KH	N		
PE6.5	Explain the Adolescent Nutrition and common nutritional problem	K	KH	Y		
PE6.6	Discuss the common Adolescent eating disorders (Anorexia nervosa, Bulimia)	K	KH	N		
PE6.7	Describe the common mental health problems during adolescence	K	KH	Y	SGD	1 hour
PE 6.10	Discuss the objectives and functions of AFHS (Adolescent Friendly Health Services) and the referral Criteria	K	KH	N	Integration	

PE 6.12	Enumerate the importance of obesity and other NCD in adolescents	K	KH	Y		
PE 6.13	Enumerate the prevalence and the importance of recognition of sexual drug abuse in adolescents and children	K	KH	N		
<b>To Promote And Support Optimal Breast Feeding For Infants</b>						
PE7. 1	Awareness on the cultural beliefs and practices of breastfeeding	K	K	N	SGD Integration	1 hour
PE7. 2	Explain the Physiology of lactation	K	KH	Y		
PE7. 3	Describe the composition and types of breast milk and Discuss the differences between cow's milk Human milk	K	KH	Y		
PE7. 4	Discuss the advantages of breast milk	K	KH	Y		
PE7. 6	Enumerate the baby friendly hospital initiatives	K	KH	Y		
<b>Complementary Feeding</b>						
PE8.1	Define the term Complementary Feeding	K	K	Y	SGD	1 hour
PE8.2	Discuss the principles ,the initiation ,attributes ,frequency ,technique and hygiene related to complementary feeding including IYCF	K	KH	Y		
<b>Normal Nutrition, Assessment And Monitoring</b>						
PE9.	Describe the age-related nutritional needs of	K	KH	Y	SGD	1

1	infants ,children and adolescents including micronutrients and vitamins					hour
PE9. 2	Describe the tools and methods for assessment and classification of nutritional status of infants ,children and adolescents	K	KH	Y		
PE9. 3	Explains the calorific value of common Indian foods	K	K	Y		
<b>Provide Nutritional Support, Assessment And Monitoring For Common Nutritional Problems</b>						
P E 10.1	Define and Describe the aetio -pathogenesis, classify including WHO classification, clinical features ,complication and management of severe acute malnourishment(SAM)and moderate acute Malnutrition(MAM)	K	KH	Y	Lecture	1 hour
P E 10.2	Outline the clinical approach to a child with SAM and MAM	K	KH	Y		
<b>Micronutrientsinhealthanddisease-1(Vitamins A D E K , B Complex And C)</b>						
PE 12.1	Discuss the RDA, dietary sources of Vitamin A and their role in health and disease	K	K	Y	SGD	2 hour
PE 12.2	Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin A	K	KH	Y		

PE 12.5	Discuss the Vitamin A prophylaxis program and their Recommendations	K	K	Y		
PE 13.1	Discuss the RDA, dietary sources of Calcium and its role in health and disease	K	K	Y		
PE 13.12	Describe the causes, clinical features, diagnosis and management of Calcium Deficiency	K	KH	Y		
PE 12.6	Discuss the RDA, dietary sources of Vitamin D and its role in health and disease	K	K	Y		
PE 12.7	Describe the causes, clinical features, diagnosis and management of vitamin D deficiency (VDD)/ excess (Rickets & Hyper vitaminosis D)	K	KH	Y		
PE 12.10	Discuss the role of screening for Vitamin D deficiency	K	K	Y		
PE 12.11	Discuss the RDA, dietary sources of Vitamin E and its role in health and disease	K	K	N		
PE 12.12	Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin E	K	K	N		
PE 12.13	Discuss the RDA, dietary sources of Vitamin K and their role in health and disease	K	KH	N		
PE 12.14	Describe the causes, clinical features, diagnosis management & prevention of deficiency of Vitamin	K	KH	N		

PE 12.15	Discuss the RDA ,dietary sources of Vitamin B and its Role in health and disease				<b>SDL</b>	
PE 12.16	Describe the causes, clinical features, diagnosis and management of deficiency of B complex vitamins	K	KH	Y		
PE 12.19	Discuss the RDA ,dietary sources of vitamin c and their role in health and disease	K	KH	N		
PE 12.20	Describe the causes, clinical features, diagnosis and management of deficiency of vitamin C (scurvy)	K	KH	N		
PE 12.21	Identify the clinical features of vitamin C deficiency	S	SH	N		
<b>Fluid And Electrolyte Balance</b>						
PE 15.1	Discuss the fluid and electrolyte requirement in health and disease	K	K	Y	<b>SGD</b>	<b>2 hour</b>
PE 15.2	Discuss the clinical features and complications of fluid and electrolyte imbalance and outline the management					
PE 15.3	Calculate the fluid and electrolyte requirement in health	S	SH	Y		
PE 15.4	Interpret electrolyte report	S	SH	Y		
PE 15.5	Calculate fluid and electrolyte imbalance	S	SH	Y		

<b>Integrated Management Of Neonatal And Childhood Illnesses(IMNCI)Guideline</b>						
PE 16.1	Explain the components of Integrated Management of Neonatal and Childhood Illnesses (IMNCI) guidelines and method of Risk stratification	K	KH	Y	SGD	1 hour
<b>The National Health Programs – NHM, RCH</b>						
PE 17.1	State the vision and outline the goals, strategies and plan of action of NHM and other important national programs pertaining to maternal and child health including RMNCHA+, RBSK, RKSK, JSSK, mission In dradhanush and ICDS	K	KH	Y	SGD	1 hour
PE 18.1	List and explain the components, plan, outcome of Reproductive Child Health (RCH) program and appraise its monitoring and evaluation	K	KH	Y	SGD	1 hour
PE 18.2	Explain preventive interventions for child survival and safe motherhood	K	KH	Y		
<b>National Programs – Universal Immunization Program</b>						
PE 19.1	Explain the components of the Universal Immunization Program(UIP)and the National Immunization Program(NIP)	K	KH	Y	Lecture	1 hour
PE 19.2	Explain the epidemiology of vaccine preventable diseases(VPDs)	K	KH	Y		

PE 19.3	Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contra indications	K	KH	Y		
PE 19.4	Define cold chain and discuss the methods of safe storage and handling of vaccines	K	KH	Y	SGD	1 hour
PE 19.5	Discuss immunization in special situations – HIV positive children, immunodeficiency, pre-term, organ transplants, those who received blood and blood products, splenectomised children, adolescents, and travelers	K	KH	Y		
PE 19.8	Demonstrate willingness to participate in the national and sub-national immunization days	A	SH	Y	SGD	1 hour
PE 19.9	Describe the components of safe vaccine practice – Patient education/ counseling; adverse events following immunization, safe injection practices, documentation and medico-legal implications	K	KH	Y		
PE 19.1 5	Explain the term implied consent in Immunization services	K	K	Y		
PE 19.1 6	Enumerate available newer vaccines and their indications including pentavalent pneumococcal, rotavirus, JE, typhoid IPV & HPV	K	K	N		
<b>Care of the Normal New Born and High Risk Newborn</b>						
PE	Define the common neonatal nomenclatures	K	KH	Y	Lecture	1



