JAWAHAR MEDICAL FOUNDATION'S
A.C.P.M. MEDICAL COLLEGE & HOSPITAL
Email : deanacpm@gmail.com
acpmmcdhule@gmail.com
website : www.jmfacpm.com
Sakri Road, Dhule - 424001 (Maharashtra)
Ph.No.: 02562 - 276317,18,19 Mob. 8686585839

Relevant Documents Pertaining To Learning Outcomes And Graduate Attributes w.e.f. 2019

[In accordance to CBME Curriculum prescribed by National Medical Commission New Delhi and Maharashtra University of Health Sciences, Nashik, M.S.]

How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created by subject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. They must be used with reference to and in the context of the Regulations.

Section 1

Competencies for the Indian Medical Graduate

Section 1 - provides the global competencies extracted from the Graduate Medical Education Regulations, 2018. The global competencies identified as defining the roles of the **Indian Medical Graduate** are the broad competencies that the learner has to aspire to achieve; teachers and curriculum planners must ensure that the learning experiences are aligned to this Manual.

Extract from the Graduate Medical Education Regulations, 2018

2. Objectives of the Indian Graduate Medical Training Programme

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

2.1. National Goals

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

(a) recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.

(b) learn every aspect of National policies on health and devote herself/himself to its practical implementation.

(c) achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.

(d) develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.

(e) become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

2.2. Institutional Goals

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

(a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

(b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.

(c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.

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

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

(f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

(i) Family Welfare and Maternal and Child Health (MCH);

(ii) Sanitation and water supply;

(iii) Prevention and control of communicable and non-communicable diseases;

(iv) Immunization;

(v) Health Education;

(vi) Indian Public Health Standards (IPHS) at various level of service delivery;

(vii) Bio-medical waste disposal; and

(viii) Organizational and or institutional arrangements.

(g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.

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

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

(j) be competent to work in a variety of health care settings.

(k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed in Table 11 Certifiable procedural skills – A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate, as given in the Graduate Medical Education Regulations, 2018

2. 3. Goals for the Learner

In order to fulfil this goal, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

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

2.3.2. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.

2.3.3. Communicator with patients, families, colleagues and community.

2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.

2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

3. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

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

3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.

3.1.2. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.

3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.

3.1.5. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.6. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.

3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.

3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.

3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.

3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:

i) Disease prevention,

ii) Health promotion and cure,

iii) Pain and distress alleviation, and

iv) Rehabilitation and palliation.

3.1.13 Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.

3.1.14 Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.

3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

3*.2.* ***Leader and member of the health care team and system***

3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.

3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.

3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.

3.2.4 Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.

3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.

3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

3.3. ***Communicator with patients, families, colleagues and community***

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

3.3.2 Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.

3.3.3 Demonstrate ability to communicate with patients in a manner respectful of patient’s preferences, values, prior experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in amanner that encourages participation and shared decision-making.

3.4. Lifelong learner committed to continuous improvement of skills and knowledge

3.4.1. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4. Demonstrate ability to search (including through electronic means), and critically revaluate the medical literature and apply the information in the care of the patient.

3.4.5. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

3.5. *Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession*

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

3.5.2. Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3. Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4. Abide by prescribed ethical and legal codes of conduct and practice.

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

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Course Specific Outcomes of MBBS Program

(Prescribed by Maharashtra University of Health Sciences, Nashik as per CBME Curriculum of National Medical Commission Regulations GMER 2019)

Course Content

Human Anatomy **First M.B.B.S. (From August 2019)**

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page no.41-90)

Teaching Lectures(hours)-220 Self directed learning (hours)- 40 **hours**

Small group teachings/tutorials/Integrated teaching/Practicals(hours)-415 Total(hours) -675 Early clinical exposure(hours)- 90 to be divided equally in all three subjects .

Competency No.	Topics & Subtopics
1	**Anatomical Terminology**
AN1.1	Anatomical position planes, movement in our body
AN1.2	Composition of bone & bone marrow
2	**General features of bones & Joints**
AN2.1	Parts, blood and nerve supply of long bone
AN2.2	Laws of ossification
AN2.3	Features of sesamoid bone
AN2.4	Cartilage
AN2.5	Types of Joints & examples
AN2.6	Nerve supply of joints & Hilton's law
3	**General features of Muscle**
AN3.1	Classification of muscles
AN3.2	Parts of skeletal muscle
AN3.3	Shunt and spurt muscles

4	**General features of skin and fascia**
AN4.1	Types of skin& dermatomes in body
AN4.2	Structure & function of skin
AN4.3	Superficial fascia
AN4.4	Deep fascia
AN4.5	Principles of skin incisions
5	**General features of the cardiovascular system**
AN5.1	Blood Lymph & vascular system
AN5.2	Pulmonary and systemic circulation
AN5.3	Arteries & Veins
AN5.4	Functional Classification of Vessels
AN5.5	Portal System
AN5.6	Anastomoses
AN5.7	Meta-arterioles, sphincters & AV anastomoses
AN5.8	Thrombosis, infarction & aneurysm
6	**General Features of lymphatic system**
AN6.1	Components & functions of Lymphatic system
AN6.2	Lymph capillaries & Circulation
AN6.3	Lymphoedema & tumor spread

7	**Introduction to the nervous system**
AN7.1	General plan & components of CNS, ANS, PNS.
AN7.2	Components of nervous tissue & functions
AN7.3	Classifications & parts of neuron
AN7.4	Typical spinal nerve
AN7.5	Principles of innervation of muscles
AN7.6	Loss of innervation of a muscle and applied anatomy
AN7.7	Synapse –types
AN7.8	Ganglia

8	**Features of individual bones (Upper Limb)**
AN8.1	Bones of upper limb
AN8.2	Joints formed by bones of upper limb
AN8.3	Peculiarities of clavicle
AN8.4	Muscle attachments of bones
AN8.5	Articulated hand
AN8.6	Scaphoid fracture
9	**Pectoral region**
AN9.1	Pectoralis major & pectoralis minor
AN9.2	Breast
AN9.3	Development of breast

10	**Axilla, Shoulder and Scapular region**
AN10.1	Boundaries & Contents of axilla
AN10.2	Axillary artery & Vein
AN10.3	Brachial plexus
AN10.4	Axillary lymphnodes
AN10.5	Variation in brachial plexus
AN10.6	Erb's Palsy & klumpke's paralysis
AN10.7	Enlarged axillary lymph nodes
AN10.8	Trapezius and latissimus dorsi
AN10.9	Anastomosis around the scapula & triangle of auscultation
AN10.10	Deltoid and rotator cuff muscles
AN10.11	Serratus anterior
AN10.12	Shoulder joint
AN10.13	Axillary nerve injury during IM injections

11	**Arm & Cubital fossa**
AN11.1	Biceps & triceps brachii
AN11.2	Important nerves and vessels in arm
AN11.3	Venipuncture of cubital veins
AN11.4	Saturday night palsy

AN11.5	Cubital fossa
AN11.6	Elbow joint anastomosis
12	**Forearm & hand**
AN12.1	Muscle groups of ventral forearm
AN12.2	Nerves & vessels of forearm
AN12.3	Flexor retinaculum
AN12.4	Carpal tunnel syndrome
AN12.5	Muscles of hand. movements of thumb
AN12.6	Movements of thumb
AN12.7	Vessels & nerves in hand
AN12.8	Claw hand
AN12.9	Fibrous flexor sheaths, synovial sheaths
AN12.10	Infection of Fascial spaces of palm
AN12.11	Muscle groups of dorsal forearm
AN12.12	Nerves and vessels of back of forearm
AN12.13	Wrist drop
AN12.14	Extensor retinaculum
AN12.15	Extensor expansion formation
13	**General Features, Joints, radiographs & surface marking**
AN13.1	Fascia, compartments, veins & lymphatic of upper limbs
AN13.2	Dermatomes of upper limbs
AN13.3	Joints of upper limb Elbow, Radio-ulnar, wrist & first carpometacarpal joint)

AN13.4	Joints of upper limb Sternoclavicular, Acromioclavicular, Carpometacarpal joints & Metacarpophalangeal joints
AN13.5	Radiographs of UL
AN13.6	Bony landmarks of UL
AN13.7	Surface projection of vessels, testing of muscle
AN13.8	Development of UL
14	**Features of individual bones (Lower Limb)**
AN14.1	Features of given bones
AN14.2	Joints formed by given bone
AN14.3	Importance of ossification of femur & tibia
AN14.4	Articulated foot
15	**Front & Medial side of thigh**
AN15.1	Nerves & vessels of thigh
AN15.2	Major Muscles
AN15.3	Femoral triangle
AN15.4	Psoas abscess & Femoral hernia
AN15.5	Adductor canal
16	**Gluteal region & back of thigh**

AN16.1	Nerves and vessels
AN16.2	Sciatic nerve injury
AN16.3	Trendelenburg sign
AN16.4	Hamstrings muscle
AN16.5	Nerve & vessels of back of thigh
AN16.6	Popliteal fossa
17	**Hip Joint**
AN17.1	Details of hip joint
AN17.2	Fracture neck of femur
AN17.3	Dislocation
18	**Knee joint, Anterolateral compartment of leg & dorsum of foot**
AN18.1	Major muscles
AN18.2	Nerves & vessels
AN18.3	Foot drop
AN18.4	Knee joint
AN18.5	Locking and unlocking
AN18.6	Knee joint injuries with its applied anatomy
AN18.7	Osteoarthritis
19	**Back of leg & sole**
AN19.1	Major muscles
AN19.2	Nerves & Vessels

AN19.3	Peripheral heart
AN19.4	Rupture of calcaneal tendon
AN19.5	Arches of foot
AN19.6	Flat & club foot
AN19.7	Metatarsalgia & plantar fasciitis
20	**General Features, joints, radiographs & surface marking**
AN20.1	Tibiofibular & ankle joint
AN20.2	Subtalar and transverse tarsal joints
AN20.3	Fascia, venous drainage, lymphatic Retinacula & dermatomes of Lower limb
AN20.4	Enlarged inguinal lymph nodes
AN20.5	Varicose veins & deep vein thrombosis
AN20.6	Radiographs of lower limb
AN20.7	Bony landmarks
AN20.8	Vessels of lower limb palpation
AN20.9	Surface projection nerves & veins
AN20.10	Development of lower limb
21	**Thoracic cage**
AN21.1	Sternum,Typical Rib, first Rib & typical thoracic vertebra
AN21.2	A typical Ribs & vertebra
AN21.3	Thoracic inlet, cavity and outlet

AN21.4	Intercostal muscles
AN21.5	Typical intercostal nerve
AN21.6	Intercostal vessels
AN21.7	A typical intercostal nerve subcostal artery, superior Artery
AN21.8	Joints of thorax
AN21.9	Mechanics of respiration
AN21.10	Costochondral & interchondral joints
AN21.11	Mediastinum
22	**Heart & Pericardium**
AN22.1	Pericardium
AN22.2	Each chamber of heart
AN22.3	Coronary arteries
AN22.4	Ischemic heart disease
AN22.5	Coronary sinus
AN22.6	Fibrous skeleton of heart
AN22.7	Conducting system of heart
23	**Mediastinum**
AN23.1	Oesophagus
AN23.2	Thoracic duct
AN23.3	Superior venacava , Azygos, hemiazygos & accessory hemiazygos veins
AN23.4	Arch of aorta & descending aorta

AN23.5	Thoracic sympathetic chain
AN23.6	Splanchnic nerves
AN23.7	Lymphatic duct
24	**Lungs & Trachea**
AN24.1	Pleura, Pleural, recess & applied anatomy
AN24.2	Root of lung & bronchial tree
AN24.3	Broncho pulmonary segment
AN24.4	Phrenic nerve
AN24.5	Blood Supply nerve supply Lymphatic drainage of Lungs
AN24.6	Trachea
25	**Thorax**
AN25.1	Draw & label microanatomy of trachea and lung
AN25.2	Development of pleura, lung & heart
AN25.3	Fetal circulation
AN25.4	Atrial septal defect, Ventricular septal defect, Fallot's tetralogy & Tracheo-oesophageal fistula
AN25.5	Transposition of great vessels, Dextrocardia, Patent ductus arteriosus & Coarctation of aorta
AN25.6	Development of aortic arch arteries, SVC, IVC & coronary Sinus.
AN25.7	Chest Radiograph AP & Lateral view
AN25.8	Barium swallow
AN25.9	Surface projection of pleura heart lungs
26	Skull osteology

AN26.1	Anatomy of skull bones
AN26.2	Skull Norma
AN26.3	Interior of skull
AN26.4	Mandible
AN26.5	Typical and Atypical cervical vertebrae (Atlas & axis)
AN26.6	Bones that ossify in membrane
AN26.7	7th cervical vertebra
27	Scalp
AN27.1	Scalp, Blood supply,nerve supply, Layers & Surgical importance
AN27.2	Emmissary veins
28	Face & parotid region
AN28.1	Facial muscles
AN28.2	Nerve supply of facial muscles
AN28.3	Facial vessels
AN28.4	Facial Nerve
AN28.5	Cervical Lymph node
AN28.6	Superficial muscles of face
AN28.7	Facial Nerve Palsy
AN28.8	Deep facial vein
AN28.9	Parotid gland
AN28.10	Frey’s syndrome Can be covered with 28.3

29	**Posterior triangle of neck**
AN29.1	Sternocleidomastoid
AN29.2	Erb's & Klumpke's palsy
AN29.3	wry neck
AN29.4	Omohyoid, scalenus & levator scapulae
30	**Cranial cavity**
AN30.1	Cranial fossa
AN30.2	Foramina
AN30.3	Dural venous sinuses
AN30.4	Cavernous sinuses
AN30.5	Visual Pathways
31	**Orbit**
AN31.1	Extra ocular muscles
AN31.2	Nerves and vessels in the orbit
AN31.3	Horner's syndrome
AN31.4	Lacrimal apparatus
AN31.5	3rd, 4th & 6th Cranial Nerves
32	**Anterior Triangle**
AN32.1	Anterior triangle
AN32.2	Carotid, muscular, digastric and submental triangles
33	**Temporal and Infratemporal regions**

AN33.1	Temporal & infratemporal fossae
AN33.2	Muscle of mastication
AN33.3	Temporomandibular joint
AN33.4	Pterygoid venous plexus
AN33.5	Dislocation with Temporomandibular joint
34	**Submandibular region**
AN34.1	Submandibular Salivary Gland & Ganglion
AN34.2	Submandibular stones
35	**Deep Structures in the neck**
AN35.1	Deep Cervical Fascia
AN35.2	Thyroid gland
AN35.3	Subclavian Artery
AN35.4	internal jugular & Brachiocephalic vein
AN35.5	Cervical lymph nodes
AN35.6	Cervical Sympathetic chain
AN35.7	IX, X, XI, & XII, Cranial nerve
AN35.8	Thyroid Swellings
AN35.9	Clinical features of compression by Cervical rib
AN35.10	Fascial Spaces of neck
36	**Mouth, pharynx & palate**

AN36.1	1) Soft palate 2) Palatine tonsil
AN36.2	Waldeyer's Lymphatic Ring
AN36.3	Pyriform fossa & Applied
AN36.4	Tonsils & Adenoids with applied anatomy
AN36.5	Clinical significance of Kilian's dehiscence
37	**Cavity of Nose**
AN37.1	Nasal septum, lateral wall of Nose,
AN37.2	Paranasal sinuses
AN37.3	Maxillary sinus –Applied Anatomy
38	Larynx
AN38.1	Intrinsic & Extrinsic muscles of larynx
AN38.2	Anatomical aspects of laryngitis
AN38.3	Recurrent laryngeal nerve Injury

39	**Tongue**
AN39.1	Tongue
AN39.2	XII Cranial hypoglossal Applied Anatomy
40	**Organs of hearing and equilibrium**
AN40.1	External ear

AN40.2	Middle ear
AN40.3	Internal ear
AN40.4	Applied Anatomy otitis externa / media
AN40.5	Myringotomy
41	**Eyeball**
AN41.1	Eyeball
AN41.2	Eyeball applied cataract, glaucoma & central retinal artery occlusion
AN41.3	Intraocular muscles
42	**Back region**
AN42.1	Vertebral canal
AN42.2	Sub occipital triangle
AN42.3	Semi spinalis capitis & Splenius Capitis
43	**Head & neck joints, Histology, Development , Radiography & surface marking**
AN43.1	Movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint
AN43.2	Pituitary , Thyroid, parathyroid & Salivary gland tongue, Epiglottis, Cornea, Retina
AN43.3	Microanatomy of olfactory epithelium, Eyelid, lip. Optic nerve, pineal gland
AN43.4	Development and anomalies of face, palate, tongue, brachial apparatus pituitary gland, Thyroid, Eye
AN43.5	Muscles of facial Expression, extraocular muscles palpation of carotid, superficial temporal, facial arteries, location of internal jugular & Ext. jugular veins. hyoid bone, thyroid cartilage, cricoid cartilage

AN43.6	Surface anatomy thyroid, parotid gland common carotid artery, IJV, SCV, EJV, facial artery.
AN43.7	X-Ray skull AP & Lat. view
AN43.8	Carotid & vertebral Angiogram
AN43.9	Structures in carotid & vertebral angiogram
44	**Anterior abdominal wall**
AN44.1	Planes, Quadrants of abdomen.
AN44.2	Fascia, nerves & Blood supply of ant. Abdominal wall.
AN44.3	Rectus sheath
AN44.4	Inguinal canal
AN44.5	Inguinal Hernia
AN44.6	Muscles of Ant. Abdominal wall
AN44.7	Common Abdominal Incisions
45	**Posterior abdominal wall**
AN45.1	Thoracolumbar fascia
AN45.2	Lumbar plexus
AN45.3	Back muscles
46	**Male external genitalia**
AN46.1	Testis & its descent
AN46.2	Epididymis
AN46.3	Penis
AN46.4	Varicocele
AN46.5	Phimosis & circumcision

47	**Abdominal cavity**
AN47.1	Lesser & Greater sac
AN47.2	Peritoneal folds & pouches
AN47.3	Ascites & peritonitis
AN47.4	Sub phrenic Abscess
AN47.5	Major Viscera
AN47.6	Accessory spleen, Kehr's sign, Vagotomy, Liver biopsy
AN47.7	Calot's triangle
AN47.8	Portal vein, Inferior Vena Cava, Renal vein
AN47.9	Abdominal aorta, coeliac trunk
AN47.10	Portosystemic Anastomosis
AN47.11	Portal Hypertension
AN47.12	Nerve plexus post. Abdominal wall.
AN47.13	Thoraco abdominal diaphragm
AN47.14	Diaphragmatic Hernia
48	**Pelvic wall and viscera**
AN48.1	Muscles of pelvic diaphragm
AN48.2	Male & female pelvic viscera
AN48.3	Internal iliac Artery
AN48.4	Sacral plexus
AN48.5	BPH, Uterine anomalies anal fistula
AN48.6	Automatic bladder

AN48.7	BPH & prostate cancer
AN48.8	P/V & P/R examination
49	**Perineum**
AN49.1	Sup. & deep perineal pouch
AN49.2	Perineal body
AN49.3	Perineal Membrane in male & female
AN49.4	Ischiorectal fossa
AN49.5	Perineal tear, episiotomy perineal abscess & Anal fissure
50	**Vertebral Column**
AN50.1	Curvatures of vertebral Column
AN50.2	Intervertebral joint & sacroiliac joint, Pubic symphysis
AN50.3	Lumbar puncture
AN50.4	Scoliosis, lordosis, PID, Spina bifida, Spondylolisthesis
51	**Sectional Anatomy**
AN51.1	Cross section at T8, T10, & L1
AN51.2	Midsagittal section male & female pelvis
52	**Histology & Embryology**
AN52.1	GIT
AN52.2	Excretory system
AN52.3	Cardiooesophageal junction, Corpus luteum

AN52.4	Development of anterior abdominal wall
AN52.5	Congenital anomalies of Diaphragm
AN52.6	Congenital anomalies of foregut midgut hindgut
AN52.7	Urinary System Development
AN52.8	Reproductive system Development
53	**Osteology**
AN53.1	Bone – Identification, anatomical position, articulations & attachments
AN53.2	Bony pelvis
AN53.3	Bones of abdominopelvic region
AN53.4	Clinical importance of bones of abdominopelvic region
54	**Radio diagnosis**
AN54.1	KUB plain X Ray abdomen
AN54.2	(contrast X ray Barium swallow, Barium meal, Barium enema,) Cholecystography, intravenous pyelography & Hysterosalpingography
AN54.3	ERCP, CT abdomen, MRI Arteriography in radio diagnosis of abdomen
55	**Surface marking**
AN55.1	Surface projections of regions and planes of abdomen , superficial inguinal ring, deep inguinal ring, Mc Burney's point, renal angle & murphy's point
AN55.2	Surface marking of stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, lleocaecal junction, Kidneys & Root of mesentery
56	**Meninges & CSF**

AN56.1	Various layers of meninges with its extent & modifications
AN56.2	Formation and circulation of CSF with its applied anatomy
57	**Spinal Cord**
AN57.1	External features of spinal cord
AN57.2	Extent of spinal cord in child & adult with its clinical implication
AN57.3	Transverse section of spinal cord at mid-cervical & midthoracic level
AN57.4	Ascending & descending tracts at mid thoracic level of spinal cord
AN57.5	Describe anatomical basis of syringomyelia
58	**Medulla Oblongata**
AN58.1	External features of medulla oblongata
AN58.2	Transverse section of medulla oblongata at the level of 1) pyramidal decussation 2) sensory decussation 3) ION
AN58.3	Cranial nerve nuclei in medulla oblongata with their functional group
AN58.4	Anatomical basis & effects of medial & lateral medullary Syndrome
59	**Pons**
AN59.1	External features of pons
AN59.2	Transverse section of pons at the upper and lower level
AN59.3	Cranial nerve nuclei in pons with their functional group
60	**Cerebellum**
AN60.1	External & internal features of cerebellum
AN60.2	Connections of cerebellar cortex and intracerebellar nuclei
AN60.3	Anatomical basis of cerebellar dysfunction

61	**Midbrain**
AN61.1	External & internal features of midbrain
AN61.2	Internal features of midbrain at the level of superior & inferior colliculus
AN61.3	Anatomical basis & effects of benedikt's and weber's syndrome
62	**Cranial nerve nuclei & cerebral hemispheres**
AN62.1	Cranial nerve nuclei with its functional component
AN62.2	Surfaces, sulci, gyri, poles & functional areas of cerebral hemisphere
AN62.3	White matter of cerebrum
AN62.4	Parts & major connections of basal ganglia & limbic lobe
AN62.5	Boundaries, parts, gross relation, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus
AN62.6	Formation, branches & major areas of distribution of circle of willis
63	**Ventricular System**
AN63.1	Parts, boundaries & features of 3^{rd}, 4^{th} & lateral ventricle
AN63.2	Describe anatomical basis of congenital hydrocephalus
64	**Histology & Embryology**
AN64.1	Micro anatomical features of spinal cord, cerebellum & cerebrum
AN64.2	Development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere& cerebellum