20.1	including the classification and describe the characteristics of a Normal Term Neonate and High Risk Neonates					hour
PE 20.2	Explain the care of a normal neonate	K	KH	Y		
PE 20.1 1	Discuss the clinical characteristics, complications and management of low birth weight (preterm and small for gestation).	K	KH	Y		
PE 20.7	Discuss the etiology ,clinical features and management of Birth asphyxia	K	KH	Y	Lecture	1 hour
PE 20.9	Discuss the etiology ,clinical features and management of birth injuries.	K	KH	Y		
PE 20.8	Discuss the etiology, clinical features and management of respiratory distress in New born including meconium-aspiration and transient tachypnea of newborn.	K	KH	Y	Lecture	1 hour
PE 20.1 0	Discuss the etiology ,clinical features and management of hemorrhagic disease of newborn	K	KH	Y	Lecture	1 hour
PE 20.1 2	Discuss the temperature regulation in neonates ,clinical features and management of Neonatal Hypothermia.	K	KH	Y		
PE 20.1	Discuss the etiology, clinical features and management of Neonatal hypoglycemia.	K	KH	Y	SGD	1 hour

3						
PE 20.1 4	Discuss the etiology ,clinical features and management of Neonatal hypocalcemia	K	KH	Y		
PE 20.1 5	Discuss the etiology, clinical features and management of neonatal seizures.	K	KH	Y		
PE 20.1 6	Discuss the etiology , clinical features and management of neonatal sepsis.	K	KH	Y	SGD	1 hour
PE 20.1 7	Discuss the etiology, clinical features and management of Perinatal infections.	K	KH	Y		
PE 20.1 9	Discuss the etiology , clinical features and management of Neonatal hyper bilirubinemia	K	KH	Y	Lecture	1 hour
PE 20.2 0	Identify clinical presentations of common surgical conditions in the newborn including TEF, oesophageal atresia , anal atresia, cleft lip and palate, congenital diaphragmatic hernia and causes of acute abdomen.	K	KH	Y	SGD	1 hour
<b>Vaccine Preventable Diseases</b>						
PE	Discuss the epidemiology, clinical features,	K	KH	Y	Lecture	2

34.1	clinical types, complications of Tuberculosis in Children and Adolescents					hours
PE 34.2	Discuss the various diagnostic tools for childhood tuberculosis	K	KH	Y		
PE 34.3	Discuss the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y		
PE 34.4	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Program	K	KH	Y		
PE 34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis	S	SH	N	SGD	1 hour
PE 34.1 0	Discuss the various samples for demonstrating the organism eg .Gastric Aspirate ,Sputum ,CSF ,FNAC	K	KH	Y	SDL	
PE 34.1 2	Enumerate the indications and discuss the limitations of methods of culturing M .Tuberculosis	K	KH	Y		
PE 34.1 3	Enumerate the newer diagnostic tools for Tuberculosis including BACTEC CBNAAT and their indications	K	K	N		
PE 34.1 4	Enumerate the common causes of fever and discuss the etio pathogenesis ,clinical features ,complications and management of fever in children	K	KH	Y	SGD	2 hours

PE 34.1 6	Enumerate the common causes of fever and discuss the etio pathogenesis ,clinical features, complications and management of child with Diphtheria, Pertussis, Tetanus	K	KH	Y		
PE 34.1 5	Enumerate the common causes of fever and discuss the etio pathogenesis, clinical features ,complications and management of child with exanthematous illness like Measles ,Mumps, Rubella &Chickenpox	K	KH	Y	SGD	1 hour
PE 34.1 7	Enumerate the common causes of fever and discuss the etio pathogenesis ,clinical features, complications and management of child with Typhoid	K	KH	Y	SGD	1 hour
PE 34.1 8	Enumerate the common causes of fever and discuss the etio pathogenesis ,clinical features, complications and management of child with Dengue ,Chikungunya and other vector borne diseases	K	KH	Y	Lecture	1 hour
PE 34.1 9	Enumerate the common causes of fever and discuss the etio pathogenesis, clinical features, complications and management of children with Common Parasitic Infections ,malaria ,leishmaniasis, filariasis, helminthic Infestations , amebiasis , giardiasis	K	KH	Y	SGD	1 hour
PE	Enumerate the common causes of fever	K	KH	Y		

34.20	and discuss the etio pathogenesis ,clinical features, complications and management of child with Rickettsial diseases					
<b>Diarrhoeal Diseases and Dehydration</b>						
PE 24.1	Discuss the etio pathogenesis, classification ,clinical presentation and management of diarrheal diseases in children.	K	KH	Y	Lecture	1 hour
PE 24.2	Discuss the classification and clinical presentation of various types of diarrheal dehydration	K	KH	Y		
PE 24.3	Discuss the physiological basis of ORT ,types of ORS and the composition of various types of ORS in children	K	KH	Y	SGD	1 hour
PE 24.4	Discuss the types of fluid used in Pediatric diarrheal diseases and their composition	K	KH	Y		
PE 24.5	Discuss the role of antibiotics, antispasmodics, anti- secretory drugs, probiotics,anti-emetics in acute diarrheal diseases	K	KH	Y		
PE 24.6	Discuss the causes, clinical presentation and management of persistent diarrhea in children	K	KH	Y	Lecture	1 hour
PE 24.7	Discuss the causes, clinical presentation and management of chronic diarrhea in children.	K	KH	Y		

PE 24.8	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y		
<b>Acute and Chronic Liver Disorders</b>						
PE 26.1	Discuss the etio pathogenesis, clinical features and management of acute hepatitis in children	K	K	Y	Lecture	1 hour
PE 26.2	Discuss the etio pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	K	Y		
PE 26.3	Discuss the etio pathogenesis, clinical features and management of chronic liver diseases in children.	K	K	Y	SGD	1 hour
PE 26.4	Discuss the etiopathogenesis, clinical features and management of Portal Hypertension in children	K	K	Y		
PE 26.1 1	Enumerate the indications for Upper GI endoscopy	K	KH	Y		
PE 26.1 2	Discuss the prevention of Hep B infection – Universal precautions and Immunization	K	K	Y	<b>SDL</b>	
<b>Respiratory System</b>						