AN64.3	Various types of open neural tube defects with its embryological basis
65	**Epithelium histology**
AN65.1	Types of epithelium under the microscope & describe the various types that correlate to its function
AN65.2	Ultrastructure of epithelium
66	**Connective tissue histology**
AN66.1	Various types of connective tissue with functional correlation
AN66.2	Ultrastructure of connective tissue
67	**Muscle histology**
AN67.1	Various types of muscle under the microscope
AN67.2	Classification of various types of muscle and describe the structure-function correlation of the same
AN67.3	Ultrastructure of muscular tissue
	Nervous tissue histology
AN68.1	Multipolar & unipolar neuron, ganglia, peripheral nerve
AN68.2	Structure-function correlation of neuron
AN68.3	Ultrastructure of nervous tissue
69	**Blood Vessels**
AN69.1	Elastic & muscular blood vessels, capillaries under the microscope
AN69.2	Various types and structure-function correlation of blood vessel
AN69.3	Describe the ultrastructure of blood vessels
70	**Glands & Lymphoid tissue**
AN70.1	Various exocrine gland under the microscope & distinguish between serous, mucous and mixed acini

AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph, node, spleen, thymus, tonsil and correlate the structure with function
71	**Bone & Cartilage**
AN71.1	Bones under the microscope classify various types & describe the structure – Function correlation of the same
AN71.2	Structure of cartilage under the microscope & describe various types and structure-function correlation of the same
	Integumentary system
AN72.3	Skin and its appendages under the microscope and correlate the structure with function
	Chromosomes
AN73.1	Structure of chromosomes with classification
AN73.2	Technique of karyotyping with its applications
AN73.3	Lyon's hypothesis
	Patterns of inheritance
AN74.1	Various modes of inheritance with examples
AN74.2	Pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance
AN74.3	Multifactorial inheritance with examples
AN74.4	Genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & sickle cell anaemia
75	**Principle of Genetics, Chromosomal Aberrations & Clinical Genetics**
AN75.1	Structural and numerical chromosomal aberrations
AN75.2	Mosaics and chimeras with example
AN75.3	Genetic basis & clinical features of prader willi syndrome, Edward syndrome & patau syndrome
AN75.4	Genetic basis of variation : polymorphism and mutation

AN75.5	Principles of genetic counselling
76	**Introduction to embryology**
AN76.1	Stages of human life
AN76.2	Phylogeny, ontogeny, trimester, viability
77	**Gametogenesis and fertilization**
AN77.1	Uterine changes occurring during the menstrual cycle
AN77.2	Synchrony between the ovarian and menstrual cycles
AN77.3	Spermatogenesis and oogenesis along with diagrams
AN77.4	Stages and consequences of fertilization
AN77.5	Anatomical principles underlying contraception
AN77.6	Teratogenic influences, Fertility & sterility, surrogate motherhood, social significance of “sex-ratio”.
78	**Second week of development**
AN78.1	Cleavage and formation of blastocyst
AN78.2	Development of trophoblast
AN78.3	Process of implantation & common abnormal sites of implantation
AN78.4	Formation of extra –embryonic mesoderm and coelom, bilaminar disc and prochordal plate
AN78.5	Abortion; deciducal reaction, pregnancy test
79	**3rd to 8th week of development**
AN79.1	Formation & fate of the primitive streak
AN79.2	Development of trophoblast , fate of Notochord
AN79.3	Process of neurulation

AN79.4	Describe the development of somites and intra-embryonic coelom
AN79.5	Embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects
AN79.6	Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein
80	**Fetal membranes**
AN80.1	Formation , functions & fate of chorion; amnion; yolk sac; allantois & decidua
AN80.2	Formation & structure of umbilical cord
AN80.3	Formation of placenta, its physiological functions, foetomaternal circulation & placental barrier
AN80.4	Embryological basis of twinning in monozygotic & dizygotic twins
AN80.5	Role of placental hormones in uterine growth & parturition
AN80.6	Embryological basis of estimation of fetal age.
AN80.7	Various types of umbilical cord attachments
81	**Prenatal Diagnosis**
AN81.1	Various methods of prenatal diagnosis
AN81.2	Indications, process and disadvantages of amniocentesis
AN81.3	Indications, process and disadvantages of chorion villus biopsy
82	**Ethics in anatomy**
AN82.1	Respect and follow the corrected procedure when handling cadavers and other biologic tissue

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: First MBBS Subject: Anatomy

Paper	Section	Topics
I	A	MCQs on all topics of the paper I
	B & C	Superior extremity
		General embryology
		Genetics
		Head , neck , face
		Central nervous system
		One short answer question on AETCOM module 1.1 & 1.5
		Scenario based / application questions can be on any topic of the paper I
		For long answer question and scenario based / application questions , region will not be repeated
II	A	MCQs on all topics of the paper II
	B & C	General Anatomy
		General histology
		Gross Anatomy of Abdomen and Pelvis
		Gross Anatomy of Inferior extremity
		Thorax
		Scenario based / application questions can be on any topic of the paper II
		For long answer question and scenario based / application questions , region will not be repeated

Internal Assessment

Anatomy

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

Sr. No	**I-Exam (December)**			**II-Exam (March)**		
	Theory	Practical (Including 05 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 05 Marks for Journal & Log Book	Total Marks
1	100	50	150	100	50	150

Sr. No	Preliminary Examinations			Sr. No	Remedial internal assessment examination for **Non - eligible** students		
	III-Exam **(July)**				**October**		
	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks		Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
1	200	100	300	1	200	100	300

1. There will be 3 internal assessment examinations in the academic year. The structure of Preliminary examinations should be similar to the structure of University examination.
2. There will be only one additional examination for absent students (due to genuine reason) after approval by the Committee Constituted for the same. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
3. First internal assessment examination will be held in December, second internal assessment examination will be held in March and third internal assessment examination will be held in July.
4. Internal assessment marks for theory and practical will be converted to out of 40. Internal assessment marks, after Conversion, should be submitted to university by 7th of August.
5. The student must secure at least 50% marks for total marks (combined in theory and practical / clinical: not less than 40% marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final university examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.
6. **Remedial internal assessment examination for Non - eligible students**: Student who were not eligible due to less than 50% combined or less than 40% in any theory or practical, will re appear as repeater student for Prelim exam which will be conducted before Supplementary Exam. His/her internal assessment will be calculated on the basis of this Examination marks only. Students who will not be eligible in this Examination will appear with regular batch as repeater student.
7. The internal assessment marks of the remedial examination alone shall be considered and converted into out of 40.
8. Conversion **Formula for calculation of marks in internal assessment examinations**

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% Separately in Theory and Practical, 50% Combined)	
Theory	100	100	200	400	$\frac{\textit{Total marks obtained}}{10}$	16 (minimum)	Total of Theory + Practical Must be 40.
Practical	50	50	100	200	$\frac{\textit{Total marks obtained}}{5}$	16 (minimum)	

9. Conversion formula for calculation of marks in Remedial internal assessment examination

	Remedial Exam (Prelim)	Int. Assess. marks conversion formula (out of 40)	Eligibility to appear for Supplementary Exam. (after conversion out of 40) (40% Separately in Theory and Practical, 50% Combined)	
Theory	200	$\frac{\textit{Total marks obtained}}{5}$	16 (minimum)	Total of Theory + Practical Must be 40.
Practical	100	$\frac{\textit{Total marks obtained}}{2.5}$	16 (minimum)	

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	**Final rounded marks**
15.01 to 15.49	15
15.50 to 15.99	16

First Year MBBS Practical Mark's Structure Internal Assessment Examinations I & II (Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Anatomy Practical										
Seat No.	**Soft Part**	**Micro Anatomy (5 Spots)**	**Micro Anatomy slide for Discussion (1 slide)**	**Hard Part (Bones)**	**Embryology Models**	**Clinical Anatomy Including Genetics charts (2 spots)**	**Journal/ Logbook**	**Radiology**	**Living Anatomy**	**Practical Total**
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Max. Marks	**10**	**05**	**05**	**05**	**05**	**05**	**05**	**05**	**05**	**50**

First Year MBBS Practical Mark's Structure (Prelim)

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

Anatomy													
Practical									Oral/Viva				Total
Seat No.	Soft Part	Micro Anatomy (10 Spots)	Micro Anatomy slides for Discussion (2 slides)	Axial Skeleton	Embryology Models	Clinical Anatomy Including Genetic charts (2 Spots)	Journal /logbook	Total	Appendicular Skeleton	X - ray	Surface Living Anatomy	Total	PR/Oral Total
	A	B	C	D	E	F	G	H	I	J	K	L	M
Max. Marks	25	10	05	10	10	10	10	80	10	05	05	20	100

(Please Note - The above examination pattern will be applicable to the students admitted from Academic Year 2019-20 and onwards, which is informed to all Medical Colleges vide University letter No MUHS /X-1 /UG /1692 /2020 Date: 28/02/2020)

First Year MBBS Practical Mark's Structure (MUHS Exam)

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

Anatomy												
Practical								Oral/Viva				Total
Seat No.	Soft Part	Micro Anatomy (10 Spots)	Micro Anatomy slides for Discussion (2 slides)	Axial Skeleton	Embryology Models	Clinical Anatomy Including Genetic charts (2 Spots)	Total	Appendicular Skeleton	Radiology	Surface Living Anatomy	Total	PR/Oral Total
	A	B	C	D	E	F	G	H	I	J	K	L
Max. Marks	30	10	10	10	10	10	80	10	05	05	20	100

(Please Note - The above examination pattern will be applicable to the students admitted from Academic Year 2019-20 and onwards, which is informed to all Medical Colleges vide University letter No MUHS /X-1 /UG /1692 /2020 Date: 28/02/2020)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year	: **First MBBS** *(applicable w.e.f. Sept. 2020& onwards examinations)*					2. Subject Code	: ***Appendix - a***
3. Subject (PSP)	: **Anatomy / Physiology / Biochemistry**						
(TT)	:						
4. Paper :	: ***I***	5. Total Marks	: **100**	6. Total Time	: **3 Hrs.**	7. Remu. (PS)	: **Rs. 300/-**
						8. Remu. (PM)	: **Rs. 350/-**
9. Web Pattern	: [ ]	10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]	12. Web Old QP	: [ ]

Instructions:

SECTION "A" MCQ

1) *Fill ● (dark) the appropriate empty circle below the question number once only.*
2) *Use **blue/black** ball point pen only.*
3) *Each Question carries **One mark.***
4) *A student will not be allotted any marks if he/she overwrites, strikes out or puts white ink on the circle once filled (darkened)*
5) *Do not write anything on the blank portion of the question paper if written anything, such type of act will be considered as an attempt to resort to unfair means.*

SECTION "A" MCQ (20 Marks)

Q1. Multiple Choice Questions (Total 20 MCQ of One mark each) ***(4 MCQ Should be clinical application based)*** (20x1=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answer book for all sections.*

SECTION "B" (80 Marks)

2. Brief answer questions (Any Ten out of Eleven) (10x 2= 20)

a) b) c) d) e) f) g) h) i) j) k)

3. Short Answer Questions (Any Eight out of Nine) (8x5= 40)

One SAQ has to be on AETCOM Module ***(For Anatomy 1.1, 1.5, For Physiology 1.2.,1.3&For Biochemistry, 1.4) &***
Minimum 2 SAQs should be Case Based Questions/ Clinically applied Questions.

a) b) c) d) e) f) g) h) i)

4. Long Answer Questions (Any Two out of Three) (2x 10= 20)

a) b) c)

Note: All questions should be structured .Wherever necessary; split up of marks should be specified.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year	: **First MBBS** *(applicable w.e.f. Sept. 2020& onwards examinations)*					2. Subject Code	: ***Appendix - a***
3. Subject (PSP)	: **Anatomy / Physiology / Biochemistry**						
(TT)	:						
4. Paper :	: ***II***	5. Total Marks	: **100**	6. Total Time	: **3 Hrs.**	7. Remu. (PS)	: **Rs. 300/-**
						8. Remu. (PM)	: **Rs. 350/-**
9. Web Pattern	: [ ]	10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]	12. Web Old QP	: [ ]

Instructions:

SECTION "A" MCQ

1) *Fill ● (dark) the appropriate empty circle below the question number once only.*
2) *Use **blue/black** ball point pen only.*
3) *Each Question carries **One mark.***
4) *A student will not be allotted any marks if he/she overwrites, strikes out or puts white ink on the circle once filled (darkened)*
5) *Do not write anything on the blank portion of the question paper if written anything, such type of act will be considered as an attempt to resort to unfair means.*

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) ***(4 MCQ Should be clinical application based)*** (20x1=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answer book for all sections.*

SECTION "B" (80 Marks)

2. Brief answer questions (Any Ten out of Eleven) (10x 2= 20)

a) b) c) d) e) f) g) h) i) j) k)

3. Short Answer Questions (Any Eight out of Nine) (8x5= 40)

Minimum 2 SAQs should be Case Based Questions/ Clinically applied Questions.

4. a) b) c) d) e) f) g) h) i) (2x 10= 20)

Long Answer Questions (Any Two out of Three)

b) c)

Note: All questions should be structured .Wherever necessary, split up of marks should be specified.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

MARKLIST FOR PRACTICAL / ORAL / VIVA VOCE

(Summer / Winter – 20…Exam (MBBS UG Courses)

(Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Course : FIRST MBBS **Subject : Anatomy**

CENTRE : **Marks : (Practical = Practical/Clinical + Viva) Min. 50 Max. 100**

Date : / /20 **Batch :**

Practical								Oral/Viva				Total
Seat No.	Soft Part	Histology (Spotting)	2 slide for Discussion	Axial Skeleton	Embryo	Clinical Anatomy	Practical Total	Appendicular Skeleton	X-ray	Surface Living Anatomy	Oral/Viva Total	PR/Oral Total
	A	B	C	D	E	F	G	H	I	J	K	L
Max. Marks	30	10	10	10	10	10	**80**	10	05	05	**20**	**100**

Note : Both Examiners should jointly conduct practical examination for each student.

Verified above entries from Answerbooks and we hereby certify that the marks entered against each Seat Number are found correct.

	NAME OF EXAMINER	COLLEGE	SIGNATURE WITH DATE	
1			Convenor	
2			Internal	
3			External	
4			External	

RECOMMENDED BOOKS

1) Gray's Anatomy
2) Sahana's Human Anatomy
3) Chouraia's Human Anatomy 3 volumes
4) Cunningham's manual of Practical Anatomy
5) Regional Anatomy by R. J. Last
6) Human Histology by Inderbir Singh
7) Atlas of Human Histology- DIFORE
8) Surgical Anatomy- McGregor
9) Histolgoy- by ham,
10) Human Embryology – Inderbir Singh,
11) Medical Embryology – Langman,
12) Surface Anatomy & Radiology – Halim Das,
13) General Anatomy by – Chowrisia
14) Text book of Neuroanatomy – Inderbir Singh
15) Central Nervous System – Podar Bhagat
16) Clinical anatomy for medical students – Richard Snell
17) J.S.P. Lumbley at all – M.C.Q's in Anatomy
18) Text Book of General Anatomy – V. Subhadra Devi
19) Dissection Manual with Regions & Applied Anatomy, Lower Extremity Abdomen Pelvis and Perineum Vol 2 -1 Edition 2018 - Dr. Mercy Navis
20) Dissection Manual with Regions & Applied Anatomy, Head , Neck &Brain. Mercy Navis
21) Clinical Anatomy by-Neeta V Kulkarni.
22) Salubris Prep- Manual AETCOM- PRE CLINICAL- Jyoti Gaikwad & Varsha Navgire.

Course Content

Physiology **First M.B.B.S. (From August 2019)**

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page no.91-118)

Teaching hours Lectures(hours)-160 Self directed learning (hours)-25

Small group teachings/tutorials/Integrated teaching/Practicals(hours)-310 Total(hours) -495 Early clinical exposure(hours)- 90 to be divided equally in all three subjects .

Competency No.	Topics & subtopics
1	**General Physiology**
PY. 1.1	Structure and Functions of a Mammalian Cell
PY. 1.2	Principles of Homeostasis
PY. 1.3	Intercellular communication
PY. 1.4	Apoptosis – Programmed cell death
PY. 1.5	Transport mechanisms across cell membranes
PY. 1.6	Fluid compartment of the body, its ionic composition & measurements
PY. 1.7	Concept of pH & Buffer systems in the body
PY. 1.8	Molecular basis of resting membrane potential and action potential in excitable tissue
PY. 1.9	Methods used to demonstrate the functions of the cells and its products, its communication and their applications in Clinical care and research.
2	**Topic: Hematology**
PY. 2.1	Composition & functions of blood components
PY. 2.2	Original, forms, variations and functions of plasma proteins
PY. 2.3	Synthesis and functions of Hemoglobin & explain its breakdown. Describe variants of hemoglobin

PY. 2.4	RBC formation (erythropoiesis & its regulation) and its functions
PY. 2.5	Types of anaemias & Jaundice
PY. 2.6	WBC formation (granulopoiesis) & its regulation
PY. 2.7	Formation of platelets, functions & variations
PY. 2.8	Physiological basis of hemostasis and anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)
PY. 2.9	Different blood groups and clinical importance of blood grouping, blood banking and transfusion
PY. 2.10	Types of immunity , development of immunity and its regulation
PY. 2.11	Estimation Hb, RBC, TLC, RBC indices, DLC, Blood group, BT/CT
PY. 2.12	Tests for ESR, Osmotic fragility, Hematocrit , findings and interpretion of test results etc.
PY. 2.13	Steps for reticulocyte and platelet count
3	**Nerve and Muscle Physiology**
PY. 3.1	Structure and functions of a neuron and neuroglia; Nerve Growth Factor & other growth factors/cytokines
PY. 3.2	Types, functions & properties of nerve fibers
PY. 3.3	Degeneration and regeneration in Peripheral nerves
PY. 3.4	Structure neuro-muscular junction and transmission of impulses
PY. 3.5	Action of neuro-muscular blocking agents
PY. 3.6	Pathophysiology of Myasthenia gravis
PY. 3.7	Types of muscle fibres and their structure
PY. 3.8	Action potential and its properties in different muscle types (skeletal & smooth)
PY. 3.9	Molecular basis of muscle contraction in skeletal and in smooth muscles

PY. 3.10	Mode of muscle contraction (isometric and isotonic)
PY. 3.11	Energy source and muscle metabolism
PY. 3.12	Gradation of muscular activity
PY. 3.13	Muscular dystrophy: myopathies
PY. 3.14	Ergography
PY. 3.15	Effect of mild, moderate and severe exercise and changes in cardiorespiratory parameters
PY. 3.16	Harvard Step test and impact on induced physiologic parameters in a simulated environment
PY. 3.17	Strength-duration curve
PY. 3.18	Computer assisted learning (i) amphibian nerve – muscle experiments (ii) amphibian cardiac experiments
4	**Gastro-intestinal Physiology**
PY. 4.1	Structure and functions of digestive system
PY. 4.2	Composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal, juices and bile secretion
PY. 4.3	GIT movements, regulation and functions ,defecation reflex. Role of dietary fibre.
PY. 4.4	Physiology of digestion and absorption of nutrients
PY. 4.5	Source of GIT hormones, their regulation and functions
PY. 4.6	Gut-Brain Axis
PY. 4.7	Structure and functions of liver and gall bladder
PY. 4.8	Gastric function tests, pancreatic exocrine function test & liver function tests
PY. 4.9	Physiology aspects of; peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhea , constipation, Adynamic ileus, Hirschsprung's disease
PY. 4.10	Clinical examination of the abdomen in a normal volunteer or simulated environment

5	**Cardiovascular Physiology (CVS)**
PY. 5.1	Functional anatomy of heart including chambers sounds; and Pacemaker tissue and conducing system.
PY. 5.2	Properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions
PY. 5.3	Events occurring during the cardiac cycle
PY. 5.4	Generation, conduction of cardiac impulse
PY. 5.5	Physiology of electrocardiogram (E.C.G.), its applications and the cardiac axis
PY. 5.6	Abnormal ECG, arrhythmias, heart block and myocardial infarction.
PY. 5.7	Haemodynamics of circulatory system
PY. 5.8	Local and systemic cardiovascular regulatory mechanisms
PY. 5.9	Factors affecting heart rate, regulation of cardiac output & blood pressure
PY. 5.10	Regional circulation including microcirculation, lymphatic, coronary, cerebral, capillary, Skin, foetal, pulmonary and splanchnic circulation
PY. 5.11	Patho-physiology of shock, syncope and heart failure
PY. 5.12	Blood pressure & pulse recording at rest and in different grades of exercise and postures in a volunteer or simulated environment
PY. 5.13	Record and interpret normal ECG in a volunteer or simulated environment
PY. 5.14	Cardiovascular autonomic function tests in a volunteer or simulated environment
PY. 5.15	Clinical examination of the cardiovascular system in a normal volunteer or simulated environment
PY. 5.16	Recording Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment
6	**Respiratory Physiology**
PY. 6.1	Functional anatomy of respiratory tract

PY. 6.2	Mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities, alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs
PY. 6.3	Transport of respiratory gases: Oxygen and Carbon dioxide
	Regulation of respiration -- Neural & chemical
PY. 6.4	Physiology of high altitude deep sea diving
PY. 6.5	Principles of artificial respiration oxygen therapy, acclimatization and decompression sickness
PY. 6.6	Pathophysiology of dyspnea, hypoxia, cyanosis asphyxia; drowning, periodic breathing
PY. 6.7	Lung function tests & their clinical significance
PY. 6.8	Technique to perform & interpret Spirometry
PY. 6.9	Examination of the respiratory system in a normal volunteer or simulated environment
PY. 6.10	Technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment
7	**Renal Physiology**
PY. 7.1	Structure and function of kidney
PY. 7.2	Structure and functions of juxta glomerular apparatus and role of renin-angiotensin system
PY. 7.3	Mechanism of urine formation and processes involved
PY. 7.4	Significance & implication of Renal clearance
PY. 7.5	Renal regulation of fluid and electrolytes & acid-base balance
PY. 7.6	Innervations of urinary bladder, physiology of micturition and its abnormalities
PY. 7.7	Artificial kidney, dialysis and renal transplantation
PY. 7.8	Renal Function Tests
PY. 7.9	Cystometry and discuss the normal cystometrogram

8	**Endocrine Physiology**
PY. 8.1	Physiology of bone and calcium metabolism
PY. 8.2	Synthesis, secretion, transport, physiological actions, regulation and effects of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus
PY. 8.3	Physiology of Thymus & Pineal Gland
PY. 8.4	Function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas
PY. 8.5	Metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome
PY. 8.6	Mechanism of action of steroid, protein and amine hormones
9	**Reproductive Physiology**
PY. 9.1	Sex determination; sex differentiation and their abnormalities and outline psychiatry and practical implementation of sex determination
PY. 9.2	Puberty: onset, progression, states; early and delayed puberty and outline adolescent clinical and psychological association
PY. 9.3	Male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness
PY. 9.4	Female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle – hormonal, uterine and ovarian changes
PY. 9.5	Physiological effects of sex hormones
PY. 9.6	Contraceptive methods for male and female. Discuss their advantages & disadvantages
PY. 9.7	Effects of removal of gonads on physiological functions
PY. 9.8	Physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it