PE 28.1	Discuss the etio pathogenesis, clinical features and management of Nasopharyngitis	K	KH	Y	SG D	1 hour
PE 28.2	Discuss the etio pathogenesis of Pharyngo-tonsillitis	K	KH	Y		
PE 28.3	Discuss the clinical features and management of Pharyngo-tonsillitis	K	KH	Y		
PE 28.4	Discuss the etio pathogenesis ,clinical features and management of Acute Otitis Media(AOM)	K	KH	Y		
PE 28.5	Discuss the etio pathogenesis , clinical features and management of Epiglottitis	K	KH	Y	SG D	1 hour
PE 28.6	Discuss the etio pathogenesis, clinical features and management of Acute laryngo-tracheo-bronchitis	K	KH	Y		
PE 28.7	Discuss the etiology ,clinical features and management of Stridor in children	K	KH	Y		
PE 28.8	Discuss the types, clinical presentation, and management of foreign body aspiration in infants and children	K	KH	Y		
PE 28.1 8	Describe the etiopathogenesis, diagnosis, clinical features, management and prevention of lower respiratory infections including bronchiolitis, wheeze Associated LRTI Pneumonia and empyema.	K	KH	Y	Lec tur e	2 hour
PE	Describe the etio pathogenesis, diagnosis	K	KH	Y	Lec	1

28.19	clinical features, management and prevention of asthma in children				ture	hour
PE 31.5	Discuss the etio pathogenesis, clinical types ,presentations ,management and prevention of childhood Asthma	K	KH	Y		
PE 31.8	Enumerate the criteria for referral in a child with asthma	K	K	Y	SGD	1 hour
PE 31.9	Interpret CBC and CX Ray In Asthma	S	SH	Y		

### Chromosomal Abnormalities

PE 32.1	Discuss the genetic basis, risk factors ,complications, prenatal diagnosis, management and genetic counseling in Down Syndrome	K	KH	Y	Lecture	1 hour
PE 32.4	Discuss the referral criteria and Multidisciplinary approach to management	K	KH	Y		
PE 32.6	Discuss the genetic basis ,risk factors, clinical features, complications ,prenatal diagnosis, management and genetic counseling in Turner Syndrome	K	KH	N		
PE 32.9	Discuss the referral criteria and Multidisciplinary approach to management	K	KH	N		
PE 32.11	Discuss the genetic basis, risk factors ,complications ,prenatal diagnosis ,management and genetic counseling in	K	KH	Y		



Klinefelter Syndrome						
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## SYLLABUS – COMPETENCIES FOR III<sup>rd</sup> PROFESSIONAL YEAR PART-2

NO.	Competency	Domain	K/KH/S H/P	Core	TL M	Time
<b>Cardiovascular System- Heart Diseases</b>						
PE 23.1	Discuss the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases-VSD, ASD and PDA	K	KH	Y	Lecture	1 hour
PE 23.2	Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases– Fallot Physiology	K	KH	Y	Lecture	1 hour
PE 23.3	Discuss the etio pathogenesis, clinical presentation and management of cardiac failure in infant and children	K	KH	Y	SGD	1 hour
PE 23.4	Discuss the etio pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children	K	KH	Y	Lecture	1 hour
PE 23.5	Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever	K	KH	Y		
PE	Discuss the etio pathogenesis, clinical	K	KH	Y	<b>SDL</b>	

23.6	features and management of Infective endocarditis in children					
PE 23.16	Discuss the indications and limitations of Cardiac catheterization	K	K	Y	SGD	1 hour
PE 23.17	Enumerate some common cardiac surgeries like BT shunt, Potts and Waterston's and corrective surgeries	K	K	Y		
<b>Anemia And Other Hemato-Oncologic Disorders In Children</b>						
PE 29.1	Discuss the etio pathogenesis, clinical features ,classification and approach to a child with anemia	K	KH	Y	SG D	1 hour
PE 29.2 0	Enumerate the indications for splenectomy and precautions	K	K	N		
PE 29.2	Discuss the etio pathogenesis, clinical features and management of iron deficiency anemia.	K	KH	Y	Lect ure	1 hour
PE 29.3	Discuss the etio pathogenesis, clinical features and management of VitaminB-12, Folate deficiency anemia.	K	KH	Y		
PE 29.4	Discuss the etio pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anemia.	K	KH	Y	Lect ure	2 hours
					SG	1

	Hereditary spherocytosis , Autoimmune hemolytic anemia and hemolytic uremic syndrome.				D	hour
PE 29.5	Discuss the National Anemia Control Program.	K	KH	Y	<b>SDL</b>	
PE 29.6	Discuss the cause of thrombocytopenia in children: describe the clinical features and management of idiopathic Thrombocytopenic Purpura.	K	KH	Y	SGD	1 hour
PE 29.7	Discuss the etiology, classification, pathogenesis and clinical features of Hemophilia in children.	K	KH	Y	<b>SDL</b>	
PE 29.8	Discuss the etiology, clinical presentation and management of Acute Lymphoblastic Leukemia in Children.	K	KH	N	Lecture	1 hour
PE 29.9	Discuss the etiology, clinical presentation and management of Lymphoma in children.	K	KH	N		
PE 29.16	Discuss the indications for Hemoglobin electrophoresis and interpret the report.	K	K	N	SGD	1 hour
<b>Genito - Urinary System</b>						
PE 21.1	Enumerate the etio pathogenesis, clinical features, complications and management of Urinary Tract infection(UTI) in children	K	KH	Y	Lecture	1 hour
PE	Enumerate the etio pathogenesis, clinical	K	KH	Y	Lect	1

21.2	features ,complications and management of acute post-streptococcal Glomerular Nephritis in children				ure	hour
PE 21.3	Discuss the approach and referral criteria to a child with Proteinuria	K	KH	Y	Lecture	1 hour
PE 21.4	Discuss the approach and referral criteria to a child with hematuria	K	KH	Y	SGD	1 hour
PE 21.7	Enumerate the etio pathogenesis, clinical features, complications and management of Wilms Tumor.	K	KH	Y		
PE 21.5	Enumerate the etio pathogenesis, clinical features, complications and management of Acute Renal Failure in children	K	KH	Y	SGD	1 hour
PE 21.6	Enumerate the etio pathogenesis, clinical features, complications and management of chronic kidney disease in children.	K	KH	Y	SGD	1 hour
PE 21.1 5	Discuss and enumerate the referral criteria for children with genitourinary disorder	K	KH	Y	SGD	1 hour
PE 21.1 7	Describe the etio pathogenesis, grading, clinical features and management of hypertension in children	K	KH	Y		

**Approach To And Recognition Of A Child With Possible Rheumatologic Problem**

PE 22.1	Enumerate the common Rheumatological problems in children. Discuss the clinical approach to recognition and referral of a child with Rheumatological problem	K	KH	Y	Lecture	1 hour
PE 22.3	Describe the diagnosis and management of common vasculitic disorders including Henoch Schonlein Purpura, Kawasaki Disease, SLE, JIA	K	KH	N	SGD	2 hours
<b>Systemic Pediatrics-Central Nervous System</b>						
PE 30.1	Discuss the etio pathogenesis, clinical features, complications, management and prevention of meningitis in children	K	KH	Y	Lecture	1 hour
PE 30.2	Distinguish bacterial, viral and tuberculous meningitis	K	KH	Y	SGD	1 hour
PE 30.20	Interpret and explain the findings in a CSF analysis	S	SH	Y		
PE 30.3	Discuss the etio pathogenesis, classification, clinical features, complication and management of Hydrocephalus in children	K	KH	Y	SGD	1 hour
PE 30.4	Discuss the etio pathogenesis, classification, clinical features, and management of Microcephaly in children	K	KH	Y	SGD	1 hour
PE 30.5	Enumerate the Neural tube defects. Discuss the causes ,clinical features ,types, and management of Neural Tube defect	K	KH	Y	Lecture	1 hour

PE 30.6	Discuss the etio pathogenesis ,clinical features, and management of Infantile hemiplegia	K	KH	Y	SGD	1 hour
PE 30.10	Discuss the etio pathogenesis, clinical features and management of Mental retardation in children	K	KH	Y		
PE 30.7	Discuss the etio pathogenesis, clinical features ,complications and management of Febrile seizures in children	K	KH	Y	Lecture	1 hour
PE 30.9	Define Status Epilepticus, Discuss the clinical presentation and management	K	KH	Y	SGD	1 hour
PE 27.6	Describe the etio pathogenesis ,clinical approach and management of Status epilepticus	K	KH	Y		
PE 30.8	Define epilepsy. Discuss the pathogenesis, clinical types, presentation and management of Epilepsy in children	K	KH	Y	SGD	1 hour
PE 30.11	Discuss the etio pathogenesis, clinical features and management of children with cerebral palsy	K	KH	Y	Lecture	1 hour
PE 3.8	Discuss the etio pathogenesis, clinical presentation and multi disciplinary approach in the management of cerebral palsy	K	KH	Y		
PE 30.12	Enumerate the causes of floppiness in an infant and discuss the clinical features, differential diagnosis and management	K	KH	Y	SGD	1 hour

PE 30.14	Discuss the etio pathogenesis, clinical features and management of Duchene muscular dystrophy	K	KH	Y	SGD	1 hour
PE 30.13	Discuss the etio pathogenesis, clinical features ,management and prevention of Poliomyelitis in children	K	KH	Y	<b>SDL</b>	
PE 30.15	Discuss the etio pathogenesis, clinical features and management of Ataxia in children	K	KH	Y	<b>SDL</b>	
PE 30.16	Discuss the approach to and management of a child with headache	K	KH	Y	SGD	1 hour
<b>Common Problems Related To Development-1</b>						
PE. 3.1	Define, Enumerate and Discuss the causes of developmental delay and disability Including intellectual disability in children	K	K	Y	<b>SDL</b>	
PE 3.2	Discuss the approach to a child with developmental delay	K	KH	Y	SGD	1 hour
PE 3.6	Discuss the referral criteria for children with Developmental delay	K	K	Y		
<b>Common Problems Related To Development - 2</b>						
PE 4.1	Discuss the causes and approach to a child with scholastic backwardness	K	K	N	Lect ure	1 hour
PE 4.4	Discuss etiology ,clinical features, diagnosis and management of a child with autism	K	K	N		

PE 4.3	Discuss diagnostic assessment of a child with suspected ADHD.	K	K	N	SGD	1 hour
PE 4.4	Discuss clinical assessment of ASD.	K	K	N		
<b>Common Problems Related To Behaviour</b>						
PE 5.1	Describe the clinical features ,diagnosis and management of thumb sucking	K	K	N	<b>SDL</b>	
PE 5.3	Describe the clinical features ,diagnosis and management of nail-biting	K	K	N		
PE 5.6	Describe the clinical features, diagnosis and management of pica	K	K	N		
PE 5.2	Describe the clinical features ,diagnosis and management of feeding problems	K	K	N		
PE 5.4	Describe the clinical features, diagnosis and management of breath holding spells.	K	K	N	SGD	1 hour
PE 5.5	Describe the clinical features, diagnosis and management of temper tantrums	K	K	N		
PE 5.7	Describe the clinical features, diagnosis and management of fussy infant	K	K	N		
PE 5.8	Discuss the etiology, clinical features and management of enuresis.	K	K	N	SGD	1 hour
PE 5.9	Discuss the etiology, clinical features and management of Encopresis.	K	K	N		
<b>Allergic Rhinitis, Atopic Dermatitis, Bronchial Asthma , Urticaria ,</b>						



<b>Angio Edema</b>						
PE 31.1	Describe the etio pathogenesis, management and prevention of Allergic Rhinitis in Children	K	KH	Y	SGD	1 hour
PE 31.12	Discuss the etio pathogenesis, clinical features, complications and management of Urticaria / Angioedema.	K	K	Y		
PE 31.3	Describe the etio pathogenesis ,clinical features and management of Atopic dermatitis in Children	K	KH	Y		
<b>Endocrinology</b>						
PE 13.7	Discuss the RDA ,dietary sources of Iodine and its role in Health and disease	K	K	Y	SGD	1 hour
PE 13.8	Describe the causes ,diagnosis and management of deficiency of Iodine	K	KH	Y		
PE 13.10	Discuss the National Goiter Control program and its recommendations	K	K	Y		
PE 33.1	Describe the etio pathogenesis clinical features, management of Hypothyroidism in children	K	KH	Y	Lecture	1 hour
PE 33.4	Discuss the etio pathogenesis, clinical types, presentations, complications and management of Diabetes mellitus in children	K	KH	Y	Lecture	1 hour
PE	Define precocious and delayed Puberty	K	KH	Y	SGD	1

33.8						hour
P E 11.1	Describe the common etiology, clinical features and management of obesity in children	K	KH	Y		
P E 1.2	Discuss the risk approach for obesity and Discuss the prevention strategies	K	KH	Y		
<b>Pediatric Emergencies–Common Pediatric Emergencies</b>						
PE 27.1	List the common causes of morbidity and mortality in the under five children	K	K	Y	<b>SDL</b>	
PE 27.2	Describe the etio pathogenesis, clinical approach and management of cardio respiratory arrest in children	K	KH	Y	Lecture	1 hour
PE 27.5	Describe the etio pathogenesis, clinical approach and management of Shock in children	K	KH	Y	Lecture	1 hour
PE 27.3	Describe the etio pathogenesis of respiratory distress in children	K	KH	Y	SGD	1 hour
PE 27.4	Describe the clinical approach and management of respiratory distress in children	K	KH	Y		
PE 27.7	Describe the etio pathogenesis, clinical approach and management of an unconscious child	K	KH	Y	SGD	1 hour
PE 27.9	Discuss oxygen therapy ,in Pediatric emergencies and modes of administration	K	KH	Y	SGD	1 hour
PE 27.11	Explain the need and process of triage of sick children brought to health facility	K	KH	Y	SGD	1 hour