PY. 9.9	Interpret a normal semen analysis report including (a) sperm court, (b) sperm morphology and (c) sperm motility, as per WHO guidelines and discuss the result
PY. 9.10	Physiological basis of various pregnancy tests
PY. 9.11	Hormonal changes and their effects during perimenopause and menopause
PY. 9.12	Common causes of infertility in a couple and role of IVF in managing a case of infertility
10	**Neurophysiology**
PY. 10.1	Organization of nervous system
PY. 10.2	Functions and properties of synapse, reflex, receptors
PY. 10.3	Somatic sensations & sensory tracts
PY. 10.4	Motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus
PY. 10.5	Structure and functions of reticular activating system, autonomic nervous system (ANS)
PY. 10.6	Spinal cord, its functions, lesion & sensory disturbances
PY. 10.7	Functions of cerebral cortex, basal ganglia thalamus, hypothalamus. Cerebellum and limbic system and their abnormalities
PY. 10.8	Behavioural and EEG characteristics during sleep and mechanism responsible for its production
PY. 10.9	Physiological basis of memory, learning and speech
PY. 10.10	Chemical transmission in the nervous system. (Outline the psychiatry element)
PY. 10.11	Clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment
PY. 10.12	Normal EEG forms
PY. 10.13	Perception of smell and taste sensation

PY. 10.14	Patho-physiology of altered smell and taste sensation
PY. 10.15	Functional anatomy of ear and auditory pathways & physiology of hearing
PY. 10.16	Pathophysiology of deafness. Hearing tests
PY. 10.17	Functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex
PY. 10.18	Physiological basis of lesion in visual pathway
PY. 10.19	Auditory & visual evoke potentials
PY. 10.20	(i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer/ simulated environment
11	**Integrated Physiology**
PY. 11.1	Mechanism of temperature regulation
PY. 11.2	Adaptation to altered temperature (heat and cold)
PY. 11.3	Mechanism of fever, cold injuries and heat stroke
PY. 11.4	Cardio-respiratory and metabolic adjustment during exercise; physical training effects
PY. 11.5	Physiological consequences of sedentary lifestyle
PY. 11.6	Physiology of Infancy
PY. 11.7	Physiology of aging; free radicals and antioxidants
PY. 11.8	Cardio-respiratory changes in exercise (isometric and isotonic) with that in the resting state and under different environmental conditions (heat and cold)
PY. 11.9	Interpretation of growth charts
PY. 11.10	Interpretation of anthropometric assessment of infants
PY. 11.11	Concept, criteria for diagnosis of Brain death and its implications
PY. 11.12	Physiological effects of meditation

PY. 11.13	History taking and general examination in the volunteer / simulated environment
PY. 11.14	Basic Life Support in a simulated environment

Paper wise distribution of topics

Year: First MBBS Subject: Physiology

Paper	Section	Topics
I	A	MCQs on all topics of the paper I
	B & C	General Physiology
		Blood
		Respiratory System
		Cardio Vascular System,
		Cardio-respiratory and metabolic adjustment during exercise
		Renal system
		Gastro intestinal system
		Life style, aging, Meditation
		AETCOM module no. 1.2 & 1.3
		Scenario based / application questions can be on any topic of the paper I
		For long answer question and scenario based / application questions , topics will not be repeated
II	A	MCQs on all topics of the paper II
	B & C	Endocrine Physiology
		Reproductive System, Physiology of Infancy
		Special senses
		Central nervous system including brain death Temperature Regulation & applied
		Nerve muscle physiology
		Scenario based / application questions can be on any topic of the paper II
		For long answer question and scenario based / application questions , topics will not be repeated

Internal Assessment

Physiology

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

Sr. No	I-Exam (December)			II-Exam (March)		
	Theory	Practical (Including 05 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 05 Marks for Journal & Log Book	Total Marks
1	100	50	150	100	50	150

Sr. No	Preliminary Examinations			Sr. No	Remedial internal assessment examination for **Non - eligible** students		
	III-Exam **(July)**				**October**		
	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks		Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
1	200	100	300	1	200	100	300

1. There will be 3 internal assessment examinations in the academic year. The structure of Preliminary examinations should be similar to the structure of University examination.

2. There will be only one additional examination for absent students (due to genuine reason) after approval by the Committee Constituted for the same. It should be taken after preliminary examination and before submission of internal assessment marks to the University.

3. First internal assessment examination will be held in December, second internal assessment examination will be held in March and third internal assessment examination will be held in July.

4. Internal assessment marks for theory and practical will be converted to out of 40. Internal assessment marks, after Conversion, should be submitted to university by 7th of August.

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

6. **Remedial internal assessment examination for Non - eligible students**: Student who were not eligible due to less than 50% combined or less than 40% in any theory or practical, will re appear as repeater student for Prelim exam which will be conducted before Supplementary Exam. His/her internal assessment will be calculated on the basis of this Examination marks only. Students who will not be eligible in this Examination will appear with regular batch as repeater student.

7. The internal assessment marks of the remedial examination alone shall be considered and converted into out of 40.

8. Conversion **Formula for calculation of marks in internal assessment examinations**

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% Separately in Theory and Practical, 50% Combined)	
Theory	100	100	200	400	$\frac{\text{Total marks obtained}}{10}$	16 (minimum)	Total of Theory + Practical Must be 40.
Practical	50	50	100	200	$\frac{\text{Total marks obtained}}{5}$	16 (minimum)	

9. Conversion formula for calculation of marks in Remedial internal assessment examination

	Remedial Exam (Prelim)	Int. Assess. marks conversion formula (out of 40)	Eligibility to appear for Supplementary Exam. (after conversion out of 40) (40% Separately in Theory and Practical, 50% Combined)	
Theory	200	$\frac{\text{Total marks obtained}}{5}$	16 (minimum)	Total of Theory + Practical Must be 40.
Practical	100	$\frac{\text{Total marks obtained}}{2.5}$	16 (minimum)	

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	**Final rounded marks**
15.01 to 15.49	15
15.50 to 15.99	16

First Year MBBS Practical Mark's Structure Internal Assessment Examinations I & II (Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Physiology

	Hematology	Clinical Examination/Human Physiology expt. / Short exercises	Journal/ Logbook	Oral Viva	Total
	A	B	C	D	E
Max. Marks	15	20	5	10	50

First Year MBBS Physiology Practical Mark's Structure (Prelim exam)

(Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards)

Seat No.	Exercise 1				Exercise 2	Exercise 3 *	Exercise 4**		Practical (Total)	Oral/Viva (Total)	PR/Oral Total
	Clinical Examination										
	C.V.S	R.S	C.N.S. & Special Senses	General Exam & Abdomen	Hematology	Short exercise	Human Physiology Experiment	Journal & Log book			
	A	B	C	D	E	F	G	H	I	J	K
Max. Mark's	10.0	10.0	10.0	10.0	10.0	15.0	15.0	10.0	90	10.0	100

***Short exercises 3 marks each(3X5)**

1. Case based scenarios/ endocrine disorders photographs .2. Interpretation of function tests. 3. One skeletal graph

4. One cardiac graph 5. Calculation

**** Exercise 4: Human Physiology Experiment** 1. Basic Life Support in a simulated environment 2. ECG 3. Spirometry 4. PEFR 5. EEG Interpretation 6. Ergography 7. Harward step test 8. Perimetry

*** Suggested Methods of Assessment**

Preclinical exam & OSPE

(Please Note - The above examination pattern will be applicable to the students admitted from Academic Year 2019-20 and onwards, which is informed to all Medical Colleges vide University letter No MUHS /X-1 /UG /1692 /2020 Date: 28/02/2020)

First Year MBBS Physiology Practical Mark's Structure(MUHS)

(Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards)

	Exercise 1				Exercise 2	Exercise 3 *	Exercise 4**	Practical (Total)	Oral/Viva (Total)	PR/Oral Total
	Clinical Examination									
	C.V.S	R.S	C.N.S. & Special Senses	General Exam & Abdomen	Hematology	Short exercises	Human Physiology Experiment			
	A	B	C	D	E	F	G	H	I	J
Max. Mark's	10.0	10.0	10.0	10.0	10.0	15.0	15.0	80	20.0	100

***Short exercises 3 marks each(3X5)**

1. Case based scenarios/ endocrine disorders photographs .2. Interpretation of function tests. 3. One skeletal graph

4. One cardiac graph 5. Calculation

**** Exercise 4: Human Physiology Experiment** 1. Basic Life Support in a simulated environment 2. ECG 3. Spirometry 4. PEFR 5. EEG Interpretation 6. Ergography 7. Harward step test 8. Perimetry

*** Suggested Methods of Assessment**

Clinical exam & OSPE

(Please Note - The above examination pattern will be applicable to the students admitted from Academic Year 2019-20 and onwards, which is informed to all Medical Colleges vide University letter No MUHS /X-1 /UG /1692 /2020 Date: 28/02/2020)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1.	Course and Year	:	**First MBBS** *(applicable w.e.f. Sept. 2020& onwards examinations)*						2. Subject Code	:	***Appendix - a***
3.	Subject (PSP)	:	**Anatomy / Physiology / Biochemistry**								
	(TT)	:									
4.	Paper :	:	***I***	5. Total Marks	:	**100**	6. Total Time	: **3 Hrs.**	7. Remu. (PS)	:	**Rs. 300/-**
									8. Remu. (PM)	:	**Rs. 350/-**
9.	Web Pattern	: [ ]		10. Web Skeleton	: [ ]		11. Web Syllabus	: [ ]	12. Web Old QP	:	[ ]

Instructions:

SECTION "A" MCQ

1) *Fill ⬬ (dark) the appropriate empty circle below the question number once only.*
2) *Use **blue/black** ball point pen only.*
3) *Each Question carries **One mark.***
4) *A student will not be allotted any marks if he/she overwrites, strikes out or puts white ink on the circle once filled (darkened)*
5) *Do not write anything on the blank portion of the question paper if written anything, such type of act will be considered as an attempt to resort to unfair means.*

SECTION "A" MCQ (20 Marks)

Q1. Multiple Choice Questions (Total 20 MCQ of One mark each) ***(4 MCQ Should be clinical application based)*** (20x1=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

SECTION "B" (80 Marks)

2. Brief answer questions (Any Ten out of Eleven) (10x 2= 20)

a) b) c) d) e) f) g) h) i) j) k)

3. Short Answer Questions (Any Eight out of Nine) (8x5= 40)

One SAQ has to be on AETCOM Module ***(For Anatomy 1.1, 1.5, For Physiology 1.2.,1.3&For Biochemistry, 1.4) &***
Minimum 2 SAQs should be Case Based Questions/ Clinically applied Questions.

a) b) c) d) e) f) g) h) i)

4. Long Answer Questions (Any Two out of Three) (2x 10= 20)

a) b) c)

Note: All questions should be structured .Wherever necessary; split up of marks should be specified.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1.	Course and Year	:	**First MBBS** *(applicable w.e.f. Sept. 2020& onwards examinations)*						2. Subject Code	:	***Appendix - a***
3.	Subject (PSP)	:	**Anatomy / Physiology / Biochemistry**								
	(TT)	:									
4.	Paper :	:	***II***	5. Total Marks	:	**100**	6. Total Time	: **3 Hrs.**	7. Remu. (PS)	:	**Rs. 300/-**
									8. Remu. (PM)	:	**Rs. 350/-**
9.	Web Pattern	: [ ]		10. Web Skeleton	: [ ]		11. Web Syllabus	: [ ]	12. Web Old QP	:	[ ]

Instructions:

SECTION "A" MCQ

1) *Fill ● (dark) the appropriate empty circle below the question number once only.*
2) *Use **blue/black** ball point pen only.*
3) *Each Question carries **One mark.***
4) *A student will not be allotted any marks if he/she overwrites, strikes out or puts white ink on the circle once filled (darkened)*
5) *Do not write anything on the blank portion of the question paper if written anything, such type of act will be considered as an attempt to resort to unfair means.*

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) ***(4 MCQ Should be clinical application based)*** (20x1=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answer book for all sections.*

SECTION "B" (80 Marks)

2. Brief answer questions (Any Ten out of Eleven) (10x 2= 20)

a) b) c) d) e) f) g) h) i) j) k)

3. Short Answer Questions (Any Eight out of Nine) (8x5= 40)

Minimum 2 SAQs should be Case Based Questions/ Clinically applied Questions.

4. a) b) c) d) e) f) g) h) i) (2x 10= 20)

Long Answer Questions (Any Two out of Three)

ı) b) c)

Note: All questions should be structured .Wherever necessary, split up of marks should be specified.

MARKLIST FOR PRACTICAL / ORAL / VIVA VOCE

(Summer / Winter – 20...Exam (MBBS UG Courses)

(Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Course : FIRST MBBS **Subject : Physiology**

CENTRE : **Marks : (Practical = Practical/Clinical + Viva) Min. 50 Max. 100**

Date : / /20 **Batch :**

Practical									Oral/Viva	Total
Seat No.	C.V.C	R.S	C.N.S. & Special senses	Abdomen	Exercise (2) Hematology	Exercise (3) Short Exercise	Human Physiology Experiment	Practical (Total)	Oral/Viva Total	PR/Oral Total
	A	B	C	D	E	F	G	H	I	J
Max. Marks	10	10	10	10	10	15	15	80	20	100

Note : Both Examiners should jointly conduct practical examination for each student.

Verified above entries from Answerbooks and we hereby certify that the marks entered against each Seat Number are found correct.

	NAME OF EXAMINER	COLLEGE	SIGNATURE WITH DATE	
1			Convener	
2			Internal	
3			External	
4			External	

Books recommended:

1) Textbooks of Physiology :

Guyton - Textbook of Physiology Ganong -
Review of Medical Physiology
S. Wright - Applied Physiology

2) Reference Books :

Best and Taylor - Physiological basis of medical practice
Berne & levy. - Principles of Physiology
Dr. V.G. Ranade - Laboratory Manual and Journal of Physiology Practicals
Ghai's VP Varshney, Mona Bedi- Textbook of Physiology -9 th Edition2019.
G.K. Pal-Comprehensive Text Book of Medical Physiology.
Dr.Amarnath B. Solepure - Fundamental Human Neurophysiology-First Edition 2018.

Course Content

(Based on Competency Table published by Medical Council of India.Students/Teachers are directed to refer competency table published on MCI Website for details)

Subject: Biochemistry **Year: First MBBS**

Competency No.	Topics & Subtopics
1 **1.1** Describe the molecular and functional organization of a cell and its subcellular components.	**Basic Biochemistry** Molecular and functional organization of cell and its subcellular components
2	**Enzymes**
2.1 Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature.	Biochemical nature of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors IUBMB enzyme classification
2.2 Observe the estimation of SGOT & SGPT	Estimation of SGOT (AST)& SGPT (ALT) with its normal range and clinical significance.
2.3 Describe and explain the basic principles of enzyme activity	Mechanism of enzyme action, factors affecting enzyme activity, brief concept of enzyme kinetics with special reference to V_{max} & k_m.
2.4	Enzyme inhibition. Various inhibitors as drugs and poisons

Competency No.	Topics & Subtopics
Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes	
2.5 Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions.	Diagnostic and therapeutic importance of various serum enzymes in various disorders
2.6 Discuss use of enzymes in laboratory investigations (Enzymebased assays) **2.7** Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions.	Analytical uses of Enzymes in laboratory investigations (enzyme based assays) Interpret various serum enzymes of liver & biliary tract, Pancreas, cardiac & skeletal muscle in various disorders
3	**Chemistry & Metabolism of Carbohydrates**
3.1 Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body	Classification of carbohydrates with examples and functions of monosaccharides giving examples as energy fuel, glycosides and its therapeutic importance, disaccharides with examples and importance, polysaccharides with examples as storage form like glycogen, structural elements like glycosaminoglycan's in the human body, resistant starch, glycemic index, and dietary fiber. Clinical importance of dextran's

3.2 Describe the processes involved in digestion and assimilation of carbohydrates and storage. **3.3**	Digestion & absorption, transport and storage of carbohydrates, Lactose intolerance and sucrase deficiency disorders

Competency No.	**Topics & Subtopics**
Describe and discuss the digestion and assimilation of carbohydrates from food.	
3.4 Define and differentiate the pathways of carbohydrate metabolism(glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt).	Pathway, energetics, regulation & clinical diseases / disorders of - Glycolysis including Rappaport Leubering cycle, Gluconeogenesis, Glycogenesis, Glycogenolysis , HMP pathway , Uronic acid pathway, Galactose & Fructose metabolism
3.5 Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders.	
3.6 Describe and discuss the concept of TCA cycle as a amphibolic pathway and its regulation.	TCA cycle Pathway,energetics, regulation & its concepts as amphibolic pathway
3.7 To be clubbed with 3.4 & 3.6 Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg: fluoride, arsenate)	Common poisons that inhibit crucial enzymes of carbohydrate metabolism like: Iodoacetate, fluoride & arsenite as poisons that inhibit enzymes of glycolysis Fluoroacetate, arsenite & malonate as poisons that inhibit enzymes of TCA cycle

3.8 & 3.10 **3.8:** Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates. (to be clubbed with comp no 11.17- Diabetes Mellitus) **3.10** Interpret the results of blood glucose levels and other Laboratory investigations related to disorders of carbohydrate metabolism.	Interpretation of the results of blood glucose, Glycated hemoglobin & GTT as per WHO guidelines in Diabetes mellitus including gestational diabetes and other laboratory investigation like urinary glucose, urinary ketone bodies. Interpretation of the results of blood & urinary galactose levels in galactosemia. Interpretation of blood G6PD levels

Competency No.	**Topics & Subtopics**
3.9 Discuss the mechanism and significance of blood glucose regulation in health and disease.	Regulation of blood glucose in fed and fasting state in normal health & changes in diabetes mellitus.
4	**Chemistry & Metabolism of Lipids**
4.1 Describe and discuss main classes of lipids (Essential/nonessential fatty acids, cholesterol and hormonal steroids, triglycerides, major phospholipids and sphingolipids) relevant to human system and their major functions.	Definition & classification of lipids including classification of fatty acids, their nomenclature, numbering, functions & biological importance of various lipids like fatty acids, cholesterol , hormonal steroids, triglycerides, major phospholipids and sphingolipids

4.2 Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism	Digestion, absorption and transport of lipids along with abnormalities like lipid malabsorption. Metabolism of fatty acids (β-oxidation of even and odd carbon fatty acids), regulation, energetics and disorders associated with oxidation of fatty acids, Formation & fate of ketone bodies, its significance, regulation and associated disorders like ketosis. In brief de novo fatty acid biosynthesis- site & organs, precursors, enzyme complex, product formed & regulatory steps. Biosynthesis of triacylglycerol and fate of triacylglycerol formed in liver & adipose tissue, its significance and regulation, Metabolic role of adipose tissue and disorders of lipid transport and storage like fatty liver. In brief Cholesterol biosynthesis- site & organs, precursors, key enzymes, product formed & regulatory step, metabolic fate & excretion

Competency No.	**Topics & Subtopics**
4.3 Explain the regulation of lipoprotein metabolism & associated disorders.	Metabolism of various lipoproteins and hyperlipoproteinemia's, hypolipoproteinemiasabetalipoproteinemias & Tangiers disease.
4.4 Describe the structure and functions of lipoproteins, their functions, interrelations & relations with atherosclerosis	Classification structure and functions of lipoproteins- (To be clubbed with 4.1) Metabolic interrelationship between various lipoproteins, Role of lipoproteins in transport of cholesterol and reverse cholesterol transport, atherosclerosis- (To be clubbed with 4.3)

4.5 & 4.7 Interpret laboratory results of analytes associated with metabolism of lipids	Various lipid profile tests with their biological reference intervals. Interpret lipid profile results in various disorders like hyper/hypolipoproteinemias, diabetes mellitus, nephrotic syndrome, disorders of thyroid etc.
4.6 Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.	Various eicosanoid classes (prostaglandins, leukotrienes & thromboxanes), their functions. Key features of synthesis of eicosanoids and inhibitors of eicosanoid synthesis, therapeutic uses of prostaglandins
4.7 Interpret laboratory results of analytes associated with metabolism of lipids.	**Same as 4.5**
5 **5.1** Describe and discuss structural organization of proteins.	**Chemistry and Metabolism of Proteins** General nature of amino acid, classification and importance of amino acids with examples, peptide bond formation, biologically important peptides, different levels of protein structure including disulfide & weak bonds with examples and clinical significance.

Competency No.	**Topics & Subtopics**
5.2 Describe and discuss functions of proteins and structurefunction relationships in relevant areas e.g. hemoglobin and selected hemoglobinopathies	Definition, various classifications with examples and functions of proteins, plasma proteins, structure - function relationship of proteins like myoglobin, normal & abnormal hemoglobin

5.3 Describe the digestion and absorption of dietary proteins.	Digestion, absorption and transport of dietary proteins with related disorders like Hartnup disease, cystinuria & glycinuria.
5.4 Describe common disorders associated with protein metabolism.	Role of transamination & deamination reactions in metabolism of amino acids in the formation of ammonia with their clinical significance. Transport of ammonia, pathway of urea cycle, its significance, regulation and metabolic disorders associated with urea cycle. Metabolic pathways for Glycine, Phenylalanine & Tyrosine, Sulphur containing amino acids (Methionine, Cysteine & Cystine) and branch chain amino acids (Valine, Isoleucine & Leucine), their role in biosynthesis of variety of specialized biomolecules, associated metabolic disorders For Tryptophan- Only important biomolecules formed & clinical significance.
5.5 Interpret laboratory results of analytesassociated with metabolism of proteins.	Interpret laboratory results of protein metabolism for example: Levels of various metabolites in blood or urine in metabolic disorders like- urea cycle disorders, Phenylketonuria, Tyrosinemia, Alkaptonuria, Hartnups disease, MSUD, cystinuria & homocystinuria
6	**Metabolism and Homeostasis**
6.1 Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states.	Integration of carbohydrate, protein and lipid metabolism at cellular and tissue or organ level with its significance, Metabolic processes with role of specific organs in fed, fasting and starvation states.

Competency No.	**Topics & Subtopics**

6.2 Describe and discuss the metabolic processes in which nucleotides are involved.	Important steps in de novo biosynthesis of purine and pyrimidine nucleotides and their regulation, enzymes of the nucleotide biosynthesis that are inhibited by anticancer drugs, salvage pathway for the synthesis of purine nucleotides with its significance, catabolism of purine and pyrimidine nucleotides.
6.3 Describe the common disorders associated with nucleotide metabolism. **6.4** Discuss the laboratory results of analytes associated with gout & Lesch-Nyhan syndrome.	Disorder of nucleotide metabolism like gout, Lesch-Nyhan syndrome, orotic aciduria, with diagnostic tests & biochemical mechanism of nutritional & drug therapy. Lab results of analytes related with gout & Lesch-Nyhan syndrome. Levels of uric acid in blood & urine and presence of urate crystals in synovial fluid in gout, levels of uric acid in blood
6.5 Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency	Sources, biochemical functions, daily requirement and deficiency manifestations of fat soluble vitamins (Vitamin A, D, E & K). Sources, biochemical functions and deficiency manifestations of water soluble vitamins (Thiamine, Riboflavin, Niacin, Pantothenic acid, Pyridoxine, Biotin, Folic acid, Cobalamin and vitamin C)
6.6 Describe the biochemical processes involved in generation of energy in cells.	Electron transport chain, mechanism of oxidative phosphorylation (chemiosmotic theory), substrate level phosphorylation, Uncouplers & Inhibitors of electron transport chain , shuttle systems for transport of extra-mitochondrial NADH
6.7 Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these.	Acids, bases and buffers, mechanism of action of buffer, dietary sources of acids, bases, normal pH of body fluids. Role of blood buffers, respiratory system & kidney in regulation of blood pH. Disorders associated with blood pH (acidosis and alkalosis) & their compensatory mechanisms, anion gap & its clinical importance.

Competency No.	Topics & Subtopics
	Total body water and its compartmental distribution, various electrolytes- sodium, potassium and chloride, their distribution and clinical conditions related to their plasma level alterations, maintenance of normal water and electrolyte balance and disorders associated with water and electrolyte imbalance.
6.8 Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.	Interpretation of results of arterial blood gas (ABG) analysis in acidosis and alkalosis.
6.9 Describe the functions of various minerals in the body, their metabolism and homeostasis.	Dietary food sources, daily requirement, biochemical functions, metabolism and homeostasis of: Calcium, phosphorus & magnesium, trace elements (copper, fluoride, iodine, iron, manganese, selenium & zinc)
6.10 Enumerate and describe the disorders associated with mineral metabolism.	Clinical conditions related to plasma level alterations of: Calcium, phosphorus & magnesium Trace elements (copper, fluoride, iodine, iron, manganese, selenium & zinc)
6.11 Describe the functions of heme in the body and describe the processes involved in its metabolism and describe porphyrin metabolism	Structure and functions of hemoglobin, role of 2,3-bisphosphoglycerate (BPG) in oxygen binding and delivery, biosynthesis of heme (iron containing porphyrin), its regulation, functions in the body, disorders of heme biosynthesis (various types of porphyria's), catabolism of heme, various types of jaundice

6.12 Describe the major types of hemoglobin and its derivatives found in the body and their physiological/ pathological relevance.	Types of normal human hemoglobin, types of normal & abnormal derivatives of hemoglobin, various hemoglobinopathies: Sickle cell anemia, Thalassemia

Competency No.	**Topics & Subtopics**
6.13 Describe the functions of the kidney, liver, thyroid and adrenal glands.	1. Functions of liver, disorders& liver function tests 2. Functions of kidney, disorders& kidney function tests 3.Functions of Thyroid, disorders& thyroid function tests 4.Functions of Adrenals , disorders& Adrenal function tests
6.14 Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).	
6.15 Describe the abnormalities of kidney, liver, thyroid and adrenal glands.	
7	**Molecular Biology**
7.1 Describe the structure and functions of DNA and RNA and outline the cell cycle	Structure and functions of nucleotides, biologically important nucleotides and their importance, major types of synthetic analogs of nucleotides (antimetabolites) and their clinical significance, structure and functions of DNA and RNA, Phases of cell cycle

7.2 Describe the processes involved in replication & repair of DNA and the transcription & translation mechanisms.	Replication of DNA in Eukaryotes, inhibitors of DNA replication and different types of repair systems of DNA Transcription in Eukaryotes and posttranscriptional modifications, inhibitors, reverse transcription & its significance Genetic code and wobble hypothesis, Translation in Eukaryotes, inhibitors, chaperons , protein folding and posttranslational modifications
7.3	Causes and types of genetic mutations with examples. Regulation of Eukaryotic gene expression

Competency No.	**Topics & Subtopics**
Describe gene mutations and basic mechanism of regulation of gene expression **7.4** Describe applications of molecular technologies like Recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis.	Recombinant DNA technology, restriction endonucleases, process of construction of recombinant DNA and its applications in medicine, DNA library, blot transfer techniques- southern blotting, northern blotting & western blotting, mechanism of polymerase chain reaction and its application in medical diagnosis and treatment of genetic diseases.
7.5 Describe the role of xenobiotics in disease	Mechanisms of biotransformation of xenobiotics & associated diseases.
7.6 Describe the anti-oxidant defense systems in the body.	Enzymatic and non-enzymatic antioxidant defense systems in the body.

7.7 Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.	Free radical, biological sources of reactive oxygen species (ROS) and oxidative damage, oxidative stress, roll of oxidative stress in cancer, diabetes mellitus & atherosclerosis.
8	**Nutrition**
8.1 Discuss the importance of various dietary components and explain importance of dietary fiber.	Importance of carbohydrates, lipids, proteins & vitamins, quality of proteins, various types of dietary fibers and their importance in the diet.
8.2 Describe the types and causes of protein energy malnutrition and its effects.	Protein energy malnutrition, Kwashiorkor and Marasmus their causes and effects.

Competency No.	**Topics & Subtopics**
8.3 Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.	Balanced diet in adult, in childhood and in pregnancy for optimal health, dietary advice in diabetes mellitus & coronary heart disease
8.4 Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity	Causes, effects and health risk associated with overweight/ obesity

8.5 Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance)	Nutritional importance of commonly used items of food like cereals, pulses, eggs, meat, fish, fruits and vegetables and their normal dietary requirements.
9	**Extracellular Matrix**
9.1 List the functions and components of the extracellular matrix (ECM).	Types & functions of the extracellular matrix (ECM), Components and functions of proteoglycans, glycoproteins & major proteins of ECM
9.2 Discuss the involvement of ECM components in health and disease.	Disorders associated with components of ECM like Osteogenesis imperfecta, Marfan's Syndrome , Mucopolysaccharidoses, Scurvy & Menkes Disease
9.3 Describe protein targeting & sorting along with its associated disorders(It is non-core: N)	Types of protein targeting and sorting, disorders due to defects in mitochondrial targeting signals and defects in peroxisomal matrix protein import.
10	**Oncogenesis and Immunity**

Competency No.	**Topics & Subtopics**
10.1 Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis	Characteristics of cancer cell, molecular basis of cancer (carcinogenesis) ,various carcinogens and initiator, promoter of carcinogens, oncogenes and proto-oncogenes, tumor suppressor genes (retinoblastoma, RB and p53), mechanisms of apoptosis in physiologic and pathologic conditions .

10.2 Describe various biochemical tumor markers and the biochemical basis of cancer therapy.	Biochemical tumor markers, biochemical basis of chemotherapy, radiotherapy, hormonal therapy, targeted drug therapy and immunotherapy.
10.3 Describe the cellular and humoral components of the immune system & describe the types and structure of antibody	Cells of the Immune System, types of immune systems (Innate &adaptive), cellular and humoral components of innate and adaptive immune systems, B cell development and the formation of antibodies, types, structure and mechanism of action of antibodies (Immunoglobulins), primary and secondary response
10.4 Describe & discuss innate and adaptive immune responses, self/non-self-recognition and the central role of T-helper cells in immune responses	Innate and adaptive immune systems, immunological memory, T lymphocytes development, role of helper T cells (CD4+ T cells) and cytotoxic T cells/killer cells/CD8+ T cells in immune responses, Brief concept of MHC Disorders – Immunodeficiency, autoimmunity & hypersensitivity.
10.5 Describe antigens and concepts involved in vaccine development.	Antigens, concept involved in vaccine development and their types.
11	**Biochemical Laboratory Tests**
11.1 Describe commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal.	Common lab equipments and apparatus like test tubes, pipettes & other glassware , auto pipettes, centrifuge, balances, oven, water bath good safe laboratory practice , management of needle stick injury & latest guidelines of disposal of biomedical waste

Competency No.	**Topics & Subtopics**

11.2 Describe the preparation of buffers and estimation of pH.	Preparation of buffer –acidic and alkaline. Measurement of pH paper and pH meter
11.3 Describe the chemical components of normal urine.	Chemical constituents of normal urine
11.4 & 11.20 **11.4:** Perform urine analysis to estimate and determine normal and abnormal constituents. **11.20:** Identify abnormal constituents in urine; interpret the findings and correlate these with pathological states.	Physical characteristics and organic constituents of urine. Collection of random & 24 hour urine sample Urine Report: Physical characteristics and abnormal constituents, urine dipsticks Interpretation of Urine Abnormalities
11.5 Describe screening of urine for inborn errors & describe the use of paper chromatography. Club Paper chromatography of amino acid & TLC from competency no 11.16	Urine: Screening of inborn errors. Paper chromatography for diagnosis of inborn errors
11.6 Describe the principles of colorimetry. (Club spectrophotometry from competency no **11.18**)	Colorimeter- Principle, Beer and Lambert's law & applications. Principles of spectrophotometry.
11.7,11.8, 11.21 & 11.22 **11.7-** Demonstrate the estimation of serum creatinine and creatinine clearance **11.8**- Demonstrate estimation of serum proteins, albumin and A:G ratio **11.21**- Demonstrate estimation of glucose, creatinine, urea and total protein in serum. **11.22**- Calculate albumin: globulin A:G ratio and creatinine clearance	Estimation of serum creatinine, urine creatinine and calculation of creatinine clearance and their clinical interpretation. Estimation of serum proteins, albumin and calculation of A/G ratio and their clinical interpretation. Estimation of plasma glucose, serum urea and their clinical interpretation.
11.9	Estimation of serum total cholesterol and HDL cholesterol, their ratio their clinical interpretation.

Competency No.	Topics & Subtopics
Demonstrate the estimation of serum total cholesterol and HDL cholesterol **11.10** Demonstrate the estimation of triglycerides	Estimation of serum triglycerides and their clinical interpretation.
11.11 Demonstrate estimation of calcium and phosphorous	Estimation of serum calcium and phosphorus their clinical interpretation.
11.12 Demonstrate the estimation of serum bilirubin	Estimation of serum bilirubin: Total, direct and indirect, their clinical interpretation.
11.13 & 2.2 **11.13-** Demonstrate the estimation of SGOT/ SGPT	Estimation of SGOT (AST)/ SGPT(ALT) and their clinical interpretation.
11.14 Demonstrate the estimation of alkaline phosphatase	Estimation of serum ALP and their clinical interpretation.
11.15 Describe & discuss the composition of CSF	Physical characteristics and chemical composition of CSF

11.16 & 11.19 **11.16-** Observe use of commonly used equipment's/techniques in biochemistry laboratory including: • pH meter • Paper chromatography of amino acid • Protein electrophoresis • TLC, PAGE • Electrolyte analysis by ISE • ABG analyzer • ELISA • Immunodiffusion • Autoanalyser • Quality control	Principle, application and working of following lab equipment's/techniques: pH meter, paper chromatography of amino acids, protein electrophoresis, TLC, PAGE, Electrolyte analysis by ISE, ABG analyzer, ELISA, immunodiffusion, auto analyzer, quality control, DNA isolation from blood/tissue (Paper chromatography of amino acid ,TLC clubbed with 11.5)

Competency No.	**Topics & Subtopics**
•DNA isolation from blood/ tissue **11.19** Outline the basic principles involved in the functioning of instruments commonly used in a biochemistry laboratory and their applications.	

11.17 Explain the basis and rationale of biochemical tests done in the following conditions: - diabetes mellitus, - dyslipidemia, - myocardial infarction, - renal failure, gout, - proteinuria, - nephrotic syndrome, - edema, - jaundice, - liver diseases, pancreatitis, disorders of acid- base balance, thyroid disorders.	Basis and rational of biochemical tests required in the following Conditions: - Diabetes mellitus-blood & urine glucose, microalbumin, ketone bodies and glycated hemoglobin – (Club with 3.8 & 3.10) - Dyslipidemia-lipid profile (Club with 4.5 & 4.7) - Myocardial infarction –CK, LDH, Troponin (Club with 2.6 & 2.7) - Renal failure & nephrotic syndrome, – BUN, Creatinine, urinary protein, cholesterol (Club with 3.8 & 3.10) - Gout- serum uric acid, synovial fluid analysis (Club with 6.3 & 6.4) - liver diseases & Jaundice- LFTs (Club with 6.1) Pancreatitis- serum amylase and lipase (Club with 2.5& 7 2.7) Disorder of acid base balance- ABG analysis for pH, pO_2, O_2 saturation pCO_2, HCO3 and base excess (BE) (Club with 6.7,6.8) - Thyroid disorder – serum free and total T3 & T4 and serum TSH (Club with 6.1)
11.18 Discuss the principles of spectrophotometry. **(Clubbed with 11.6)**	Spectrophotometer –principle & use
Competency No.	**Topics & Subtopics**

11.19 Outline the basic principles involved in the functioning of instruments commonly used in a Biochemistry laboratory and their applications. **(Clubbed with & 11.6 & 11.16)**	Instruments commonly used in Biochemistry laboratory & their applications.
11.20 Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states. **(Clubbed with 11.4)**	
11.21 Demonstrate estimation of glucose, creatinine, urea and total protein in serum. **(Clubbed with 11.7, 11.8)**	
11.22 Calculate albumin: globulin (A/G)ratio and creatinine clearance **(Clubbed with 11.7, 11.8)**	
11.23 Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet.	Energy contents of lipids, carbohydrates & proteins in common food items.
11.24 Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food.	Advantages of unsaturated fats, disadvantages of saturated and trans fats in food

Paper wise distribution of topics

Year: First MBBS Subject: Biochemistry

Paper	Section	Topics	Competency nos. BI
I	A	MCQs on all topics of the paper I	
	B & C	Basic Biochemistry	1.1
		Enzymes	2.1-2.7
		Chemistry & metabolism of carbohydrates	3.1-3.10
		Chemistry & metabolism of lipids	4.1-4.7
		Biological oxidation	6.6
		Xenobiotics	7.5
		Antioxidants &defence system	7.6-7.7
		Nutrition	8.1-8.5
		Extracellular matrix	9.1-9.3
		Oncology , oncogenesis & immunity	10.1-10.5
		Biomedical waste	11.1
		Physical characteristics and chemical composition of CSF	11.15
		Energy contents of lipids, carbohydrates & proteins in common food items, Advantages of unsaturated fats. Disadvantages of saturated and trans fats in food	11.23 & 11.24
		AETCOM- 1.4	
	For long answer question and scenario based / application questions, topics will not be repeated.		
II	A	MCQs on all topics of the paper II	
	B & C	Chemistry & metabolism of proteins	5.1-5.5
		Integration & starvation	6.1
		Nucleic acid metabolism	6.2-6.4

	Organ function test	6.13-6.15
	Molecular biology	7.1-7.3
	Genetic engineering	7.4
	Urine: Screening of inborn errors.	11.5
	Principle, application and working of following lab equipments/techniques: pH meter, paper chromatography of amino acids, protein electrophoresis, TLC, PAGE, Electrolyte analysis by ISE, ABG analyzer, ELISA, immunodiffusion, auto analyzer, quality control, DNA isolation from blood/tissue	11.16
For long answer question and scenario based / application questions, topics will not be repeated.		

Internal Assessment

Biochemisry

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

S	I-Exam (December)			II-Exam (March)		
	Theory	Practical (Including 05 marks For Journals And Log Book)	Total Marks	Theory	Practical (Including 05 marks For Journals And Log Book)	Total Marks
1	100	50	150	100	50	150

	Preliminary Examinations				Remedial internal assessment examination for **Non - eligible** students		
	III-Exam **(July)**				**October**		
	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks		Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
	200	100	300		200	100	300

1. There will be 3 internal assessment examinations in the academic year. The structure of Preliminary examinations should be similar to the structure of University examination.
2. There will be only one additional examination for absent students (due to genuine reason) after approval by the Committee Constituted for the same. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
3. First internal assessment examination will be held in December, second internal assessment examination will be held in March and third internal assessment examination will be held in July.
4. Internal assessment marks for theory and practical will be converted to out of 40. Internal assessment marks, after Conversion, should be submitted to university by 7th of August.
5. The student must secure at least 50% marks for total marks (combined in theory and practical / clinical: not less than 40% marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final university examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.
6. **Remedial internal assessment examination for Non - eligible students**: Student who were not eligible due to less than 50% combined or less than 40% in any theory or practical, will re appear as repeater student for Prelim exam which will be conducted before Supplementary Exam. His/her internal assessment will be calculated on the basis of this Examination marks only. Students who will not be eligible in this Examination will appear with regular batch as repeater student.
7. The internal assessment marks of the remedial examination alone shall be considered and converted into out of 40.

8. Conversion **Formula for calculation of marks in internal assessment examinations**

	First IA	Second IA	Third IA (Prelim)	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% Separately in Theory and Practical, 50% Combined)	
Theory	100	100	200	400	$\frac{\text{Total marks obtained}}{10}$	16 (minimum)	Total of Theory + Practical Must be 40.
Practical	50	50	100	200	$\frac{\text{Total marks obtained}}{5}$	16 (minimum)	

9. Conversion formula for calculation of marks in Remedial internal assessment examination

	Remedial Exam (Prelim)	Int. Assess. marks conversion formula (out of 40)	Eligibility to appear for Supplementary Exam. (after conversion out of 40) (40% Separately in Theory and Practical, 50% Combined)	
Theory	200	$\frac{\text{Total marks obtained}}{5}$	16 (minimum)	Total of Theory + Practical Must be 40.
Practical	100	$\frac{\text{Total marks obtained}}{2.5}$	16 (minimum)	

While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	**Final rounded marks**
15.01 to 15.49	15
15.50 to 15.99	16

First Year MBBS Practical Mark's Structure Internal Assessment Examinations I & II (Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Biochemistry						
Practical					Oral/Viva	Total
Seat No.	Quantitative Experiment	Quantitative Experiment/Urine organic/Urine Report/Quality Control/Interpolation of lab Report /Interpolation of Special Technique	Spots	Journal/ Logbook		
	A	B	C	D	E	F
Max. Marks	15	15	5	5	10	50

First Year MBBS Practical Marks Structure (Prelim)

(Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards)

Biochemistry

Seat No	Case Based Quantitative Estimation	Urine Report/ Quantitative estimation	Quality Control	Interpretation of lab Reports & special techniques (Minimum 2 Interpretation)	Spots	Journal & Logbook	Practical Total	Viva Voce/ Oral	Practical/Viva Total Marks
	A	B	C	D	E	F	G	H	I
Max. Marks	25	15	10	20	10	10	90	10	100

(Please Note - The above examination pattern will be applicable to the students admitted from Academic Year 2019-20 and onwards, which is informed to all Medical Colleges vide University letter No MUHS /X-1 /UG /1692 /2020 Date: 28/02/2020)

First Year MBBS Practical Marks Structure (MUHS Exam)

(Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards)

Biochemistry

Seat No	Case Based Quantitative Estimation	Urine Report/ Quantitative estimation	Quality Control	Interpretation of lab Reports & special techniques (Minimum 2 Interpretation)	Spots	Practical Total	Viva Voce/ Oral	Practical/Viva Total Marks
	A	B	C	D	E	F	G	H
Max. Marks	25	15	10	20	10	80	20	100

(Please Note - The above examination pattern will be applicable to the students admitted from Academic Year 2019-20 and onwards, which is informed to all Medical Colleges vide University letter No MUHS /X-1 /UG /1692 /2020 Date: 28/02/2020)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year	: **First MBBS** *(applicable w.e.f. Sept. 2020& onwards examinations)*					2. Subject Code	: ***Appendix - a***
3. Subject (PSP)	: **Anatomy / Physiology / Biochemistry**						
(TT)	:						
4. Paper :	: ***I***	5. Total Marks	: **100**	6. Total Time	: **3 Hrs.**	7. Remu. (PS)	: **Rs. 300/-**
						8. Remu. (PM)	: **Rs. 350/-**
9. Web Pattern	: [ ]	10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]	12. Web Old QP	: [ ]

Instructions:

SECTION "A" MCQ

1) *Fill ● (dark) the appropriate empty circle below the question number once only.*
2) *Use **blue/black** ball point pen only.*
3) *Each Question carries **One mark.***
4) *A student will not be allotted any marks if he/she overwrites, strikes out or puts white ink on the circle once filled (darkened)*
5) *Do not write anything on the blank portion of the question paper if written anything, such type of act will be considered as an attempt to resort to unfair means.*

SECTION "A" MCQ (20 Marks)

Q1. Multiple Choice Questions (Total 20 MCQ of One mark each) ***(4 MCQ Should be clinical application based)*** (20x1=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions: 1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

SECTION "B" (80 Marks)

2. Brief answer questions (Any Ten out of Eleven) (10x 2= 20)

a) b) c) d) e) f) g) h) i) j) k)

3. Short Answer Questions (Any Eight out of Nine) (8x5= 40)

One SAQ has to be on AETCOM Module ***(For Anatomy 1.1, 1.5, For Physiology 1.2.,1.3&For Biochemistry, 1.4) &*** Minimum 2 SAQs should be Case Based Questions/ Clinically applied Questions.

a) b) c) d) e) f) g) h) i)

4. Long Answer Questions (Any Two out of Three) (2x 10= 20)

a) b) c)

Note: All questions should be structured .Wherever necessary; split up of marks should be specified.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1.	Course and Year	:	**First MBBS** *(applicable w.e.f. Sept. 2020& onwards examinations)*					2. Subject Code	: ***Appendix - a***
3.	Subject (PSP)	:	**Anatomy / Physiology / Biochemistry**						
	(TT)	:							
4.	Paper :	:	***II***	5. Total Marks	: **100**	6. Total Time	: **3 Hrs.**	7. Remu. (PS)	: **Rs. 300/-**
								8. Remu. (PM)	: **Rs. 350/-**
9.	Web Pattern	: [ ]		10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]	12. Web Old QP	: [ ]

Instructions:

SECTION "A" MCQ

1) *Fill ● (dark) the appropriate empty circle below the question number once only.*
2) *Use **blue/black** ball point pen only.*
3) *Each Question carries **One mark.***
4) *A student will not be allotted any marks if he/she overwrites, strikes out or puts white ink on the circle once filled (darkened)*
5) *Do not write anything on the blank portion of the question paper if written anything, such type of act will be considered as an attempt to resort to unfair means.*

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) ***(4 MCQ Should be clinical application based)*** (20x1=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B"

Instructions: 1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answer book for all sections.*

SECTION "B" (80 Marks)

2. Brief answer questions (Any Ten out of Eleven) (10x 2= 20)

a) b) c) d) e) f) g) h) i) j) k)

3. Short Answer Questions (Any Eight out of Nine) (8x5= 40)

Minimum 2 SAQs should be Case Based Questions/ Clinically applied Questions.

4. a) b) c) d) e) f) g) h) i) (2x 10= 20)

Long Answer Questions (Any Two out of Three)

a) b) c)

Note: All questions should be structured .Wherever necessary, split up of marks should be specified.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

MARKLIST FOR PRACTICAL / ORAL / VIVA VOCE

(Summer / Winter – 20...Exam (MBBS UG Courses)

(Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards)

Course : FIRST MBBS **Subject : Biochemistry**

CENTRE : **Marks : (Practical = Practical/Clinical + Viva) Min. 50 Max. 100**

Date : / /20 **Batch :**

Practical							Oral/Viva	Total
Seat No.	Case Based Quantitative Estimation	Urine Report/ Quantitative estimation	Quality Control	Interpretation of lab Report & special techniques (Minimum 2 interpretations)	Spots	Practical (Total)	Viva Voce/Oral Total	Practical/Viva Total Marks
	A	B	C	D	E	F	G	H
Max. Marks	25	15	10	20	10	80	20	100

Note : Both Examiners should jointly conduct practical examination for each student.

Verified above entries from Answerbooks and we hereby certify that the marks entered against each Seat Number are found correct.

	NAME OF EXAMINER	COLLEGE	SIGNATURE WITH DATE	
1			Convenor	
2			Internal	
3			External	
4			External	

Biochemistry

BOOKS RECOMMENDED:

TEXT BOOKS:

1. Biochemistry by -Pankaja Naik
2. Biochemistry for Medical students by -D.M.Vasudevan & Shree Kumari S.
3. Medical Biochemistry - U.Satyanarayan.

REFERENCE BOOKS:

1. Integrated textbook of Biochemistry by- Indumati V and Sowbhagya Lakshmi.
2. Harper's Biochemistry.
3. Medical Biochemistry by -N.V.Bhagwan.
4. Biochemistry by- L.Stryer.