PE 27.12	Enumerate emergency signs and priority signs	K	KH	Y		
PE 27.13	List the sequential approach of assessment of emergency and priority signs	K	KH	Y		
PE 27.24	Monitoring and maintaining temperature :define hypothermia. Describe the clinical features ,complications and management of Hypothermia	K	K	Y	<b>SDL</b>	
PE 27.25	Describe the advantages and correct method of keeping an infant warm by skin to skin contact	K	K	Y	<b>SDL</b>	
PE 27.26	Describe the environmental measures to maintain Temperature	K	K	Y	<b>SDL</b>	
PE 27.29	Discuss the common causes, clinical presentation,medico-legal implications of abuse	K	K	Y	SGD	1 hour
<b>Toxic Elements And Free Radicals And Oxygen Toxicity</b>						
PE 27.8	Discuss the common types, clinical presentations and management of poisoning in children	K	KH	Y	SGD	2 hours
PE 14.1	Discuss the risk factors ,clinical features, diagnosis and management of Lead Poisoning	K	KH	N		
PE 14.2	Discuss the risk factors ,clinical features, diagnosis and management of Kerosene aspiration	K	KH	N		
PE 14.3	Discuss the risk factors, clinical features, diagnosis and management of Organo-phosphorus poisoning	K	KH	N		

PE 14.4	Discuss the risk factors ,clinical features, diagnosis and management of paracetamol poisoning	K	KH	N		
PE 14.5	Discuss the risk factors ,clinical features, diagnosis and management of Oxygen toxicity	K	KH	N		
<b>The Role Of The Physician In The Community</b>						
PE 35.1	Identify, discuss and defend medico legal, socio-cultural and ethical issues as they pertain to health care in children(including parental rights and right to Refuse treatment)	K	KH	Y	SGD	1 hour

**DEPARTMENT OF PAEDIATRICS  
2<sup>nd</sup> MBBS CLINICAL POSTING**

**Total 10 days (2weeks posting, 5 days a week)**

<b>S N O</b>	<b>TOPIC CODE</b>	<b>TOPIC</b>	<b>CP</b>	<b>ZC</b>	<b>L</b>	<b>T/L method</b>	<b>Others</b>
1		<b>INTRODUCTION TO PAEDIATRICS,</b> orientation to OPD, Paediatric wards and NICU. Sensitization to competencies to be achieved in the 2 weeks of posting and logbook particulars.	1				
	PE 1.4	Perform Anthropometric measurements for different age groups, document in growth charts and interpret		3	Logbook	Bedside/ skill lab	
	PE 11.5	Calculate BMI, document in BMI chart and interpret		3	Logbook	Bedside	
2	PE 1.7	Perform Developmental assessment and interpret	1	3	Logbook	Bedside	
3	PE 7.7	Perform breast examination and Identify common problems during lactation such as retracted nipples, cracked nipples, breast engorgement, breast abscess	1	-	-	Bedside/ skill lab	Skill assess- ment, OSCE (video based)
	PE 7.5	Observe correct technique of breast feeding and distinguish right from wrong technique		3	Logbook	Bedside/ skill lab	Skill assessme nt, OSCE (video

							based)
4	PE8.3	Enumerate the common complimentary foods	1	-	-	Bedside	Skill assessment OSCE/ VIVA/ LONG CASE
	PE 8.4	Elicit history on the Complementary Feeding habits					
	PE 9.4	Elicit, document and present an appropriate nutritional history and perform a dietary recall					
	PE 9.5	Calculate the age appropriate calorie requirement in health and disease and Identify gaps					
	PE 9.6	Assess and classify the nutrition status of infants, children and adolescents and recognize deviations					
	PE 9.7	Plan an appropriate diet in health and disease					
5	PE2.2	Assessment of a child with failure to thrive including eliciting an appropriate history and examination	1	-	-	Bedside	
	PE2.3	Counseling apparent with failing to thrive child					
6	PE2.5	Assessment of a child with short stature: Elicit history; perform examination, document and present.	1	-	-	Bedside	

	PE 11.3	Assessment of a child with obesity with regard to eliciting history including physical activity, charting and dietary recall			logbook	Bedside/st andardized pt	
	PE 11.4	Examination including calculation of BMI, measurement of waist hip ratio, Identifying external markers like acanthosis, striae, pseudo-gynecomastia		-	-	Bedside/st andardized pt/ videos	
7	PE6.8	Respecting patient privacy and maintaining Confidentiality while dealing with adolescence	1	-	-	Bedside	
	PE6.9	Perform routine Adolescent Health checkup including eliciting history, performing examination including SMR (Sexual Maturity Rating), growth assessments(using Growth charts)and systemic exam including thyroid and Breast exam and the HEADS screening					
8	PE 18.3	Conduct antenatal examination of women independently and apply at- risk approach in antenatal care	1	-	-	Bedside/ video	Integrate with OBG/ CM

	PE 18.4	Provide intra-natal care and conduct a normal delivery In a simulated environment			Logbook	DOAP session, Skills Lab, Video	Integrate with OBG/CM
	PE 18.5	Provide intra-natal care and observe the conduct of a Normal delivery			Logbook	<b>DOAP</b>	Integrate with OBG
	PE 18.6	Perform Postnatal assessment of new born and mother, provide advice on breastfeeding, weaning and on family planning			-	Bedside/ski ll lab	Integrate with OBG/CM

CP – clinical posting; C number required to certify; L- logbook; Each clinical posting (CP)- 3 hours

<b>Video /DOAP</b>							
9	PE 7.8	Educate mothers on ante natal breast care and prepare mothers for lactation	1		Logbook	DOAP / clinical session	AETCOM
	PE 7.9	Educate and counsel mothers for best practices in Breastfeeding			Logbook	DOAP	
	PE 7.10	Respects patient privacy			Logbook		AETCOM
10	PE 7.11	Participate in Breastfeeding Week Celebration	1	DOAP	Logbook		
	PE8.5	Counsel and educate mothers on the best practices in Complementary feeding			Logbook		Integrate with CM



### 3<sup>RD</sup> MBBS (PART 1) CLINICAL POSTINGS

#### DEPARTMENT OF PAEDIATRICS

Total 24 days (4weeks posting, 6 days a week)

Each clinical posting (CP) - 3 hours

CP- Clinical posting; C – Minimum number of certification; L-logbook

<b>N o</b>	<b>TOPI C COD E</b>	<b>TOPIC</b>	<b>CP</b>	<b>C</b>	<b>L</b>	<b>T/L Meth od</b>	<b>Other</b>
1	PE 10.3	Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community-based intervention, rehabilitation and prevention	1	-	-	Bedside	
	PE 10.4	Identify children with under nutrition as per IMNCI criteria and plan referral	1		Logbook	DOAP	
	PE 10.5	Counsel parents of children with SAM and MAM			Logbook	Bedside	AETC OM
2	PE 12.3	Identify the clinical features of dietary deficiency /excess of Vitamin A	1	-	Logbook	Clinical case or photographs/ bedside teaching	