Course Content

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 ; page no.41-59)

Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards

Subject: Community Medicine **Year: First MBBS**

Competency No. CM	Topics & subtopics
	Health care of the communtiy
I17.1	Health care to community
	Visit to primary/secondary health facility
	Role of physician in health care delivery- Integration with AETCOM module 1.1 What does it mean to be doctor?
17.2	Community diagnosis
17.3	Primary Health Care- Def, Principles
17.4	National Health Policies , MDGs
	SDL- Current national / stale level status of health indicators
17.5	Health Care delivery in India
	Nutrition
5.1	Common sources of various nutrients

	Demonstration: Foods we eat & their nutritive values
	Special nutritional requirements according to age, sex, activity, physiological conditions
	SDL- Foods customs in our families for special groups such as children/ pregnant/lactating women/ill persons (data collection by interviewing 5 homemakers)
5.2	Nutritional assessment at individual level- DOAP
	Nutritional assessment at family and community level -DOAP
5.3	Common nutritional deficiency diseases- Epidemiology , prevention and control
5.4	Diet planning at individual level
	Diet planning at family level
5.5	Nutritional surveillance and rehabilitation
	Visit to Nutritional rehabilitation centre
	Nutrition education
5.6	National Nutritional Policy , National Nutritional Programs
5.7	Food hygiene , food adulteration
	Demonstration of simple tests to identify food adulteration
5.8	Food fortification , food additives
	Concept of Health and Disease
1.1	Concept of Public Health
1.2	Concept , definition , determinants of health
	Determinants of health- Group discussion
1.3	Epidemiological triad , multifactorial causation of disease
	SDL-Identification of multiple causative factors of 2 common diseases(interview in wards/ family visit)

1.4	Natural history of disease
1.5	Levels of Prevention
1.6	Health education , IEC, BCC
1.7	Indicators of health
	Exercise on calculation of indicators
1.8	Demographic profile of India
	Exercise on calculation of demographic indicators , fertility rates
	SDL- Demographic trends in India
1.9	Communication skills in Health
	DOAP-Verbal/non verbal communication
	Empathy- What does it mean to be patient? AETCOM module 1.2
1.10	Doctor patient relationship
	SDL- Determinants of doctor patient relationship(Collection of data from patients/ relatives)
	Case discussions – Integration with AETCOM module 1.3
	Principles of health promotion and education
4.1	Methods of health education
	Demonstration of various methods of health education
	Improving communication, barriers in communication- integration with AETCOM module 1.4
4.2	Organization of health educational and counselling activities for individual & family
	Organization of counselling activity in ward/OPDs
	Organization of community based health educational activity(community/school)

4.3	Evaluation of health education & promotion program
	SDL- Preparation of tool for evaluation
	Conducting evaluation of health education & promotion program

Note:

1. The observations/ reflections of family / hospital visits , DOAP sessions , Self directed learning activities (SDL) , practicals should be entered in the log book immediately after the assignment.
2. The observer / facilitator / teacher will provide the written brief feedback in the log book for the learner related to the competencies.

Course Content

PHASE II

Subject: Forensic Medicine & Toxicology

Second Professional

Theory / Practical

(Based on **National Medical Commission, India**, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page nos. 228 -251)

FORENSIC MEDICINE AND TOXICOLOGY

1. Goals

The broad goal of the teaching of undergraduate students in Forensic Medicine is to produce a physician who is well informed about medicolegal responsibilities in practice of medicine. He /She will also be capable of making observations and inferring conclusions by logical deductions to set enquiries on the right track in criminal matters and connected medicolegal problems. He /She acquires knowledge of law in relation to medical practice, medical negligence and respect for codes of medical ethics

2. Objectives

2. (a) KNOWLEDGE:

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

1. Identify the basic medicolegal aspects of hospital and general practice.
2. Define the medicolegal responsibilities of a general physician while rendering community service either in a rural primary health center or an urban health center.
3. Appreciate the physician's responsibilities in criminal matters and respect for the codes of medical ethics.
4. Diagnose, manage and identify also legal aspects of common acute and chronic poisonings.
5. Describe the medicolegal aspects and findings of post-mortem examination in case of death due to common unnatural conditions & poisonings.
6. Detect occupational and environmental poisoning, prevention and epidemiology of common poisoning and their legal aspects particularly pertaining to Workmen's Compensation Act.
7. Describe the general principles of analytical toxicology.
8. Medical jurisprudence in view of the Consumer Protection Act – wherein doctors have been covered under its ambit. They have both rights as well as responsibilities. Under medical insurance acts of negligence covered as well as rights for effective service delivery.

2. (b) SKILLS

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

1. Make observations and logical inferences in order to initiate enquiries in Criminal matters and medicolegal problems.
2. Diagnose and treat common emergencies in poisoning and manage chronic toxicity.
3. Make observations and interpret findings at postmortem examination.
4. Observe the principles of medical ethics in the practice of his profession.

2. (c) INTEGRATION

Department shall provide an integrated approach towards allied disciplines like Pathology, Radiology, Forensic Sciences, Hospital Administration etc. to impart training regarding medicolegal responsibilities of physicians at all levels of health care. Integration with relevant disciplines will provide scientific basis of clinical toxicology e.g., medicine, pharmacology etc.

3. Total duration for Forensic Medicine and Toxicology

a) Semesters: Total 4 Semesters

b) Teaching hours: 125

c) Phase (II): 50 hours

i. Lectures: 15 hours

ii. Self-Directed learning (SDL): 5 hours

iii. Small group teachings/tutorials/Integrated teaching/Practical: 30 hours

d) Phase (III/I): 75 hours

i. Lectures: 25 hours

ii. Self-Directed learning (SDL): 5 hours

iii. Small group teachings/tutorials/Integrated teaching/Practical: 45 hours

4. Syllabus

4. (a) Learning methods:

Lectures, tutorials, practical demonstrations, Small group teachings, integrated teaching, Self-Directed learning (SDL), ATECOM

4. (b)Distribution of teaching hours

Didactic lectures should not exceed one third of the time schedule; two third schedule should include practical, clinicals or/and small group discussions. Learning process should include living experiences, problem-oriented approach, case studies and community health care activities.

5. Topic wise distribution

1. Total Teaching hours : **50**
2. A. Lectures(hours): **15** B. Self-directed learning (hours) : **05**

C. Clinical Postings (hours): Nil.

D. Small group teachings/tutorials/Integrated teaching/Practical's (hours)**: 30**

Competency Nos.	**Topics & Subtopics-**	**TL Methods**
	PHASE II	
FM 1.1, 1.3, 1.4	**Topic: General Information** FM 1.1 Demonstrate knowledge of basics of Forensic Medicine like definitions of Forensic medicine, Clinical Forensic Medicine, Forensic Pathology, State Medicine, Legal Medicine and Medical Jurisprudence FM1.3 Describe legal procedures including Criminal Procedure Code, Indian Penal Code, Indian Evidence Act, Civil and Criminal Cases, Inquest (Police Inquest and Magistrate's Inquest), Cognizable and Non-cognizable offences FM1.4 Describe Courts in India and their powers: Supreme Court, High Court, Sessions court, Magistrate's Court, Labour Court, Family Court, Executive Magistrate Court and Juvenile Justice Board	**Lecture-01**
FM 1.2	FM1.2 Describe history of Forensic Medicine	**SDL-01**

Competency Nos.	Topics & Subtopics-	TL Methods
FM 1.5, 1.6, 1.7, 1.8, 1.9	**Topic: General Information** FM1.5 Describe Court procedures including issue of Summons, conduct money, types of witnesses, recording of evidence oath, affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence & conduct of doctor in witness box FM1.6 Describe Offenses in Court including Perjury; Court strictures vis-a- vis Medical Officer FM1.7 Describe Dying Declaration & Dying Deposition	**Lecture-02**
FM 1.8, 1.9	**Topic: General Information** FM1.8 Describe the latest decisions/notifications/resolutions/ circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc. F.M1.9 Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports	**Lecture-03**
FM 14.20	**Skills in Forensic Medicine & Toxicology** FM14.20 To record and certify dying declaration in a simulated/ supervised environment	**Small group- 1 teachings/tutorials/ Integrated teaching/Practical's**
FM 2.29, 14.22	**Topic: General Information** FM 2.29 Demonstrate respect to the directions of courts, while appearing as witness for recording of evidence under oath or affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence **Skills in Forensic Medicine & Toxicology** FM14.22 To give expert medical/ medico-legal evidence in Court of law	**Small group-2 teachings/tutorials/ Integrated teaching/Practical's**
FM 3.1	**Clinical Forensic Medicine** **IDENTIFICATION** FM 3.1 Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, stature, age determination using morphology, teeth-eruption, decay, bite marks, bones-ossification centres, medico-legal aspects of age-**Part 1**	**Lecture-04**
	IDENTIFICATION FM 3.1 Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, stature, age determination using morphology, teeth-eruption, decay, bite marks, bones-ossification centres, medico-legal aspects of age-**Part 2**	**Lecture-05**
FM 3.1	**IDENTIFICATION** FM 3.1 age determination using morphology, teeth-eruption, bones-ossification centres, medico-legal aspects of age	**Small group- 3 teachings/tutorials/ Integrated teaching**

Competency Nos.	Topics & Subtopics-	TL Methods
		/Practical's
FM 3.2	**IDENTIFICATION** FM 3.2 Describe and discuss identification of criminals, unknown persons, dead bodies from the remains-hairs, fibers, teeth, anthropometry, dactylography, foot prints, scars, tattoos, poroscopy and superimposition	**Lecture-06**
FM 3.2	**IDENTIFICATION** FM 3.2 Dactylography, foot prints, scars, tattoos, poroscopy and superimposition	**Small group- 4 teachings/tutorials/ Integrated teaching /Practical's**
FM 2.1,2.2,2.3	**Forensic Pathology** FM2.1 Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical Death and Brainstem Death FM2.2 Describe and discuss natural and unnatural deaths FM2.3 Describe and discuss issues related to sudden natural deaths	**Lecture-07**
FM 2.5, 2.6. 2.7 2.8	**Forensic Pathology** FM2.5 Discuss moment of death, modes of death - coma, asphyxia and syncope FM2.6 Discuss presumption of death and survivorship FM2.7 Describe and discuss suspended animation FM 2.8 Describe and discuss postmortem changes including signs of death, cooling of body, post-mortem lividity, rigor mortis, cadaveric spasm, cold stiffening and heat stiffening	**Lecture-08**
FM 2.9	**Forensic Pathology** FM2.9 Describe putrefaction, mummification, adipocere and maceration	**Lecture-09**
FM 2.10	**Forensic Pathology** FM2.10 Discuss estimation of time since death	**Lecture-10**
FM 2.11, 2.12, 2.13, 2.14	**Forensic Pathology** FM2.11 Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination FM2.12 Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination FM2.13 Describe and discuss obscure autopsy FM2.14 Describe and discuss examination of clothing, preservation of viscera on post-mortem examination for chemical analysis and other medico-legal purposes, post-mortem artefacts	**Small group- 5 teachings/tutorials/ Integrated teaching/Practical's**
FM 2.15, 2.16,	**Forensic Pathology** FM 2.15 Describe special protocols for conduction of medico-legal	**Small group- 6 teachings/tutorials/**

Competency Nos.	Topics & Subtopics-	TL Methods
2.17, 2.18	autopsies in cases of death in custody or following violation of human rights as per National Human Rights Commission Guidelines FM2.16 Describe and discuss examination of mutilated bodies or fragments, charred bones and bundle of bones. FM2.17 Describe and discuss exhumation. FM2.18 Crime Scene Investigation:- Describe and discuss the objectives of crime scene visit, the duties & responsibilities of doctors on crime scene and the reconstruction of sequence of events after crime scene investigation	**Integrated teaching/Practical's**
FM 1.10 1.11	**Forensic Pathology** FM1.10 Select appropriate cause of death in a particular scenario by referring ICD 10 code FM1.11Write a correct cause of death certificate as per ICD 10 document	**Small group- 7 teachings/tutorials/ Integrated teaching/Practical's**
FM 2.19	**Forensic Pathology** FM 2.19 Investigation of anaesthetic, operative deaths: Describe and discuss special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences	**Lecture-11**
FM 2.30	**Forensic Pathology** FM 2.30 Have knowledge/awareness of latest decisions/notifications/ resolutions/circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc	**SDL-2**
FM 2.33, 2.34, 2.35	**Forensic Pathology** FM 2.33 Demonstrate ability to use local resources whenever required like in mass disaster situations FM 2.34 Demonstrate ability to use local resources whenever required like in mass disaster situations FM 2.35 Demonstrate professionalism while conducting autopsy in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	**Small group- 8 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.9	**Skills in Forensic Medicine & Toxicology** FM14.9 Demonstrate examination of & present an opinion after examination of skeletal remains in a simulated/ supervised environment	**Small group- 9 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.4	**Skills in Forensic Medicine & Toxicology** FM14.4 Conduct and prepare report of estimation of age of a person for medico-legal and other purposes & prepare medico-legal report in a simulated/ supervised environment	**Small group- 10 teachings/tutorials/ Integrated teaching/Practical's**

Competency Nos.	Topics & Subtopics-	TL Methods
FM 14.21	**Skills in Forensic Medicine & Toxicology** FM14.21 To collect, preserve, seal and dispatch exhibits for DNA-Finger printing using various formats of different laboratories.	**Small group- 11 teachings/tutorials/ Integrated teaching/Practical's**
FM 8.1	**Toxicology: General Toxicology** FM8.1 Describe the history of Toxicology	**SDL-3**
FM 8.2, 8.3, 8.6, 8.7, 8.8	**Toxicology: General Toxicology** FM8.2 Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison FM8.3 Describe the various types of poisons, Toxicokinetics, and Toxicodynamics and diagnosis of poisoning in living and dead FM 8.6 Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India FM 8.7 Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids FM 8.8 Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination	**Lecture-12**
FM 8.4	**Toxicology: General Toxicology** FM8.4 Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons	**SDL-4**
FM 8.9	**Toxicology: General Toxicology** FM 8.9 Describe the procedure of intimation of suspicious cases or actual cases of foul play to the police, maintenance of records, preservation and dispatch of relevant samples for laboratory analysis.	**Small group-12 teachings/tutorials/ Integrated teaching/Practical's**
FM 8.10	**Toxicology: General Toxicology** FM8.10 Describe the general principles of Analytical Toxicology and give a brief description of analytical methods available for toxicological analysis: Chromatography – Thin Layer Chromatography, Gas Chromatography, Liquid Chromatography and Atomic Absorption Spectroscopy	**Small group-13 teachings/tutorials/ Integrated teaching/Practical's**
FM 9.1	**Toxicology : Chemical Toxicology** FM9.1 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids	**Small group-14 teachings/tutorials/ Integrated teaching/Practical's**
FM 9.2	**Toxicology : Chemical Toxicology** FM9.2 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard	**Small group-15 teachings/tutorials/ Integrated teaching/Practical's**

Competency Nos.	Topics & Subtopics-	TL Methods
	to Phosphorus, Iodine, Barium	
FM 9.3	**Toxicology : Chemical Toxicology** FM9.3 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium	**Small group-16 teachings/tutorials/ Integrated teaching/Practical's**
FM 9.4	**Toxicology : Chemical Toxicology** FM9.4 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol	**Lecture-13**
FM 9.4	**Toxicology : Chemical Toxicology** FM9.4 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol	**Small group-17 teachings/tutorials/ Integrated teaching/Practical's**
FM 9.5	**Toxicology : Chemical Toxicology** FM9.5 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide	**Small group-18 teachings/tutorials/ Integrated teaching/Practical's**
FM 9.6	**Toxicology : Chemical Toxicology** FM9.6 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases	**Small group-19 teachings/tutorials/ Integrated teaching/Practical's**
FM 10.1	**Pharmaceutical Toxicology** FM10.1 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: i. Antipyretics – Paracetamol, Salicylates ii. Anti-Infectives (Common antibiotics – an overview) iii. Neuropsychotoxicology Barbiturates, benzodiazepins phenytoin, lithium, haloperidol, neuroleptics, tricyclics	**Lecture-14**
FM 10.1	**Pharmaceutical Toxicology** FM10.1 Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to:	**Small group-20 teachings/tutorials/ Integrated teaching/Practical's**

Competency Nos.	Topics & Subtopics-	TL Methods
	iv .Narcotic Analgesics, Anaesthetics, and Muscle Relaxants v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis vi.Gastro- Intestinal and Endocrinal Drugs – Insulin	
FM 11.1	**Toxicology : Biotoxicology** FM11.1 Describe features and management of Snake bite, scorpion sting, bee and wasp sting and spider bite	**Lecture-15**
FM 12.1	**Toxicology : Sociomedical Toxicology** FM12.1 Describe features and management of abuse/poisoning with following chemicals: Tobacco, cannabis, amphetamines, cocaine, hallucinogens, designer drugs & solvent	**Small group-21 teachings/tutorials/ Integrated teaching/Practical's**
FM 13.1	**Topic: Toxicology : Environmental Toxicology** FM13.1 Describe toxic pollution of environment, its medico-legal aspects & toxic hazards of occupation and industry	**SDL-5**
FM 13.2	**Topic: Toxicology : Environmental Toxicology** FM13.2 Describe medico-legal aspects of poisoning in Workman's Compensation Act	**Small group-22 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.2	**Skills in Forensic Medicine & Toxicology** FM 14.2 Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment	**Small group-23 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.3	**Skills in Forensic Medicine & Toxicology** FM14.3 Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination	**Small group-24 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.6	**Skills in Forensic Medicine & Toxicology** FM14.6 Demonstrate and interpret medico-legal aspects from examination of hair (human & animal) fibre, semen & other biological fluids	**Small group-25 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.7, 14.8	**Skills in Forensic Medicine & Toxicology** FM14.7 Demonstrate & identify that a particular stain is blood and identify the species of its origin FM14.8 Demonstrate the correct technique to perform and identify ABO & RH blood group of a person	**Small group-26 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.16	**Skills in Forensic Medicine & Toxicology** FM14.16 To examine & prepare medico-legal report of drunk person in a simulated/ supervised environment	**Small group- 27 teachings/tutorials/ Integrated teaching/Practical's**

Competency Nos.	Topics & Subtopics-	TL Methods
FM 14.17	**Skills in Forensic Medicine & Toxicology** FM14.17 To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.	**Small group- 28 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.17	**Skills in Forensic Medicine & Toxicology** FM14.17 To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.	**Small group- 29 teachings/tutorials/ Integrated teaching/Practical's**
FM 14.17	**Skills in Forensic Medicine & Toxicology** FM14.17 To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.	**Small group- 30 teachings/tutorials/ Integrated teaching/Practical's**

Course Content

Phase III-Part ONE

Subject: Forensic Medicine & Toxicology

Theory / Practical

(Based on **National Medical Commission, India** Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page nos. 228 -251)

1. Total Teaching hours **: 75**
2. A. Lectures(hours)**:25** B. Self-directed learning (hours) **:5**
   C. Clinical Postings (hours):
   D. Small group teachings/tutorials/Integrated teaching/ Practicals (hours**): 45**

AETCOM Modules-3.3-Foundation of Communication and 3.4-Confidentiality

Competency Nos.	Topics & Subtopics-	TL Methods
FM 4.2, 4.3, 4.4, 4.5, 4.22	**Medical Jurisprudence (Medical Law and ethics)** FM 4.2 Describe the Code of Medical Ethics 2002 conduct, Etiquette and Ethics in medical practice and unethical practices & the dichotomy FM 4.3 Describe the functions and role of Medical Council of India and State Medical Councils FM 4.4 Describe the Indian Medical Register FM 4.5 Rights/privileges of a medical practitioner, penal erasure, infamous conduct, disciplinary Committee, disciplinary procedures, warning notice and penal erasure 4.22 Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath.	**Lecture-1**
FM 4.1	**Medical Jurisprudence (Medical Law and ethics)** FM4.1 Describe Medical Ethics and explain its historical emergence	**SDL-1**
FM 4.7, 4.8, 4.9	**Medical Jurisprudence (Medical Law and ethics)** FM4.7 Describe and discuss the ethics related to HIV patients FM4.8 Describe the Consumer Protection Act-1986 (Medical Indemnity Insurance, Civil Litigations and Compensations), Workman's Compensation Act & ESI Act FM4.9 Describe the medico - legal issues in relation to family violence, violation of human rights, NHRC and doctors	**Small group- 1 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.6, 4.24, 4.28	**Medical Jurisprudence (Medical Law and ethics)** FM4.6 Describe the Laws in Relation to medical practice and the duties of a medical practitioner towards patients and society	**Lecture-2**

	FM4.24 Enumerate rights, privileges and duties of a Registered Medical Practitioner. Discuss doctor- patient relationship: professional secrecy and privileged communication FM4.28 Demonstrate respect to laws relating to medical practice and Ethical code of conduct prescribed by Medical Council of India and rules and regulations prescribed by it from time to time	
FM 4.10, 4.11	**Medical Jurisprudence (Medical Law and ethics)** FM4.10 Describe communication between doctors, public and media FM4.11 Describe and discuss euthanasia	**Small group- 2 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.12, 4.16, 4.17	**Medical Jurisprudence (Medical Law and ethics)** FM4.12 Discuss legal and ethical issues in relation to stem cell research FM4.16 Describe and discuss Bioethics FM4.17 Describe and discuss ethical Principles: Respect for autonomy, non- malfeasance, beneficence & justice	**Small group-3 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.18	**Medical Jurisprudence (Medical Law and ethics)** FM4.18 Describe and discuss medical negligence including civil and criminal negligence, contributory negligence, corporate negligence, vicarious liability, Res Ipsa Loquitor, prevention of medical negligence and defenses in medical negligence litigations	**Lecture-3**
FM 4.19	**Medical Jurisprudence (Medical Law and ethics)** FM4.19 Define Consent. Describe different types of consent and ingredients of informed consent. Describe the rules of consent and importance of consent in relation to age, emergency situation, mental illness and alcohol intoxication	**Lecture-4**
FM 4.20, 4.21	**Medical Jurisprudence (Medical Law and ethics)** FM4.20 Describe therapeutic privilege,Malingering, Therapeutic Misadventure, Professional Secrecy, Human Experimentation FM4.21 Describe Products liability and Medical Indemnity Insurance	**Lecture-5**
FM 4.23	**Medical Jurisprudence (Medical Law and ethics)** FM 4.23 Describe the modified Declaration of Geneva and its relevance	**SDL-2**
FM 4.25, 4.26, 4.27	**Medical Jurisprudence (Medical Law and ethics)** FM4.25 Clinical research & Ethics Discuss human experimentation including clinical trials FM4.26 Discuss the constitution and functions of ethical committees FM4.27 Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals	**Small group-4 teachings/tutorials/ Integrated teaching/ Practical's**

FM 2.4	**Forensic Pathology** FM 2.4 Describe salient features of the Organ Transplantation and The Human Organ Transplant (Amendment) Act 2011 and discuss ethical issues regarding organ donation	**Lecture-6**
FM 2.31	**Forensic Pathology** FM2.31 Demonstrate ability to work in a team for conduction of medico-legal autopsies in cases of death following alleged negligence medical dowry death, death in custody or following violation of human rights as per National Human Rights Commission Guidelines on exhumation	**Small group-5 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.14	**Medical Jurisprudence (Medical Law and ethics)** FM 4.14 Describe & discuss the challenges in managing medico-legal cases including development of skills in relationship management – Human behaviour, communication skills, conflict resolution techniques	**Small group- 6 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.15	**Medical Jurisprudence (Medical Law and ethics)** Describe the principles of handling pressure – definition, types, causes, sources and skills for managing the pressure while dealing with medico-legal cases by the doctor	**Small group- 7 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.29	**Medical Jurisprudence (Medical Law and ethics)** FM4.29 Demonstrate ability to communicate appropriately with media, public and doctors	**Small group- 8 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.30	**Medical Jurisprudence (Medical Law and ethics)** FM4.30 Demonstrate ability to conduct research in pursuance to guidelines or research ethics	**Small group- 9 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.4, 3.3	**Mechanical injuries and wounds:** FM 3.4 Define injury, assault & hurt. Describe IPC pertaining to injuries FM 3.3 Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds and their medico-legal aspects	**Lecture-7**
FM 3.3	**Mechanical injuries and wounds:** FM 3.3 Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds	**Lecture-8**
FM 3.3	**Mechanical injuries and wounds:** FM 3.3 Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds	**Lecture-9**
FM 3.3	**Mechanical injuries and wounds:** FM 3.3 Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds	**Lecture-10**

FM 3.5	**Mechanical injuries and wounds:** FM3.5 Describe accidental, suicidal and homicidal injuries. Describe simple, grievous and dangerous injuries. Describe ante-mortem and post-mortem injuries	**Small group-10 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.6	**Mechanical injuries and wounds:** FM3.6 Describe healing of injury and fracture of bones with its medico-legal importance	**Small group-11 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.7	**Mechanical injuries and wounds:** FM3.7 Describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death: Primary and Secondary	**Small group-12 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.8	**Mechanical injuries and wounds:** FM3.8Describe and discuss different types of weapons including dangerous weapons and their examination	**Small group-13 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.9	**Firearm injuries:** FM3.9 Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking	**Lecture-11**
FM 3.10	**Firearm injuries:** FM3.10 Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms	**Lecture-12**
FM 3.10	**Firearm injuries:** FM3.10 Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms	**Lecture-13**
FM 3.11	**Regional Injuries:** FM3.11 Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton	**Lecture-14**
FM 3.12	**Regional Injuries** FM3.12 Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine	**Small group-14 teachings/tutorials/ Integrated teaching/ Practical's**
FM 2.24	**Forensic Pathology**	**Lecture-15**

	FM2.24 Thermal deaths: Describe the clinical features, post-mortem finding and medicolegal aspects of injuries due to physical agents like heat (heat-hyper-pyrexia, heat stroke, sun stroke, heat exhaustion/prostration, heat cramps [miner's cramp] or cold (systemic and localized hypothermia, frostbite, trench foot, immersion foot)	
FM 2.25	**Forensic Pathology** FM2.25 Describe types of injuries, clinical features, patho-physiology, post- mortem findings and medico-legal aspects in cases of burns, scalds, lightening, electrocution and radiations	**Lecture-16**
FM 2.26	**Forensic Pathology** FM 2.26 Describe and discuss clinical features, post-mortem findings and medico-legal aspects of death due to starvation and neglect	**SDL-3**
FM 14.1	**Skills in Forensic Medicine and Toxicology** FM14.1 Examine and prepare Medico-legal report of an injured person with different etiologies in a simulated/ supervised environment	**Small group-15 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.10	**Skills in Forensic Medicine and Toxicology** FM14.10 Demonstrate ability to identify & prepare medicolegal inference from specimens obtained from various types of injuries e.g. contusion, abrasion, laceration, firearm wounds, burns, head injury and fracture of bone	**Small group-16 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.11	**Skills in Forensic Medicine and Toxicology** FM14.11 To identify & describe weapons of medicolegal importance which are commonly used e.g. lathi, knife, kripan, axe, gandasa, gupti, farsha, dagger, bhalla, razor & stick. Able to prepare report of the weapons brought by police and to give opinion regarding injuries present on the person as described in injury report/ PM report so as to connect weapon with the injuries. (Prepare injury report/ PM report must be provided to connect the weapon with the injuries)	**Small group-17 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.12	**Skills in Forensic Medicine and Toxicology** FM14.12 Describe the contents and structure of bullet and cartridges used & to provide medico-legal interpretation from these	**Small group-18 teachings/tutorials/ Integrated teaching/ Practical's**
FM 2.20, 2.21	**Mechanical asphyxia:** FM2.20 Define, classify and describe asphyxia and medico-legal interpretation of post-mortem findings in asphyxial deaths	**Lecture-17**
	Mechanical asphyxia: FM2.21 Describe and discuss different types of hanging and strangulation including clinical findings, causes of death, post-mortem findings and medico-legal aspects of death due to hanging and strangulation including examination, preservation	

	and dispatch of ligature material	
FM 2.21	**Mechanical asphyxia:** FM2.21 Describe and discuss different types of hanging and strangulation including clinical findings, causes of death, post-mortem findings and medico-legal aspects of death due to hanging and strangulation including examination, preservation and dispatch of ligature material	**Lecture-18**
FM 2.22	**Mechanical asphyxia:** FM 2.22 Describe and discuss patho-physiology, clinical features, post- mortem findings and medico-legal aspects of traumatic asphyxia, obstruction of nose & mouth, suffocation and sexual asphyxia	**Lecture-19**
FM 2.23	**Mechanical asphyxia:** FM2.23 Describe and discuss types, patho-physiology, clinical features, post mortem findings and medico-legal aspects of drowning, diatom test and, gettler test.	**Lecture-20**
FM 3.18, 3.13	**SEXUAL OFFENCES** FM3.18 Describe anatomy of male and female genitalia, hymen and its types. Discuss the medico-legal importance of hymen. Define virginity, defloration, legitimacy and its medicolegal importance FM3.13 Describe different types of sexual offences. Describe various sections of IPC regarding rape including definition of rape (Section 375 IPC), Punishment for Rape (Section 376 IPC) and recent amendments notified till date	**Lecture-21**
FM 3.14	**SEXUAL OFFENCES** FM3.14 Describe and discuss the examination of the victim of an alleged case of rape, and the preparation of report, framing the opinion and preservation and dispatch of trace evidences in such cases	**Small group-19 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.15	**SEXUAL OFFENCES** FM3.15 Describe and discuss examination of accused and victim of sodomy, preparation of report, framing of opinion, preservation and dispatch of trace evidences in such cases	**Small group-20 teachings/tutorials/ Integrated teaching/ Practical's**
FM 4.13	**Medical Jurisprudence (Medical Law and ethics)** FM 4.13 Describe social aspects of Medico-legal cases with respect to victims of assault, rape, attempted suicide, homicide, domestic violence, dowry- related cases	**Small group-21 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.14	**Skills in Forensic Medicine and Toxicology** FM14.14 To examine & prepare report of an alleged accused in rape/unnatural sexual offence in a simulated/ supervised environment	**Small group-22 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.15	**Skills in Forensic Medicine and Toxicology** FM14.15 To examine & prepare medico-legal report of a victim of	**Small group-23 teachings/tutorials/**

	sexual offence/unnatural sexual offence in a simulated/ supervised environment	**Integrated teaching/ Practical's**
FM 3.16	**SEXUAL OFFENCES** **SEXUAL OFFENCES** FM3.16 Describe and discuss adultery and unnatural sexual offences- sodomy, incest, lesbianism, buccal coitus, bestiality, indecent assault and preparation of report, framing the opinion and preservation and dispatch of trace evidences in such cases	**Small group-24 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.17	**SEXUAL OFFENCES** FM3.17 Describe and discuss the sexual perversions fetishism, transvestism, voyeurism, sadism, necrophagia, masochism, exhibitionism, frotteurism, Necrophilia	**SDL-4**
FM 3.19	**SEXUAL OFFENCES** FM3.19 Discuss the medicolegal aspects of pregnancy and delivery, signs of pregnancy, precipitate labour superfoetation, superfecundation and signs of recent and remote delivery in living and dead	**Lecture-22**
FM 14.13	**SEXUAL OFFENCES** FM14.13 To estimate the age of foetus by post-mortem examination	**Small group-25 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.20	**SEXUAL OFFENCES** FM 3.20 Discuss disputed paternity and maternity	**Small group-26 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.21	FM 3.21 Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC&PNDT) - Prohibition of Sex Selection Act 2003 and Domestic Violence Act 2005	**Small group-27 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.22, 3.23	**SEXUAL OFFENCES** FM 3.22 Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female FM 3.23 Discuss Sterilization of male and female, artificial insemination, Test Tube Baby, surrogate mother, hormonal replacement therapy with respect to appropriate national and state laws	**Small group-28 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.24, 3.25, 3.26	**SEXUAL OFFENCES** FM 3.24 Discuss the relative importance of surgical methods of contraception (vasectomy and tubectomy) as methods of contraception in the National Family Planning Programme FM 3.25 Discuss the major results of the National Family Health Survey FM 3.26 Discuss the national Guidelines for accreditation,	**Small group-29 teachings/tutorials/ Integrated teaching/ Practical's**

	supervision & regulation of ART Clinics in India	
FM 3.27, 3.28	FM 3.27 Define, classify and discuss abortion, methods of procuring MTP and criminal abortion and complication of abortion. MTP Act 1971 FM 3.28 Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion	**Lecture-23**
FM 3.29	**Torture and Human rights** FM3.29 Describe and discuss child abuse and battered baby syndrome	**Small group-30 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.30	**Torture and Human rights** FM3.30 Describe and discuss issues relating to torture, identification of injuries caused by torture and its sequalae, management of torture survivors	**Small group-31 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.31	**Torture and Human rights** FM3.31 Describe and discuss guidelines and Protocols of National Human Rights Commission regarding torture	**Small group-32 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.32	FM3.32 Demonstrate the professionalism while preparing reports in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	**Small group-33 teachings/tutorials/ Integrated teaching/ Practical's**
FM 3.33	**SEXUAL OFFENCES** FM3.33 Should be able to demonstrate the professionalism while dealing with victims of torture and human right violations, sexual assaults- psychological consultation, rehabilitation	**Small group-34 teachings/tutorials/ Integrated teaching/ Practical's**
FM 5.1, 5.2	**Forensic Psychiatry** FM5.1 Classify common mental illnesses including post-traumatic stress disorder (PTSD) FM5.2 Define, classify and describe delusions, hallucinations, illusion, lucid interval and obsessions with exemplification	**Lecture-24**
FM 5.3, 5.4	**Forensic Psychiatry** FM 5.3 Describe Civil and criminal responsibilities of a mentally ill person FM 5.4 Differentiate between true insanity from feigned insanity	**Lecture-25**
FM 5.5, 5.6	**Forensic Psychiatry** FM5.5 Describe & discuss Delirium tremens FM5.6 Describe the Indian Mental Health Act, 1987 with special	**Small group-35 teachings/tutorials/ Integrated teaching/**

	reference to admission, care and discharge of a mentally ill person	**Practical's**
FM 6.1	**Forensic Laboratory investigation in medical legal practice** FM 6.1 Describe different types of specimen and tissues to be collected both in the living and dead: Body fluids (blood, urine, semen, faeces saliva), Skin, Nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting.	**Small group-36 teachings/tutorials/ Integrated teaching/ Practical's**
FM 6.1	**Forensic Laboratory investigation in medical legal practice** Describe Locard's Exchange Principle	**SDL-5**
FM 6.1	**Forensic Laboratory investigation in medical legal practice** FM 6.1 Describe different types of specimen and tissues to be collected both in the living and dead: Body fluids (blood, urine, semen, faeces saliva), Skin, Nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting.	**Small group-37 teachings/tutorials/ Integrated teaching/ Practical's**
FM 6.2	**Forensic Laboratory investigation in medical legal practice** FM6.2Describe the methods of sample collection, preservation, labelling, dispatch, and interpretation of reports	**Small group-38 teachings/tutorials/ Integrated teaching/ Practical's**
FM 6.3	**Forensic Laboratory investigation in medical legal practice** FM6.3 Demonstrate professionalism while sending the biological or trace evidences to Forensic Science laboratory, specifying the required tests to be carried out, objectives of preservation of evidences sent for examination, personal discussions on interpretation of findings	**Small group-39 teachings/tutorials/ Integrated teaching/ Practical's**
FM 7.1	**Emerging technologies in Forensic Medicine** FM7.1 Enumerate the indications and describe the principles and appropriate use for: - DNA profiling - Facial reconstruction - Polygraph (Lie Detector) - Narcoanalysis, - Brain Mapping, - Digital autopsy, - Virtual Autopsy, - Imaging technologies	**Small group-40 teachings/tutorials/ Integrated teaching/ Practical's**
FM 7.1	**Emerging technologies in Forensic Medicine** FM7.1 Enumerate the indications and describe the principles and appropriate use for: - DNA profiling - Facial reconstruction - Polygraph (Lie Detector)	**Small group-41 teachings/tutorials/ Integrated teaching/ Practical's**

	- Narcoanalysis, - Brain Mapping, - Digital autopsy, - Virtual Autopsy, - Imaging technologies	
FM 14.21	**Skills in Forensic Medicine & Toxicology** FM14.21 To collect, preserve, seal and dispatch exhibits for DNA-Finger printing using various formats of different laboratories.	**Small group-42 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.18	**Skills in Forensic Medicine & Toxicology** FM14.18 To examine & prepare medico-legal report of a person in police, judicial custody or referred by Court of Law and violation of human rights as requirement of NHRC, who has been brought for medical examination	**Small group-43 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.19	**Skills in Forensic Medicine & Toxicology** FM14.19 To identify & prepare medico-legal inference from histo-pathological slides of Myocardial Infarction, pneumonitis, tuberculosis, brain infarct, liver cirrhosis, brain haemorrhage, bone fracture, Pulmonary oedema, brain oedema, soot particles, diatoms & wound healing	**Small group-44 teachings/tutorials/ Integrated teaching/ Practical's**
FM 14.5	**Skills in Forensic Medicine & Toxicology** FM14.5 Conduct & prepare post-mortem examination report of varied etiologies (at least 15) in a simulated/ supervised environment Journal and logbook checking-	**Small group-45 teachings/tutorials/ Integrated teaching/ Practical's** **It can be scheduled at any small groups as per availability of Post Mortem examination.**

MBBS

PHASE II& PHASE III Part -I

Internal Assessment

Subject: Forensic Medicine & Toxicology

Phase	I-Exam (After 3 months from start of II Phase-Jan in case phase II started in Oct.)			II-Exam (After three months of I Interna assessment Examination- Apr.)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks
II MBBS	**50**	**40+10=50**	**100**	**50**	**40+10=50**	**100**

Phase	I-Exam (After 3 months from start of III Phase- Jan/Feb in case phase III started in Oct.)			II-Exam (June/July-Preliminary)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical	Total Marks
III/PART-I MBBS	**50**	**40+10=50**	**100**	**100**	**100**	**200**

1. There will be **4** internal assessment examinations in Forensic medicine. The structure of the Preliminary internal assessment theory examinations should be similar to the structure of University examination.
2. It is mandatory for the students to appear for all the internal assessment Examinations in the respective phases. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.

3. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
4. Internal assessment marks for theory will be out of 250 and practical will be out of 250.
5. Reduce total theory internal assessment to 40 marks and total practical internal assessment to 40 marks. Students must secure at least 50% marks of the total marks (combined in theory and practical; not less than 40 % marks in theory and practical separately) to be eligible for appearing University examination

6. **Conversion Formula for calculation of marks in internal assessment examinations**

	First IA II Phase	Second IA II Phase	Third IA III Phase Part -I	(Prelim) III Phase Part -I	Total	Internal assessment marks: Conversion formula (out of 40)	Eligibility to appear for final University examination (after conversion out of 40) (40% separately in Theory & Practical, 50% Combined)	
Theory	50	50	50	100	250	Total marks obtained / 6.25	16 (Minimum)	Total of Theory + Practical Must be 40.
Practical	50	50	50	100	250	Total marks obtained / 6.25	16 (Minimum)	

7. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	Final rounded marks
15.01 to 15.49	15
15.50 to 15.99	16

8. Students 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 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.

9. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

Second & Third part I MBBS Practical Mark's Structure

Internal Assessment Examinations

INTERNAL ASSESSMENT EXAMINATION-AS PER THE SYLABUS OF THEORY AND PRACTICAL COVERED IN THAT SPECIFIC DURATION OF PHASE-AUTONOMY AT INSTITUTE LEVEL.

Theory Internal Assessment Pattern

Total marks-50

Section A-MCQ's-10 Marks

Section-B- Short Answer Questions-30 Marks (6 out 0f 7)-5 Marks Each

Section-C-Long Answer Questions-10 Marks (1 out of 2)-10 Marks each.

Practical Internal Assessment Pattern

Total Marks-50.

Exercises taught in that particular term-30 Marks

(Each Exercise marks should be as per University Exam pattern)

Viva-10 Marks

Journal and Log book-10 marks

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: PHASE III,PART I , Subject: Forensic Medicine

Paper	Section	Topics
Only one paper	**Section A**	**MCQs on all topics of the paper I**
	Section B	**1Court Procedures**
		2.Identity
		3.Death and it's changes
		4.Toxicology
		5. Forensic Laboratory investigation in medical legal practice
	Section C	**1.Medical Jurisprudence**
		2.Injury-Mechanical,regional,thermal,lightning,electrical etc.
		3.Voilent Asphyxial deaths
		4.Sexual offences **5.Forensic Psychiatry** **6. AETCOM Modules.**
II Not applicable	A	

PHASE III PART I-MBBS Practical Mark's Structure MUHS

Subject: Forensic Medicine & Toxicology													
Practical										Oral/ Viva			Total
Seat No.	Medical Certificate of Cause of Death (MCCD)	Injury report	Survivor/ Accused of Sexual Assault report	Alcohol Intoxication Drunkenness report	Sickness/ Fitness certificate	Age/ Potency/ Foetus Report	Weapon Report	Spots- • Bone-1 • Specimen-1 • Poison-2 • X-ray/ Photograph/ Instrument/ Document-1	Total	Forensic Pathology, Clinical Forensic Medicine	Medical Jurisprudence and Toxicology	Total	Practical & Oral (I + L)
	A	B	C	D	E	F	G	H	I	J	K	L	M
Max. Marks	10	10	10	10	10	10	5	3 X 5= 15	80	10	10	20	100

Suggestions:

1. It is suggested that 2 exercises can be kept as actual case or in simulated environment.
2. In the spots -2 spots can be kept as **OSPE stations.**

Phase III Part I MBBS Practical Mark's Structure Preliminary Examination

Subject: Forensic Medicine & Toxicology													
	Practical									Oral/ Viva			Total
Seat No.	Medical Certificate of Cause of Death (MCCD)	Injury report	Survivor/ Accused of Sexual Assault report	Alcohol Intoxication Drunkenness report	Sickness/ Fitness certificate	Age/ Potency/ Foetus Report	Weapon Report	Spots- • Bone-1 • Specimen-1 • Poison-2 • X-ray/ Photograph/ Instrument/ Document-1	Total	Forensic Pathology, Clinical Forensic Medicine	Medical Jurisprudence and Toxicology	Total	Practical & Oral (I + L)
	A	B	C	D	E	F	G	H	I	J	K	L	M
Max. Marks	10	10	10	10	10	10	5	3 X 5= 15	80	10	10	20	100

Suggestions:

1. It is suggested that 2 exercises can be kept as actual case or in simulated environment.
2. In the spots - 2 spots can be kept as **-OSPE stations.**

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year	:	**MBBS –PHASE III Part -I** *(applicable w.e.f. OCT 2022 & onwards examinations)*				2. Subject Code	:
3. Subject (PSP)	:	**Forensic Medicine & Toxicology**					
(TT)	:						
4. Paper :	: --	5. Total Marks	: **100**	6. Total Time	: **3 Hrs.**	7. Remu. (Rs)	: Rs. 300/-
						8. Remu. (Rs)	: Rs. 350/-
9. Web Pattern	: [ ]	10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]	12. Web Old QP	: [ ]

Instructions:

SECTION "A" MCQ

1) *Put ☒ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x 1=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answer book for all sections.*

SECTION "B" (40 Marks)

2 Short Answer Questions (Any 6 out of 7) (6x5=30)

a) b) c) d) e) f) g)

3 Long Answer Questions (Any 1 out of 2) (1x10=10)

a) b)

SECTION "C" (40Marks)

4 Short answer questions (One short note should be from AETCOM 3.3 and 3.4 is compulsory) (Any 6 out of 7) (6x5=30)

a) b) c) d) e) f) g)

5. Long Answer Questions (Any 1 out of 2) (1x10=10)

a) b)

Maharashtra University of Health Sciences, Nashik

FORENSIC MEDICINE AND TOXICOLOGYLOGBOOK for

PHASE II and PHASE III (Part 1) MBBS STUDENTS AS PER COMPETENCY BASED CURRICULUM

First Edition: 2021

Preface

The National Medical Commission has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize **"Health for all"** as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching learning strategies for the same. With this goal in mind, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of Competency Based Curriculum.

Name of the College

_____

_____

Admission Year: _____

CERTIFICATE

This is to certify that,

Mr/Ms._____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by **National Medical Commission, India** for Phase II & Phase III (Part 1) MBBS Competency Based Curriculum in the subject of **FORENSIC MEDICINE & TOXICOLOGY**.

Date: ___/___/_____

Place: _____

Teacher In-charge **Professor and Head**

Department of FORENSIC MEDICINE & TOXICOLOGY

Instructions

1) This logbook is prepared as per the guidelines of NMC for implementation of Competency based curriculum for Phase II MBBS and Phage III Part one students in the subject of Forensic Medicine & Toxicology.

2) Students are instructed to keep their logbook entries up to date.

3) Students are expected to write minimum 2 reflections on any two activities each of Clinical Forensic Medicine skills & Self-Directed Learning (SDL).