	PE 12.4	Diagnose patients with Vitamin A deficiency (VAD),classify and plan management					
	PE 12.8	Identify the clinical features of dietary deficiency of Vitamin D					
	PE 12.9	Assess patients with Vitamin D deficiency, diagnose, classify and plan management					
	PE 12.17	Identify the clinical features of Vitamin B complex deficiency					
	PE 12.18	Diagnose patients with vitamin complex deficiency and plan management					
	PE 12.21	Identify the clinical features of vitamin deficiency					
3	PE 13.3	Identify the clinical features of dietary deficiency of Iron and make a diagnosis	1		Logbook	Bedside /skill lab	
	PE 13.4	Interpret hemogram and Iron Panel					
	PE 13.5	Propose a management plan for IRON deficiency anemia					
4	PE 15.6	Demonstrate the steps of inserting an IV cannula in a model	1	2	-	Skill lab	
	PE 15.7	Demonstrate the steps of inserting an interosseous line in a mannequin		2			

5	PE16.2	Assess children < 2 months using IMNCI guidelines	1	-	Logbook	DOAP/ video			
	PE16.3	Assess children > 2 months to 5years using IMNCI guidelines and stratify risk							
6	PE 18.3	Conduct antenatal examination of women independently and apply at-risk approach in antenatal care	1	-	-	Bedside	<b>OB G</b>		
	PE 18.6	Perform Postnatal assessment of newborn and mother, provide advice on breastfeeding, weaning and on family planning						Bedside /skill lab	-
	PE 18.7	Educate and counsel care givers of children						OSCE	
	PE 18.8	Observe the implementation of the program by visiting rural health centre						Logbook	
	PE 18.4	Provide intra-natal care and conduct a normal delivery in a simulated environment	1		Logbook	DOAP	<b>OB G</b>		
PE 18.5	Provide intra-natal care and observe the conduct of a normal delivery				DOAP/ skill lab				
7	PE 19.6	Assess patient for fitness for immunization and prescribe an age appropriate immunization schedule	1	-	-	OPD/ skill lab	-		
	PE	Educate and counsel a patient for						Logbook	DOAP

	19.7	immunization					
	PE 9.11	Document Immunization in an immunization record			-	DOAP	-
	PE 19.10	Observe the handling and storing of vaccines					
	PE 19.12	Observe the administration of UIP vaccines			Logbook		
	PE 19.13	Demonstrate the correct administration of different vaccines in a mannequin					
	PE 19.14	Practice Infection control measures and appropriate handling of the sharps					
8	PE 20.3	Perform Neonatal resuscitation in a manikin	2	-	Logbook	Skill lab/ DOAP	
	PE 20.4	Assessment of a normal neonate	2	-	Logbook	Bedside	
	PE 20.5	Counsel/educate mothers on the care of neonates					
	PE 20.6	Explain the follow-up care for neonates including Breastfeeding, temperature maintenance, immunization, importance of growth monitoring and red flags.					
	PE 20.18	Identify and stratify risk in a sick neonate using IMNCI guidelines	1		Logbook	DOAP	

9	PE 24.9	Elicit, document and present history pertaining to diarrheal diseases	2	-		Bedside	-
	PE 24.10	Assess for signs of dehydration, document and present					
	PE 24.11	Apply the IMNCI guidelines in risk stratification of children with diarrheal dehydration and refer			Logbook		
	PE 24.13	Interpret RFT and electrolyte report					
	PE 24.14	Plan fluid management as per the WHO criteria					
	PE 4.12.1	Perform and interpret stool examination including Hanging Drop		-	Logbook	DOAP	<b>MICRO</b>
	PE 24.15	Perform NG tube insertion in a manikin	1	-	Logbook	DOAP	-
	PE 24.16	Perform IV cannulation in a model					
	PE 24.17	Perform Interosseous insertion model					
10	PE 26.5	Elicit document and present the history related to diseases of Gastrointestinal system	1	-		Bedside, skill lab	

	PE 26.6	Identify external markers for GI and Liver disorders e.g. Jaundice, Pallor, Gynecomastia, Spider angioma, Palmar erythema, Ichthyosis, Caput medusa, Clubbing, Failing to thrive, Vitamin A and D deficiency					
	PE 26.7	Perform examination of the abdomen, demonstrate organomegaly, ascites etc.					
	PE 26.8	Analyze symptoms and interpret physical signs to make a provisional/ differential diagnosis					
	PE 26.9	Interpret Liver Function Tests, viral markers, Ultra sonogram report					
	PE26.13	Counsel and educate patients and their family ,Appropriately on liver diseases			log book		
	PE26.10	Demonstrate the technique of liver biopsy in a Perform Liver Biopsy in a simulated environment			log book	DOAP	
11	PE 28.9	Elicit, document and present age appropriate history of a child with upper respiratory problem including Stridor	1	-	-	DOAP	

PE28.10	Perform otoscopic examination of the ear					<b>ENT</b>
PE28.11	Perform throat examination using tongue depressor					
PE28.12	Perform examination of the nose					
PE28.13	Analyze the clinical symptoms and interpret physical findings and make a provisional / differential diagnosis in a child with ENT symptoms					
PE28.14	Develop a treatment plan and document appropriately in a child with upper respiratory symptoms	1	-		bedside	-
PE28.15	Stratify risk in children with stridor using IMNCI guidelines			log book		
PE28.16	Interpret blood tests relevant to upper respiratory problems					
PE28.17	Interpret X-ray of the paranasal sinuses and mastoid; and /or use, written report in case of management. Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in					
					bedside	

		pediatric chest X-rays					
12	PE 34.5	Able to elicit, document and present history of contact with tuberculosis in every patient encounter					
	PE 34.6	Identify a BCG scar	1	-		bedside	-
	PE 34.7	Interpret a Mantoux Test			log book		
	PE 34.8	Interpret a chest radiograph					
	PE 34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis					
	PE 34.10	Discuss the various samples for demonstrating the organism e.g. Gastric Aspirate, Sputum, CSF, FNAC					
	PE 34.11	Perform AFB staining			log book		
13	PE 32.2	Identify the clinical features of Down Syndrome			1		
	PE 32.3	Interpret normal Karyotype and recognize Trisomy 21					
	PE 32.5	Counsel parents regarding 1. Present child 2. Risk in the next pregnancy					



	PE 32.7	Identify the clinical features of Turner Syndrome					
	PE 32.8	Interpret normal Karyotype and recognize Turner Karyotype					
	PE 32.12	Identify the clinical features of Klinefelter Syndrome					
	PE 32.13	Interpret normal Karyotype and recognize the Klinefelter Karyotype					

**3<sup>RD</sup> MBBS PART II CLINICAL POSTING**  
**DEPARTMENT OF PAEDIATRICS**  
**Total: 24(4weeks, 6days per week)**  
**Each clinical posting (CP) Duration: 3hr.**