4) Students also have to write reflections on AETCOM Module - Reflections should be structured using the following guiding questions:

- What happened? (What did you learn from this experience)
- So what? (What are the applications of this learning)
- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

5) The logbook assessment will be based on multiple factors like

- Attendance
- Active participation in the sessions
- Timely completions
- Quality of write up of reflections
- Overall presentation

INDEX

Sr. No	Description	Page No's	Status Complete/ Incomplete	Signature of Teacher
1	Clinical Forensic Medicine Skills			
2	Self-Directed Learning, Seminars, Projects, Quizzes			
3	AETCOM Module			
4	Attendance Records			
5	Records of Internal Assessment			

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

Record of Clinical Forensic Medicine & Toxicology Skills

Subject: Forensic Medicine & Toxicology **Phase II & Phase III part I MBBS**

Sub Item: Practicals (Student Lab.) / Practicals(Forensic Medicine & Toxicology) / Vertical Integration / Early Clinical Exposure / Seminar / Self Directed Learning

Competency # addressed	Name of Activity	Date completed : dd-mmyyyy	Attempt at activity First or Only (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date	Feedback Received Initial of learne
FM 14.20	To record and certify dying declaration in a simulated/ supervised environment						
FM 14.22	To give expert medical/ medico-legal evidence in Court of law						
FM 14.9	Demonstrate examination of & present an opinion after examination of skeletal remains in a simulated/ supervised environment						
FM 14.4	Conduct and prepare report of estimation of age of a person for medico-legal and other purposes & prepare medico-legal report in a simulated/ supervised environment						
FM 14.2	Demonstrate the correct						

	technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment						
FM 14.3	Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination						
FM 14.6	Demonstrate and interpret medico-legal aspects from examination of hair (human & animal) fibre, semen & other biologicalfluids						
FM 14.7	Demonstrate & identify that a particular stain is blood and identify the species of itsorigin						
FM 14.8	Demonstrate the correct technique to perform and identify ABO &RH blood group of aperson						
FM 14.21	To collect, preserve, seal and dispatch exhibits for DNA-Finger printing using various formats of different laboratories.						
FM	To examine &						

14.16	prepare medico-legal report of drunk person in a simulated/ supervised environment						
FM 14.17	To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.						
FM 14.1	Examine and prepare Medico-legal report of an injured person with different etiologies in a simulated/ supervised environment						
FM 14.5	Conduct & prepare post-mortem examination report of varied etiologies (at least 15) in a simulated/ supervised environment						
FM 14.10	Demonstrate ability to identify & prepare medicolegal inference from specimens obtained from various types of injuries e.g. contusion, abrasion,						

	laceration, firearm wounds, burns, head injury and fracture ofbone						
FM 14.11	To identify & describe weapons of medicolegal importance which are commonly used e.g. lathi, knife, kripan, axe, gandasa, gupti, farsha, dagger, bhalla, razor &stick. Able to prepare report of the weapons brought by police and to give opinion regarding injuries present on the person as described in injury report/ PM report so as to connect weapon with the injuries. (Prepare injury report/ PM report must be provided to connect the weapon with the injuries)						
FM 14.12	Describe the contents and structure of bullet and cartridges used & to provide medico-legal interpretation from these						
FM 14.13	To estimate the age of foetus by post-mortem examination						
FM 14.14	To examine & prepare report of an alleged accused in						

	rape/unnatural sexual offence in a simulated/ supervised environment						
FM 14.15	To examine & prepare medico-legal report of a victim of sexual offence/unnatural sexual offence in a simulated/ supervised environment						
FM 14.18	To examine & prepare medico-legal report of a person in police, judicial custody or referred by Court of Law and violation of human rights as requirement of NHRC, who has been brought for medical examination						
FM 14.19	To identify & prepare medico-legal inference from histo pathological slides of Myocardial Infarction, pneumonitis, tuberculosis, brain infarct, liver cirrhosis, brain haemorrhage, bone fracture, Pulmonary oedema, brain oedema, soot particles, diatoms & wound healing						

Reflection on Clinical FORENSIC MEDICINE Skills

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

Reflection on Clinical FORENSIC MEDICINE Skills

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

Reflection on Clinical FORENSIC MEDICINE Skills

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

2. Self-Directed Learning (SDL), Seminars, Tutorials, Projects, Quizzes

Sr.No	Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes	Date	Signature of Teacher

Reflection on Self- Directed Learning (SDL) activities

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

Reflection on Self- Directed Learning (SDL) activities

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

Reflection on Self- Directed Learning (SDL) activities

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

3: AETCOM Module

Reflection on AETCOM module

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

Reflection on AETCOM module

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

Reflection on AETCOM module

Name of the session:

Name of the faculty member/ presenter:

Date: **Time:** **Duration:**

Specific learning objectives of the session:

1)

2)

3)

Teaching Learning Methods:

- What happened? (What did you learn from this experience)

- So what? (What are the applications of this learning)

- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

Signature of Teacher-in- charge

4A: Attendance Record of the Student

Sr. No	Phase	Theory (%)	Practical (%)	Signature of the Student	Signature of the Teacher
A	Phase II				
B	Phase III – Part - I				
C	OVER ALL ATTENDANCE				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

SECTION 4B: Details of attending extra classes [For poor attendance (if any)]

Sr.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Section 5. Records of Internal Assessment Examinations

Records of Internal Assessment examinations

Sr.No	Exam	Theory	Practical including viva	Signature of student	Signature of Teacher
1	I Internal Assessment	/ 50	/ 50		
2	II Internal Assessment	/ 50	/ 50		
3	III Internal Assessment	/ 50	/ 50		
4	IV Internal Assessment (Prelim)	/100	/100		
4	Internal Assessment marks	/ 250	/ 250		
5	Betterment exam	/ 100	/ 100		
6	Final Internal Assessment	/ 250	/ 250		
7	Final Internal Assessment (After Conversion)				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Maharashtra University of Health Sciences, Nashik

Practical Journal

Forensic Medicine and Toxicology

Name of Institute: _____

_____

University Roll No: _____

Name of Student: _____

Roll No: _____ Batch: _____

Session From: _____to_____

CERTIFICATE

Certified that this is the Bonafide Record of the practical work done by Mr. / Miss _____

in the Department of Forensic Medicine and Toxicology, _____

_____

during the session from _____ to _____ and his / her work is satisfactory / not satisfactory.

University Roll No. _____

Phase	**Remark**	**Signature of In-charge with Date**
Phase II		
Phase III – Part I		

In-charge Practical Programme Professor & Head

Sign/s of University Examiner/s & Date

Code of Medical Ethics

1. I solemnly pledge myself to consecrate my life to the service of humanity.
2. Even under threat, I will not use my medical knowledge contrary to the laws of humanity.
3. I will maintain the utmost respect for human life from the time of conception.
4. I will not permit consideration of religion, nationality, race, party politics or social standing to intervene between my duty and my patient.
5. I will practice my profession with conscience and dignity.
6. The health of my patient is my first consideration.
7. I will respect the secrets, which are confided in me.
8. I will give my teachers the respect and gratitude, which is their due.
9. I will maintain in my power, the honour and the noble tradition of medical profession.
10. My colleagues will be my brothers.

I make these promises solemnly, freely and upon my honour.

Signature

Place: -

Name _____

Seal: -

Address _____

_____

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Instructions to the students for Practical work

1. Punctuality in attending practical classes should be maintained, as 80 % attendance in practical is mandatory to appear for university examinations.

2. Silence and discipline should be observed during practical work.

3. Clean apron should be worn before entering the practical hall.

4. Every student should bring the practical record, a piece of clean linen, a measuring tape, stethoscope, torch, hammer and a hand lens and coloured pencils.

5. Listen carefully to the instructions given by the teacher for the day's work.

6. After finishing the practical work, complete them in the record book, get the record checked by the teacher on the same day.

Part- I

Medico-legal and Medical Certificates

01. Examination of Skeletal Remains (Bones) For Medicolegal Purpose

1) **List of Bones received** (Name of Bone):--
   a. Gross anatomical characteristic

2) **Condition of Bone**: --
   Brittle, Soiled, Stained, Damaged, Partly Burnt

3) **Human or not:** --
   a. Gross anatomical characteristic b. Microscopic examination,
   c. Chemical analysis of bone ash d. Precipitin test or Antihuman Immunoglobulin

4) **Belong to one individual or more?**
   a. Number, side and size of the bones b. Age and Sex
   c. Morphological similarities d. Use of short wave ultra violet light
   e. X-ray comparison or trabecular pattern f. Neutron activation analysis

5) **Stature:** --(body Height/ length)
   a. Use of multiplication Factor/Regression equation

6) **Race of Individual:** --
   a. Racial peculiarities in the individual bones (various indices)

7) **Age of Individual:** -
   a. Dental status if skull or mandible is available b. Ossification status
   c. Secondary changes in the bones like closure of skull sutures, bony joint surface etc

8) **Sex of Individual:** --
   a. General Characteristic b. Specific Changes in the individual bone
   c. Examination of soft parts if available

9) **Injuries:**
   Ante mortem or Post-mortem or Could not be determined

10) **Manner of Separation:** -
   a. State of soft tissue if available with marks of bite/cut etc.
   b. Changes due to putrefaction

11) **Cause of Death:** -
   a. Any injuries/ fracture b. Foreign body –bullet, pellets or any piece of weapon
   c. Chemical analysis for poisoning d. Neutron activation analysis

12) **Time since Death:** -
   a. State of soft tissue if available b. Changes due to putrefaction
   c. Immunological test d. Precipitin test
   e. Nitrogen content test.

13) **Identification of Subject:** -
   a. Congenital abnormalities or deformities
   b. Acquired peculiarities –injuries fractures etc.
   c. Determination of the blood group from the marrow/ tooth pulp
   d. Age, sex/ Race and stature of the individual
   e. Radiological examination.

Examination of Skeletal Remains (Bones) For Medicolegal Purpose

To,
The Investigating Officer
_____Police Station_____

Subject: - Regarding Examination of Bones (Skeletal remains)
Reference: Your letter No._____ Dated_____ received on Date_____
ADR No/ C.R. No._____ u/s_____

Here with forwarding opinion regarding Skeletal remains Brought by PC_____B.No._____
_____Police Station_____.

Bones / Skeletal remains received in sealed /not sealed condition. Seal verified and found intact.

Observation / Examination Finding

1) List of Bones received: --(Name of Bone)

2) Condition of Bone: --

(Brittle, Soiled, Stained, Damaged, Intact)

3) Human or not: --

4) Belong to one individual or more?

5) Stature: -- (Multiplication factor/Regressive equation)

6) Race: --

7) Age: - A) Ossification Status
B) Secondary Changes
C) Dental Status (Skull, Mandible, Face)

8) Sex: -- A) General Characteristic
B) Specific Changes

9) Injuries: --

10) Manner of Separation:-

11) Cause of Death: -

12) Time since Death: -

13) Identification of Subject: -

Opinion: -

i) From the above finding, I am of opinion that the bone(s) belong to _____
origin of _____Sex and aged about_____
ii.) Cause of death _____
iii) Time since death _____

Signature
Place:- Name of Doctor _____
Seal:- Designation _____

Examination of Skeletal Remains (Bones) For Medicolegal Purpose

To,
The Investigating Officer
_____Police Station_____

Subject: - Regarding Examination of Bones (Skeletal remains)
Reference: Your letter No._____ Dated_____ received on Date_____
ADR No/ C.R. No._____ u/s_____

Here with forwarding opinion regarding Skeletal remains Brought by PC_____B.No._____
_____Police Station_____.

Bones / Skeletal remains received in sealed /not sealed condition. Seal verified and found intact.

Observation / Examination Finding

1) List of Bones received: --(Name of Bone)

2) Condition of Bone: --

(Brittle, Soiled, Stained, Damaged, Intact)

3) Human or not: --

4) Belong to one individual or more?

5) Stature: -- (Multiplication factor/Regressive equation)

6) Race: --

7) Age: - A) Ossification Status
B) Secondary Changes
C) Dental Status (Skull, Mandible, Face)

8) Sex: -- A) General Characteristic
B) Specific Changes

9) Injuries: --

10) Manner of Separation: -

11) Cause of Death: -

12) Time since Death: -

13) Identification of Subject: -

Opinion: -

i) From the above finding, I am of opinion that the bone(s) belong to _____
origin of _____Sex and aged about_____
ii.) Cause of death _____
iii) Time since death _____

Signature
Place:- Name of Doctor _____
Seal:- Designation _____

02. Age Estimation Report

Dental eruption and age-

Temporary Teeth	Eruption Time	Permanent Teeth	Eruption Time
Central incisors (Lower)	6-8 months	First molars	6-7 years
Central incisors (Upper)	7-9 months	Central incisors	6-8 years
Lateral incisors (Upper)	7-9 months	Lateral incisors	8-9 years
Lateral incisors (Lower)	10-12 months	First Bicuspid	9-11 years
first molars	12-14 months	Second Bicuspid	10-12 years
Canines	17-18 months	Canines	11-12 years
Second molars	20-30 months	Second molars	12-14 years
		Third molars	17-25 years

Development of hairs-

A) Axillary hair –

- 14 - 15 years : Brownish, soft space growth
- 16 –17 years : Thick, black, well grown

B) Beard and moustaches –

- 15 – 16 years – Begins to appear as downy, brown hair over chin.
  Moustaches appear earlier than beard.
  1-2 year after eruption hair became blackish and thick.

C) Pubic hairs –

- Stage I – Few brownish, downy hair (12-14 years)
- Stage II – darken and more curled pubic hair (14-16 years)
- Stage III - Darker, thicker, curly adult hair but no hair over medial surface of thigh (16-18 years)
- Stage IV – Thick, black curly pubic hair spread both over Mons pubis and medial surface of thighs (>18 years)

Ossification centres-

Joint	Bone	Appearance of Ossification centres	Fusion of ossification centres
Elbow	Humerus	**Lower end-** Capitulum-1 year Trochlea- 10 yrs Lateral epicondyle- 11 yrs Medial epicondyle- 6 to 7 yrs	Lower end of humerus complete fusion- 14 to 16 yrs
	Radius	Upper end (head) - 5 yrs	16 yrs
	Ulna	Upper end (Olecranon)- 9 yrs	16 yrs
Wrist	Radius	Lower end- 2 yrs	18-19 yrs
	Ulna	Lower end- 6 yrs	17-18 yrs
	Carpals	Pisiform-11 yrs, Trapezoid, Scaphoid-5yrs	Base of first metacarpal- 15 yrs
Pelvis	Tri-radiate cartilage	Separate centre in acetabulum-13 yrs	Fuses in acetabulum- 15 yrs
	Ischio-Pubic rami	---	Unites with each other- 6 yrs
	Femur	Lesser trochanter – 12 to 14 yrs	Head and both trochanters-17-18 yrs
		Iliac crest- 14 yrs	20-21 yrs
		Ischial tuberosity- 16 yrs	20-21 yrs

Tanner staging- sexual maturity

MALE (Genital development)

Stage 1: Pre-adolescent stage. Testis, penis, scrotum about same size as childhood. No pubic hair.

Stage 2: Enlargement of scrotum and testis. Skin of scrotum reddens and changes in texture. Scanty light pubic hair mainly at base of penis. Little enlargement of penis.

Stage 3: Further growth of scrotum. Pubic hair darkens and begins to curl. Penis enlarges mainly in length.

Stage 4: Increase in breadth of penis. Development of glans. Scrotum enlarges and darkens. Adult type of pubic hair but does not spread to medial part of thigh.

Stage 5: Genitalia adult type. (Penis-10-12cm, Volume of testis-20cc, length of testis-4cm or more) Pubic hair spreads to medial part of thigh.

FEMALE (Breast / Pubic hair development)

Stage1: Preadolescent; breast shows elevation of papilla only. No pubic hair

Stage2: Breast bud stage. Elevation of breast and papilla as a small mound. Enlargement of areola diameter. Scanty lightly pigmented pubic hair, mainly at labia.

Stage3: Further enlargement of breast and areola, no separation at contours. Pubic hair becomes darker and begins to curl.

Stage4: Projection of areola and papilla to form a secondary mound above the level of breast. Adult type of pubic hair less in amount and no spread to medial surface of thigh.

Stage5: Mature stage. Projection of nipple only; recession of areola to the level of general contour of breast. Adult feminine triangular type of pubic hair, may spread to medial side of thigh.

Age Estimation Report

A. Preliminary Information- Name: Shri/ Smt/ Kum. _____

Age as stated- _____ Sex- _____ Address- _____

Brought by: _____

Date: _____ Time: _____ MLC No: _____ Dated: _____

Consent: I am willing to get examined physically and radiologically for estimation of age.

(*This consent is explained to patient in _____ language*)

Signature/Thumb impression
(Subject/Guardian)

Examined in presence of-
Signature/Thumb impression

Identification Marks:

1. _____
   _____
2. _____
   _____

B. Clinical Examination:

Physical development _____ Height_____ Weight _____

Secondary Sexual Characters:

Male moustaches _____ Female Breast development _____

Beard_____ Menarche _____

Voice_____ Last Menstrual period (LMP)_____

Axillary hair_____ Axillary hair _____

Pubic hair_____ Pubic hair _____

External genitalia_____ External genitalia_____

C. Dental status-

Spacing behind second molar- _____ Abnormality if any-_____

D. Radiological Examination: Reference: x-ray plate no._____ Date- _____

1.
2.
3.
4.

<u>Conclusion</u>: From clinical, dental and radiological examinations, the age of the subject on date _____ is between _____ to_____ including margins of errors.

Date: -
Place: -

Seal

Signature
Name of Doctor _____
Designation _____

Age Estimation Report

A. Preliminary Information- Name: Shri/ Smt/ Kum. _____

Age as stated- _____ Sex- _____ Address- _____

Brought by: _____

Date: _____ Time: _____ MLC No: _____ Dated: _____

Consent: I am willing to get examined physically and radiologically for estimation of age.

(*This consent is explained to patient in _____ language*)

Signature/Thumb impression

(Subject/Guardian)

Examined in presence of-

Signature/Thumb impression-

Identification Marks:

1. _____

   _____

2. _____

   _____

B. Clinical Examination:

Physical development _____ Height_____ Weight _____

Secondary Sexual Characters:

Male moustaches _____ Female Breast development _____

Beard_____ Menarche _____

Voice_____ Last Menstrual period (LMP)_____

Axillary hair_____ Axillary hair _____

Pubic hair_____ Pubic hair _____

External genitalia_____ External genitalia_____

C. Dental status-

Spacing behind second molar- _____ Abnormality if any-_____

D. Radiological Examination: Reference: x-ray plate no._____ Date- _____

1.

2.

3.

4.

Conclusion: From clinical, dental and radiological examinations, the age of the subject on date _____ is between _____ to_____ including margins of errors.

Date: -

Place: -

Seal

Signature

Name of Doctor _____

Designation _____

03. Examination of Foetus for Age

To

The Investigating Officer

_____ Police Station _____

Subject: Submission of Report of Examination of Foetus for Age.
Reference: Your letter No._____ _____ Dated _____ _____ _____

Sir,

I am sending to you the Report of Examination of Foetus for Age.

Observations-

I. External Examination:

1. Length:
2. Weight:
3. Lanugo:
4. Scalp Hair:
5. Eyes:
6. Pupillary Membrane:
7. Nails:
8. Vernix Caseosa:
9. Umbilicus:
   position & status
10. Genitalia:
11. Any other finding:

II. Internal Examination:

1. Ossification centres:
2. Meconium:
3. Any other findings:

Opinion about the age of foetus: _____

_____

_____

_____

_____

Place:
Date and Time:

Signature
Name of Doctor _____
Designation _____

Receipt: Received original copy of the report, the new-born,
_____ & its belongings. Name & Signature of I.O.

Table: Age-related Changes in the Foetus

Parameter	Age in Lunar Months							
	3rd	4th	5th	6th	7th	8th	9th	10th
Length	About 9 cm	About 16 cm	About 25 cm	About 30 cm	About 35 cm	About 40 cm	About 45 cm	About 45-50 cm
Weight	About 30gm	About 120gm	About 400gm	About 700gm	About 1kg	About 1.5kg	About 2-2.5kg	About 3-3.5kg
Nails	In membra-nous form	-	Nearing tips of fingers	-	Thicker but do not reach ends of fingers	Reach tips of fingers	Beyond tips of fingers	Beyond tips of fingers but reach only the tips of toes
Lanugo	-	First exhibited between 13 and 16 weeks	Covers face and body	-	Greatest between 28 and 30 weeks	Dis-appeared from the face	Around shoulders only	-
Scalp Hair	-	-	Appear	Appreciable	About 1.0 cm long	About 1.5 cm long	About 2 cm long	About 2-3 cm long
Sex	Indisting uishable	Differen-tiable	-	-	-	-	-	-
Eyes	-	-	-	Eyelids adherent. Eyelashes Appear	Eyelids non–adherent. Eyelashes Present	Well–Formed	-	-
Pupil Membrane	Appears	Visible	Present	Present	Disappears	-	-	-
Vernix Caseosa	-	-	Appears	Present	-	-	Present over flexures of joints and neck folds	Present over flexures of joints and neck folds
Meconium	-	In the upper part of small intestine	In the beginning of large intestine	In the upper part of large intestine	In the whole of large intestine	-	In the Rectum	-
Testicles	-	-	-	Lie close to respective kidneys	Lt—near the external inguinal ring; Rt—near the internal inguinal ring	Lt—in the scrotum Rt—near the external inguinal ring	Both testicles in the scrotum	
Centres of ossification	-	-	For calcaneum and ischium	For manubrium & 1st segment of sternum	For talus, 2nd & 3rd segment of sternum	-	For lower end of femur	For cuboid upper end of tibia, etc.

04. Medical Certificate of Cause of Death (MCCD)

The data on cause of death contained in the certificate serve many purposes: they help in assessing the effectiveness of public health programmes and provide a feed-back for future policy and implementation. They are essential for better health planning and management and for deciding priorities of health and medical research programmes.

- Legal Provisions: Registration of Birth & Deaths Act (RBD), 1969 for certification by a medical practitioner who has attended the deceased during the latter's last illness. The relevant sections of the Act are: **Section 10(2)**, **Section 10(3), Section 17(1) (b)**

2. SPECIFIC INSTRUCTIONS

2.1 Name of the deceased

To be given in full. Do not use initials. Also give name of father (or husband in case of married female) after the name of the deceased, using appellation S/o or D/o or W/o. In case of infants not yet named, write son (or daughter) of, followed by names of mother and father.

2.2 Age

If more than a year old, give age in years last birthday (completed number of years). If under one year, give age in months and days. If under 24 hours, give in hours and minutes. 2.3 Method of certification of cause of death 2.3.1 The medical part of the certificate is designed by the WHO to facilitate reporting the underlying cause of death and to obtain information of the causal and pathological sequence of events leading to death. It consists of two parts, the first relating to the sequence of events leading to death, and the second to other significant conditions that contributed to the death.

2.3.2 This part should be written by the attending physician or a physician having personal knowledge of the case history. The names of the diseases should be written in full and legibly to avoid the risk of their being misread. Abbreviations and short form of disease condition should not be used. He should avoid indefinite or inadequate terms. Inadequate descriptions may put the statistical office in difficulty at the time of classification of the data. Mention of terminal events or mode of dying as the only entry in the statement leaves the certificate incomplete. Similarly, symptomatic remarks will not suffice. A properly completed certificate will show the underlying cause on the lowest used line of part I and the conditions if any, as a consequence thereof will have been entered above it in ascending casual order of sequence.

2.3.3 PART – I OF THE CAUSE OF DEATH STATEMENT

Only one cause is to be entered on each line of Part I. The underlying cause of death should be entered on the lowest line used in this part. The underlying cause of death is the condition that started the sequence of events between normal health and the (direct) immediate cause of death.

Line (a): Immediate cause

The direct or immediate cause of death is reported on line (a). This is the disease, injury or complication that directly preceded death. It can be the sole entry in the statement if only one condition was present at death. There must always be an entry on line (a). The mode of dying (e.g., heart failure, respiratory failure) should not be stated at all since it is no more than a symptom of the fact that death occurred and provides no useful information. In the case of a violent death, enter the result of the external cause (e.g., fracture of vault or skull, crushed chest).

Line (b): Due to (or as a consequence of) If the condition on line (a) was the consequence of another condition, record that in line (b). This condition must be antecedent to the immediate cause of death, both with respect to time and etiological or pathological violence or circumstances of accident is antecedent to an injury entered on line (a) and should be entered on line (b), although the two events are almost simultaneous (e.g., automobile accident, fall from tree). An antecedent condition might have just prepared the way for the immediate cause of death, by damage to tissues or impairment of function, even after a long interval.