CP- Clinical posting; C – Minimum number of certification required; L -logbook

No	COD E	COMPETENCY	CP	C	L	T/L method	Other
1	PE 23.7	Elicit appropriate history for a cardiac disease, analyze the symptoms e.g. breathlessness, chest pain, tachycardia, feeding difficulty, failing to thrive, reduced urinary output, swelling, syncope, cyanotic spells, Suck rest cycle, frontal swelling in infants.	1	-	-	Bedside	-
	PE 23.8	Identify external markers of a cardiac disease e.g. Cyanosis, Clubbing, dependent edema, dental caries, arthritis, erythema rash, chorea, subcutaneous nodules, Osler node, Janeway lesions and document					

PE 23.9	Record pulse, blood pressure, temperature and respiratory rate and interpret as per the age						
PE 23.10	Perform independently examination of the cardiovascular system – look for precordial bulge, pulsations in the precordium, JVP and its significance in children and infants, relevance of percussion in Pediatric examination, Auscultation and other system examination and document						
PE 23.11	Develop a treatment plan and prescribe appropriate drugs including fluids in cardiac diseases, anti –failure drugs, and inotropic agents						
PE 23.12	Interpret a chest X ray and recognize Cardiomegaly	1	-	Logbook	Bedside / Skill lab	<b>RADIOLOGY</b>	
PE 23.13	Choose and Interpret blood reports in Cardiac illness						
PE 23.14	Interpret Pediatric ECG						
PE 23.15	Use the ECHO reports in management of cases						
PE 23.18	Demonstrate empathy while dealing with children with cardiac diseases in every						AETCOM

		patient encounter					
2	PE 29.10	Elicit, document and present the history related to Hematology	1	-	-	Bedside	-
	PE 29.11	Identify external markers for hematological disorders e.g. Jaundice, Pallor, Petechiae, Purpura, Ecchymosis, Lymphadenopathy, bone tenderness, loss of weight, Mucosal and large joint bleed.					
	PE 29.12	Perform examination of the abdomen, demonstrate Organomegaly.					
	PE 29.13	Analyze symptoms and interpret physical signs to make a provisional /differential diagnosis.					
	PE 29.14	Interpret CBC, LFT					
	PE 29.15	Perform and Interpret peripheral smear.	1	-	Logbook	DOAP/ Bedside/ Skill lab	
	PE 29.19	Counsel and educate patients about prevention and treatment of anemia.					
PE 29.17	Demonstrate performance of bone marrow aspiration in mannequin.						

	PE 29.18	Enumerate the referral criteria for Hematological conditions						
3	PE 21.8	Elicit, document and present a history pertaining to diseases of the Genitourinary tract	1	-	-	Bedside	-	
	PE 21.9	Identify external markers for Kidney disease, like Failing to thrive, hypertension, pallor, Icthyosis, anasarca			Logbo ok	Bedside		
	PE21. 10	Analyze symptom and interpret the physical findings and arrive at an appropriate provisional differential diagnosis						
	PE 21.11	Perform and interpret the common analytes in a Urine examination	1	-	-	Bedside		
	PE 21.12	Interpret report of Plain X Ray of KUB			Logbo ok	Bedside/skill lab		
	PE 21.13	Enumerate the indications for and Interpret the written report of Ultra sonogram of KUB						<b>RADIOLO GY</b>
	PE	Recognize common surgical conditions of			-			<b>SURGER</b>

	21.14	the abdomen and genitourinary system and enumerate the indications for referral including acute and subacute intestinal obstruction, appendicitis, pancreatitis, perforation intussusception, Phimosis, undescended testis, Chordee, hypospadias, Torsion testis, hernia Hydrocele, Vulval Synechia					<b>Y</b>
	PE 21.16	Counsel / educate a patient for referral appropriately			Logbook		AETCOM
4	PE 22.2	Counsel a patient with Chronic illness			Logbook	Bedside	
5	PE 30.18	Demonstrate the correct method for physical examination of CNS including identification of external markers. Document and present clinical findings	1	-	-	Bedside	-
	PE 30.19	Analyse symptoms and interpret physical findings and propose a provisional / differential diagnosis					
	PE 30.20	Interpret and explain the findings in a CSF analysis	1	-	Logbook	Bedside/skill lab	-
	PE 30.23	Perform in a mannequin lumbar puncture. Discuss the indications, contraindication of the procedure					
	PE	Interpret the reports of EEG, CT, MRI	1				<b>RADIOLO</b>

	30.22						<b>GY</b>
	PE 30.21	Enumerate the indication and discuss the limitations of EEG, CT, MRI			-		
	PE3.3	Assessment of a child with developmental delay- elicit document and present history	1	-	-	bedside	-
	PE3.4	Counsel a parent of a child with developmental delay			Logbook	DOAP	
6	PE 31.2	Recognize the clinical signs of Allergic Rhinitis	1	-	-	Bedside	<b>ENT</b>
	PE 31.4	Identify clinical features of atopic dermatitis and manage					
	PE 31.6	Recognize symptoms and signs of asthma in a child					
	PE 31.7	Develop a treatment plan for a child with appropriate to the severity and clinical presentation					
	PE 31.9	Interpret CBC and CX Ray in Asthma					-
	PE 31.11	Observe administration of Nebulization			Logbook	DOAP	
7	PE 33.2	Recognize the clinical signs of Hypothyroidism and refer	1	-	-	Bedside/ skill lab	-
	PE	Interpret and explain neonatal thyroid					

	33.3	screening report					
	PE 33.5	Interpret Blood sugar reports and explain the diagnostic criteria for Type 1 Diabetes	1	-		Bedside /skill lab	-
	PE 33.6	Perform and interpret Urine Dip Stick for Sugar			Logbook	DOAP	
	PE 33.7	Perform genital examination and recognize Ambiguous Genitalia and refer appropriately	1	-	-	Bedside/skill lab	-
	PE 33.9	Perform Sexual Maturity Rating (SMR) and interpret					
	PE 33.10	Recognize precocious and delayed Puberty and refer			Logbook		
	PE 33.11	Identify deviations in growth and plan appropriate referral			Logbook	Bedside	-
8	PE 27.10	Observe the various methods of administering Oxygen	1		Logbook	Bedside	-
	PE 27.14	Assess emergency signs and prioritize			-	DOAP/ skill lab	
	PE 27.15	Assess airway and breathing: recognize signs of severe respiratory distress. Check for cyanosis, severe chest in drawing, grunting		3			
	PE	Assess airway and breathing.		3			



27.16	Demonstrate the method of positioning of an infant & child to open airway in a simulated environment					
PE 27.17	Assess airway and breathing: administer oxygen using correct technique and appropriate flow rate	1	3	-	DOAP/ skill lab	-
PE 27.18	Assess airway and breathing: perform assisted ventilation by Bag and mask in a simulated environment		3			
PE 27.19	Check for signs of shock i.e. pulse, Blood pressure, CRT		3			
PE 27.20	Secure an IV access in a simulated environment	1	3	-	DOAP/ skill lab	-
PE 27.21	Choose the type of fluid and calculate the fluid requirement in shock		3			
PE 27.22	Assess level of consciousness & provide emergency treatment to a child with convulsions/ coma - Position an unconscious child - Position a child with suspected trauma - Administer IV/per rectal Diazepam for a convulsing child in a simulated environment	1	3	-	DOAP/ skill lab	-
PE 27.23	Assess signs of severe dehydration	1	3	-		-

9	PE 27.27	Assess for hypothermia and maintain temperature		-		Skill lab	
	PE 27.28	Provide BLS for children in manikin	1	3	-	Skill lab	-
	PE 27.30	Demonstrate confidentiality with regard to abuse	1	-	Log book	DOAP/ skill lab	
	PE 27.31	Assess child for signs of abuse					
	PE 27.32	Counsel parents of dangerously ill/ terminally ill child to break a bad news	1	-	-		-
	PE 27.33	Obtain Informed Consent					
	PE 27.34	Willing to be a part of the ER team					
	PE 27.35	Attends to emergency calls promptly					

## UNIVERSITY EXAMINATION PATTERN

<b>Theory:</b>		
Number of papers- One paper		
Time – 3 hours		
Distribution of marks		
2 Long answers questions	2 x 10	<b>20 Marks</b>
10 Short answer questions	10 x 5	<b>50 Marks</b>
5 Brief answer questions	5 x 2	<b>10 Marks</b>
20 Multiple Choice Questions	20 x 1	<b>20 Marks</b>
<b>TOTAL</b>		<b>100 Marks</b>
<b>Practical:</b>		
Distribution of marks		
Long case – One case	1 x 20	<b>20 Marks</b>
Short case – Two cases	2 x 10	<b>20 Marks</b>
Spotters -Three	3x 5	<b>15 Marks</b>
Viva (4 stations)	4 x 10	<b>40 Marks</b>
Log Book and Record		<b>05 Marks</b>
<b>TOTAL</b>		<b>100 Marks</b>
Long case – Paediatric case Short case- one Paediatric case and one Neonatal case Viva – arranged as 4 stations <ul style="list-style-type: none"> <li>• Vaccines and emergency drugs,</li> <li>• X ray interpretation,</li> <li>• Nutrition,</li> <li>• Commonly used equipment for Paediatric and Neonatal procedures</li> </ul>		
<b>TOTAL</b>		<b>200 Marks</b>

## **Eligibility criteria to appear for University examination:**

**Marks Requirement:** 50% marks combined in theory and practical (not less than 40% in each) in any internal assessment examination for eligibility to appear for University examinations. The student has to attend the 4<sup>th</sup> internal assessment examination (Pre Final) without fail.

### **Attendance Requirements:**

80% in Clinics in 2<sup>nd</sup> Professional Year (Phase II)

75% in Theory and 80% in clinics in 3<sup>rd</sup> Professional Year (Phase III –Part 1)

75% in Theory and 80% in clinics in 3<sup>rd</sup> Professional Year (Phase III –Part II)

**Logbook:** Learners must have completed the required certifiable competencies and complete the log book appropriate for 3<sup>rd</sup> Professional Part 2 Phase of training to be eligible for appearing at the final university examination.

## **Eligibility criteria to pass (Final) University examination**

A candidate shall obtain mandatory 50% marks in University conducted examination separately in Theory and Practical (practical = clinical + viva) [theory=theory paper only] in order to be declared as passed.

**Distribution of marks for the question paper (Theory) for  
University examinations**

**Guidelines for setting Paediatrics question paper:**

1. Blueprinting with respect to allocation of marks to each topic must be followed in the question paper.
2. Long essay and short notes questions should be structured. It is essential to allocate marks to individual parts of the question.
3. Maximum marks allocated to each topic in the blue print may vary by +/- 2 marks in the question paper to accommodate for the 5 and 2 markers and making a total of 100 marks.
4. All questions must be given within the prescribed competencies by CBME.

**Blueprinting for Question Paper**

Maximum marks: 100 including MCQ's

S. No	Topic	Weightage	Marks	Types of questions
1	General Paediatrics	20%	20	LAQ,SAQ,BAQ,MCQ
2	Nutrition	10%	10	LAQ,SAQ,BAQ,MCQ
3	Newborn	20%	20	LAQ,SAQ,BAQ,MCQ
4	Communicable diseases	15%	15	LAQ,SAQ,BAQ,MCQ
5	Systemic Paediatrics	20%	20	LAQ,SAQ,BAQ,MCQ
6	Emergency Paediatrics	10%	10	SAQ, BAQ,MCQ
7	Miscellaneous	5%	5	SAQ,BAQ,MCQ
	<b>TOTAL</b>	<b>100%</b>	<b>100</b>	

LAQ- Long answer question, SAQ- short answer question, BAQ brief answer question, MCQ multiple choice question

**TOPICS**

1. General Paediatrics - Introduction to Pediatrics  
Normal Growth and its Disorders  
Development  
Adolescent Health & Development
2. Nutrition - Fluid and Electrolyte Disturbances

		Nutrition
		Micro-nutrients in Health and Disease
3. Newborn Infants		
4. Communicable diseases -		Immunization and Immunodeficiency
		Infections and Infestations
5. Systemic diseases -		Diseases of Gastrointestinal System &
		Liver Hematological Disorders
		Otolaryngology
		Disorders of Respiratory System
		Disorders of Cardiovascular System
		Disorders of Kidney and Urinary Tract
		Endocrine and Metabolic Disorders
		Central Nervous System
		Neuromuscular Disorders
		Childhood Malignancies
		Rheumatological Disorders
		Genetic Disorders
		Inborn Errors of Metabolism
6. Emergency Paediatrics -		Poisonings, Injuries and Accidents
		Pediatric Critical Care
7. Miscellaneous -		Common Medical Procedures
		Rational Drug Therapy
		Integrated Management of Neonatal &
		Childhood Illness
		Rights of Children

**THEORY EXAMINATION BLUE PRINT**  
**ONE PAPER OF 100 MARKS**

Type of questions	Marks per questions	Number of questions	Total marks
Long Answer Questions ( LAQ / ESSAY ) (Structured)	10	2	20
Short Answer Questions(SAQ)	5	10	50
Brief Answer Questions(BAQ)	2	10	20
MCQ	1	10	10

**Long answer questions (LAQ)**

The questions should make the students to apply higher cognitive skills. The questions should be structured and marks breakup should be provided

**Short answer questions (SAQ)**

These structured questions provide opportunity to answer in specific within in a short time.

**Brief answer questions (BAQ)** These questions are based on applied aspects and require answers to be given very precisely

**Multiple choice questions (MCQ) - Analytical**