Line (c): The condition, if any which gave rise to the antecedent condition on line (b) is to be reported here. The remarks given for line (b) apply here also. If the condition on line (b) is the underlying cause, nothing more be entered on this line. However, if the sequence of events comprises more than three stages, extra line (and entries) may be made in part I. However, many conditions are involved; write the full sequence, one condition per line, with the most recent condition (immediate cause) at the top, and the earliest (the condition that started the sequence of event between normal health and death) last. Normally the condition or circumstance on the lowest line used in part I will be taken as the basis for underlying cause statistics, though classification of it may be modified to take account of complications or other conditions entered by special provisions of the ICD.

2.3.4 PART-II OTHER SIGNIFICANT CONDITIONS

Enter, in order of significance, all other diseases or conditions believed to have unfavourably influenced the course of the morbid process and thus contributed to the total outcome but which were not related to the disease or condition directly causing death. There will be cases where it will be difficult to decide whether a condition relevant to death should be recorded as part of the fatal sequence in part I or as a contributory condition in part II. Conditions in part I should represent a distinct sequence so that each condition may be regarded as being the consequence of the condition entered immediately below it. Where a condition does not seem to fit into such a sequence, consider whether it belongs to part II. In certifying the causes of death for Part II, any disease, abnormality, injury or late effects of poisoning, believed to have adversely affected the decedent should be reported, including: • Use of alcohol and/or other substances. • Smoking history. • Environmental factors, such as exposure to toxic fumes, history of working in some specific industry, professional exposure to toxins, specific animals etc. • Recent pregnancy, if believed to have contributed to the death. • Late effects of injury, including head injury sequelae • Surgical information, if applicable. • Any iatrogenic underlying cause.

2.3.5 INTERVAL BETWEEN ONSET AND DEATH

Space is provided, against each condition recorded on the certificate for the interval between the presumed onset of morbid condition and the date of death. Exact period should be written when it is known; in other cases, approximate periods like “from birth”, “several years” or “unknown” should be indicated. This provides a useful check on the sequence of causes as well as useful information about the duration of illness in certain diseases.

2.4 Accidents or suicide or homicide is ruled out, how the fatal injury occurred should be explained indicating briefly the circumstances or cause of the accident. In case of medico-legal cases, the certificate has to be given by the police authorities. However, the Registrar should be informed of such cases, by the hospital.

2.5 Female death Information on pregnancy and delivery is needed in case of death of women in the childbearing age (15 to 49 years) even though the pregnancy may have had nothing to do with the death. 2.6 Ensuring completeness of information

2.6.1 While giving the casual chain of events in the statement of cause of death, a complete case history is not required but, if information is available, enough details may be given to enable proper classification of the underlying cause. The certifier cannot always be certain as to what details are required and therefore, a list giving examples of incomplete descriptions and what additional information are required is included in the annexure for guidance.

The terms included in the annexure are those employed usually and are of the following types: - (i) A symptom that may arise from different group of diseases. (ii) A morbid condition that could result from several types of infection, known or unknown. (iii) With connotation of any of several morbid conditions having distinctive categories in the classification list like acute, sub-acute, chronic, simple etc. (iv) Mention of a disease which is generally localised, without indicating the organ or part of the body affected. (v) A morbid condition that requires for its classification, a knowledge of the circumstances in which it arose.

2.6.2 As a general rule, record diagnoses as precisely as the information permits, incorporating relevant details from histological or autopsy reports. Where an important detail is unknown the fact should be stated.

2.6.3 The following gives the pertinent details required to be spelt out in the medical part of the certificate corresponding to the major cause group of mortality;

1. Infections: Acute, sub-acute or chronic, name of the disease and/or infecting organism, the site if localised; mode of transmission, where relevant.
2. Neoplasms: The morphological type if known; malignant, benign etc., site of origin of primary growth and sites of secondary growths.
3. Endocrine disorders: Nature of disease process or disturbance of function: For thyroid diseases, whether toxic: for diabetes, nature of complication or manifestation in particular site.
4. Nutritional disorders: Type of deficiency, etc., and severity.
5. Blood disorders: Nature of disease process; type and nature of any deficiency for anaemias; whether hereditary (where relevant)
6. Nervous system disorders: Disease process; infecting organism (where relevant) whether hereditary (where relevant).
7. Circulatory diseases: Nature of disease process; site, if localized; acute or chronic where relevant, specify rheumatic or other aetiology for valvular heart conditions; any complications.
8. Respiratory diseased: Nature of disease process; acute or chronic; infecting organism, any external cause.
9. Digestive diseased: Nature of disease process; site of ulcers, hernias, diverticula, etc. Acute or chronic where relevant, nature of any complication for ulcers, appendicitis, hernias.
10. Genitourinary disorders: Acute or chronic, clinical syndrome and pathological lesions; site of calculi, infecting organism and site of infections; nature of complications.
11. Maternal deaths: Nature of complication: whether obstruction occurred during labour; timing of death in relation to delivery; for abortions, whether spontaneous or induced, legal or illegal, if induced.
12. Musculoskeletal disorders: Nature of disease process, infecting organism, underlying systemic diseases (where relevant); site; complication, whether congenital or acquired for deformities.
13. Congenital anomalies: Site and type, complications.

14. Perinatal deaths: Condition in foetus or infant; conditions in mother or of placenta, cord or membranes, if believed to have affected the foetus or infant; for deaths associated with immaturity, state length of gestation and/or birth weight; type of birth trauma; and complications, etc.
15. Injuries: Type, site, complications.
16. Poisoning: Substance involved; whether accidental (if suicide or homicide is ruled out). 17. Adverse effects of drugs in therapeutic use: State this fact and name or drug, nature of adverse effect, complications; condition treated.
17. External cause of accidents: For transport accidents, state vehicle involved, whether deceased was driver, passenger, etc. Description of accident place of occurrence, for other accidents, specifies circumstances and place of occurrence.
18. Old age or senility: This should not be given if a more specific cause is known. If old age was a contributory factor it should be entered in part II only.

ICD classification of diseases

The International Classification of Diseases (ICD) is the standard classification system for epidemiology, health management and clinical purposes. It contains a finite number of mutually exclusive code categories, describing all disease conditions. The classification is hierarchical in structure with subdivisions to identify broad groups and specific entities.

There are 3 key elements to the structure of ICD-10:

1. It has 3 volumes
    i. Volume 1 -- a tabular listing of diseases
    ii. Volume 2 -- an instruction manual
    iii. Volume 3 -- the comprehensive alphabetical index of diseases
2. It has 22 chapters
3. The structure of the ICD code is alphanumeric

Filling ICD code on a death certificate

The ICD code should be coded for all causes of death (immediate, intermediate and underlying causes) on a death certificate. ICD code for each cause of death should be filled against the particular cause of death in the death certificate.

Example: Patient XYZ is admitted with Acute Gastroenteritis and Dehydration & then dies in the ward.

Name of the Deceased					For use of Statistical office
Sex	Age at Death: If 1 year or more, age in years	If less than 1 year, age in Months	If less than one month, age in days	If less than one day, age in hours	
1. Male 2.Female 3.Transgender					
CAUSE OF DEATH				Interval between onset & death approx	
I					
Immediate Cause	(a) Dehydration				E86
State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc.,	Due to (or consequences of)			.....	.....
	Acute Gastroenteritis				A09
Antecedent Cause Morbid conditions, if any, giving rise To the above Cause, stating underlying conditions last	(b)..... Due to (or consequences of) (c).....			.....	.....
II					
Other significant conditions contributing to the death but not related to the disease or conditions causing it	....			....	....

FORM NO. 4
(*See Rule 7*)

MEDICAL CERTIFICATE OF CAUSE OF DEATH
(Hospital In-patients. Not to be used for still births)

To be sent to Registrar along with Form No. 2 (Death Report)

Name of the Hospital _____
I hereby certify that the person whose particulars are given below died in the hospital in Ward No._____ On_____ At _____ AM/PM.

Name of the deceased					For use of statistical purpose
Sex	Age at death				
	If 1 year or more, age in years	If less than 1 year, age in month	If less than one month, age in days	If less than one day, age in hours	
1, Male 2.Female					
CAUSE OF DEATH				Interval between onset and death approx.	
I. Immediate cause: State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc.	a) ……..… due to (or as a consequence of)				
Antecedent cause: Morbid conditions, if any, giving rise to the above cause, stating the underlying conditions last.	b) …… due to (or as a consequence of)				
II. Other significant conditions contributing to the death, but not related to the diseases or conditions causing it.	c) …… …… ……				

Manner of Death How did the injury occur?
1. Disease 2. Accident 3. Assault 4. Intentional self-harm 5. Legal intervention 6. War
7. Pending investigation 8. Could not be determined.

If deceased was a female, was pregnancy the death associated with? 1. Yes 2. No
If yes, was there a delivery? 1. Yes 2. No

Name and signature of the Medical Attendant certifying the cause of death
Date of verification _____

(*To be detached and handed over to the relative of the deceased*)

Certified that Shri/Smt/Kum_____S/W/D of Shri _____
R/O _____ was admitted to this hospital on _____
and expired on _____.

Doctor_____
(Medical Superintendent & Name of Hospital)

ANNEXURE-II

For **Hospital Events**

FORM NO. 4

(*See Rule 7*)

MEDICAL CERTIFICATE OF CAUSE OF DEATH

(Hospital In-patients. Not to be used for still births)

To be sent to Registrar along with Form No. 2 (Death Report)

Name of the Hospital _____

I hereby certify that the person whose particulars are given below died in the hospital in Ward No._____ On_____ At _____ AM/PM.

<table>
<tr><td colspan="5">Name of the deceased</td><td rowspan="2">For use of statistical purpose</td></tr>
<tr><td>Sex</td><td colspan="4">Age at death</td></tr>
<tr><td></td><td>If 1 year or more, age in years</td><td>If less than 1 year, age in month</td><td>If less than one month, age in days</td><td>If less than one day, age in hours</td><td></td></tr>
<tr><td>1, Male
2.Female</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="4">CAUSE OF DEATH

I. Immediate cause:
State the disease, injury or complication
which caused death, not the mode of dying
such as heart failure, asthenia, etc.
a) …… …
due to (or as a consequence of)

Antecedent cause:
Morbid conditions, if any, giving rise to the above cause, stating the underlying conditions last.
b) ……
due to (or as a consequence of)

II. Other significant conditions contributing to the death, but not related to the diseases or conditions causing it.
c) ……
……
……</td><td colspan="2">Interval between onset and death approx.</td><td></td></tr>
</table>

Manner of Death — How did the injury occur?

1. Disease 2. Accident 3. Assault 4. Intentional self-harm 5. Legal intervention. 6. War
7. Pending investigation 8. Could not be determined.

If deceased was a female, was pregnancy the death associated with? 1. Yes 2. No

If yes, was there a delivery? 1. Yes 2. No

Name and signature of the Medical Attendant certifying the cause of death

Date of verification _____

(To be detached and handed over to the relative of the deceased)

Certified that Shri/Smt/Kum_____S/W/D of Shri _____

R/O _____ was admitted to this hospital on _____

and expired on _____.

Doctor_____

(Medical Superintendent & Name of Hospital)

For **Non-Hospital** Events

FORM NO. 4 A

(*See Rule 7*)

MEDICAL CERTIFICATE OF CAUSE OF DEATH

(For non-institutional deaths. Not to be used for still births)

To be sent to Registrar along with Form No. 2 (Death Report)

Name of the Hospital_____

I hereby certify that the person whose particulars are given below died in the hospital in Ward No._____ On_____ At _____AM/PM.

<table>
<tr><td colspan="5">Name of the deceased</td><td rowspan="2">For use of statistical purpose</td></tr>
<tr><td>Sex</td><td colspan="4">Age at death</td></tr>
<tr><td></td><td>If 1 year or more, age in years</td><td>If less than 1 year, age in month</td><td>If less than one month, age in days</td><td>If less than one day, age in hours</td><td></td></tr>
<tr><td>1, Male
2.Female</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="4">CAUSE OF DEATH

I. Immediate cause:
State the disease, injury or complication
which caused death, not the mode of dying
such as heart failure, asthenia, etc.
a) …… …
due to (or as a consequence of)

Antecedent cause:
Morbid conditions, if any, giving rise to the above cause, stating the underlying conditions last.
b) ……
due to (or as a consequence of)

II. Other significant conditions contributing to the death, but not related to the diseases or conditions causing it.
c) ……
……
……</td><td>Interval between onset and death approx.</td><td></td></tr>
</table>

If deceased was a female, was pregnancy the death associated with? 1. Yes 2. No

If yes, was there a delivery? 1. Yes 2. No

Name and signature of the Medical Attendant certifying the cause of death

Date of verification_____

(To be detached and handed over to the relative of the deceased)

Certified that Shri/Smt/Kum _____ S/W/D of Shri _____

R/O_____ was under my treatment from _____ to _____

and expired on _____at _____ AM/PM.

Doctor _____

Signature and address of Medical Practitioner/

Medical attendant with Registration No.

For **Non-Hospital** Events

FORM NO. 4 A

(*See Rule 7*)

MEDICAL CERTIFICATE OF CAUSE OF DEATH

(For non-institutional deaths. Not to be used for still births)

To be sent to Registrar along with Form No. 2 (Death Report)

Name of the Hospital_____ I hereby certify that the person whose particulars are given below died in the hospital in Ward No._____ On_____ At _____AM/PM.

<table>
<tr><td colspan="5">Name of the deceased</td><td rowspan="2">For use of statistical purpose</td></tr>
<tr><td>Sex</td><td colspan="4">Age at death</td></tr>
<tr><td></td><td>If 1 year or more, age in years</td><td>If less than 1 year, age in month</td><td>If less than one month, age in days</td><td>If less than one day, age in hours</td><td></td></tr>
<tr><td>1, Male
2.Female</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="4">CAUSE OF DEATH

I. Immediate cause:
State the disease, injury or complication
which caused death, not the mode of dying
such as heart failure, asthenia, etc. a) …… …
due to (or as a consequence of)

Antecedent cause:
Morbid conditions, if any, giving rise to the above cause, stating the underlying conditions last. b) ……
due to (or as a consequence of)

II. Other significant conditions contributing to the death, but not related to the diseases or conditions causing it. c) ……
……
……</td><td>Interval between onset and death approx.</td><td></td></tr>
</table>

If deceased was a female, was pregnancy the death associated with? 1. Yes 2. No

If yes, was there a delivery? 1. Yes 2. No

Name and signature of the Medical Attendant certifying the cause of death

Date of verification_____

(To be detached and handed over to the relative of the deceased)

Certified that Shri/Smt/Kum _____ S/W/D of Shri _____

R/O_____ was under my treatment from _____ to _____

and expired on _____at _____ AM/PM.

Doctor _____

Signature and address of Medical Practitioner/

Medical attendant with Registration No.

05. Medical Sickness / Under Treatment Certificate

Recent Passport size photo

Name of Patient: _____

Age: _____ Sex : _____

Address : _____

OPD/IPD No._____

ID Proof & No. (Any Govt ID) : _____

Identification Marks:

1. _____

_____

2. _____

_____

Signature & Thumb Impression of the Applicant: _____

I, Dr_____ after careful personal examination of the case hereby certify that _____ whose signature is given above is suffering from _____.

He/she is under my treatment for the same as outdoor/indoor patient and I consider that a period of absence from duty with effect from _____ to _____ (_____Days) is absolutely necessary for the restoration of his/her health.

Place:

Date and Time:

Signature

Name of Doctor _____

Designation _____

06. Medical Fitness Certificate

Recent Passport size photo

Name of Patient: _____

Age: _____ Sex: _____

Address: _____

OPD/IPD No._____

ID Proof & No. (Any Govt ID) : _____

Identification Marks:

1. _____

_____

2. _____

_____

Signature & Thumb Impression of the Applicant: _____

I, Dr _____ after careful personal examination of the case hereby certify that _____ on restoration of his/her health is now fit to resume service from _____.

Place:

Date and Time:

Signature

Name of Doctor _____

Designation _____

07. Fitness Certificate for Employment

Recent Passport size photo

We hereby certify that, we have examined Shri/Smt. _____ a candidate for employment in the _____ Department and cannot discover that he/she has any disease, constitutional weakness or bodily infirmity except _____ _____ _____.

Fit:

*He / She is Temp. Unfit:

Unfit:

We do not consider this is a disqualification for employment in the Office of _____ _____. His / Her age is according to his/her own statement _____ years and by appearance about _____ years.

Identification Marks:

1. _____ _____

2. _____ _____

Signature/Thumb impression of the Candidate

Place: _____

Date: _____

Member	Member	Chairman
Medical Board	Medical Board	Medical Board

08. Examination \ Certificate of the injured (Injury Report)

1. Medico-legal injury cases should be examined without delay after adopting the lifesaving procedure.
2. Valid consent for examination must be obtained from the injured or the competent authority.
3. All observation should be entered at once in the accident register with appropriate sketches and diagrams. Injury should be photographed whenever possible.
4. Relevant information should always be entered in injury certificate or report and be prepared in duplicate.
5. Whenever there is apprehension of death of the injured person *or* he is likely to die from the effect of the injury, arrangement should be made for recording dying declaration.

Definitions:

Injury: Legal definition as per sec. 44 IPC.

Hurt: Legal definition as per sec. 319 IPC.

Simple injury:

Grievous hurt: Legal definition as per sec. 320 IPC.

Examination / Certification of Injured. [Injury Report]

To,
The Investigating Officer,
_____ Police Station _____

Subject: Submission of report of examination of injured person
Reference: Your letter No. _____ Dated _____

Sir,

I am forwarding herewith the report of examination of:

Name of Injured: _____ Son/Wife/Daughter/Widow of _____
Surname _____ resident of _____
Brought by PC _____NO._____P.S. _____

Consent:

(*This consent is explained to patient in* _____*language*). Signature/LTI
Examined in presence of- (Subject/Guardian)
Signature/Thumb impression-
Identification marks: 1. _____
2. _____

History: History narrated by_____

Sr. No.	Nature of injury	Size in cms	Situation over the body	Type of injury	Possible/ Kind of weapon	Age of injury	Remarks / Investigation done, *if any*

Opinion:

Place:
Date and Time:

Signature
Name of Doctor _____
Designation _____

To,
The Investigating Officer,
_____ Police Station _____

Subject: Submission of report of examination of injured person
Reference: Your letter No. _____ Dated _____

Sir,

I am forwarding herewith the report of examination of:

Name of Injured: _____ Son/Wife/Daughter/Widow of _____
Surname _____ resident of _____
Brought by PC _____NO._____P.S. _____

Consent:

(*This consent is explained to patient in* _____*language*). Signature/LTI
Examined in presence of- (Subject/Guardian)
Signature/Thumb impression-
Identification marks: 1. _____
2. _____

History: History narrated by_____

Sr. No.	Nature of injury	Size in cms	Situation over the body	Type of injury	Possible/ Kind of weapon	Age of injury	Remarks / Investigation done, *if any*

Opinion:

Place:
Date and Time:

Signature
Name of Doctor _____
Designation _____

To,
The Investigating Officer,
_____ Police Station _____

Subject: Submission of report of examination of injured person
Reference: Your letter No. _____ Dated _____

Sir,

I am forwarding herewith the report of examination of:

Name of Injured: _____ Son/Wife/Daughter/Widow of _____
Surname _____ resident of _____
Brought by PC _____NO._____P.S. _____

Consent:

(*This consent is explained to patient in* _____*language*). Signature/LTI
Examined in presence of- (Subject/Guardian)
Signature/Thumb impression-
Identification marks: 1. _____
2. _____

History: History narrated by_____

Sr. No.	Nature of injury	Size in cms	Situation over the body	Type of injury	Possible/ Kind of weapon	Age of injury	Remarks / Investigation done, *if any*

Opinion:

Place:
Date and Time:

Signature
Name of Doctor _____
Designation _____

To,
The Investigating Officer,
_____ Police Station _____

Subject: Submission of report of examination of injured person
Reference: Your letter No. _____ Dated _____

Sir,

I am forwarding herewith the report of examination of:

Name of Injured: _____ Son/Wife/Daughter/Widow of _____
Surname _____ resident of _____
Brought by PC _____NO._____P.S. _____

Consent:

(*This consent is explained to patient in* _____*language*). Signature/LTI
Examined in presence of- (Subject/Guardian)
Signature/Thumb impression-
Identification marks: 1. _____
2. _____

History: History narrated by_____

Sr. No.	Nature of injury	Size in cms	Situation over the body	Type of injury	Possible/ Kind of weapon	Age of injury	Remarks / Investigation done, *if any*

Opinion:

Place:
Date and Time:

Signature
Name of Doctor _____
Designation _____

To,
The Investigating Officer,
_____ Police Station _____

Subject: Submission of report of examination of injured person
Reference: Your letter No. _____ Dated _____

Sir,

I am forwarding herewith the report of examination of:

Name of Injured: _____ Son/Wife/Daughter/Widow of _____
Surname _____ resident of _____
Brought by PC _____NO._____P.S. _____

Consent:

(*This consent is explained to patient in* _____*language*). Signature/LTI
Examined in presence of- (Subject/Guardian)
Signature/Thumb impression-
Identification marks: 1. _____
2. _____

History: History narrated by_____

Sr. No.	Nature of injury	Size in cms	Situation over the body	Type of injury	Possible/ Kind of weapon	Age of injury	Remarks / Investigation done, *if any*

Opinion:

Place:
Date and Time:

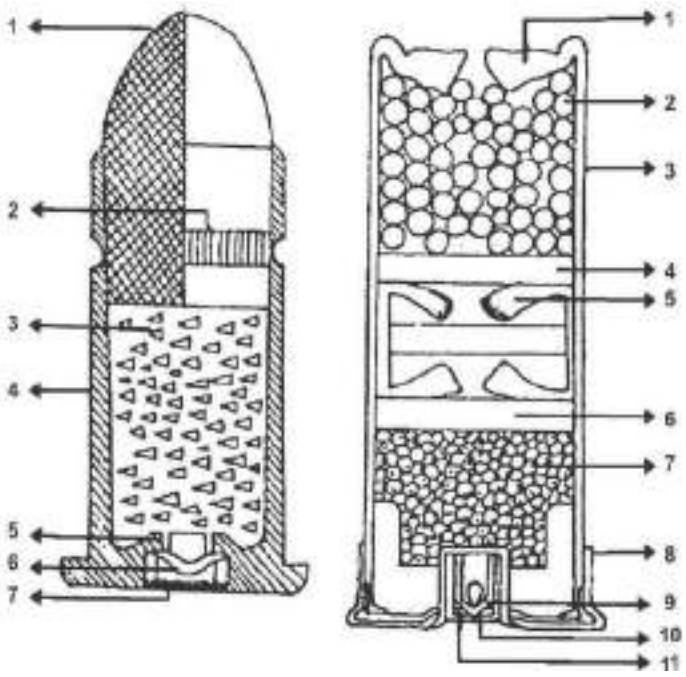
Signature
Name of Doctor _____
Designation _____

09. Examination of Weapon

Definition:

Dangerous Weapon as per sec 324 & 326 IPC.:

Label various parts of ammunition of fire arm.



Draw & label Weapon	Describe Weapon
	Kind of Weapon- Type of Weapon- Injuries Possible-
	Kind of Weapon- Type of Weapon- Injuries Possible-
	Kind of Weapon- Type of Weapon- Injuries Possible-
	Kind of Weapon- Type of Weapon- Injuries Possible-

Draw & label Weapon	Describe Weapon
	Kind of Weapon- **Type of Weapon-** **Injuries Possible-**
	Kind of Weapon- **Type of Weapon-** **Injuries Possible-**
	Kind of Weapon- **Type of Weapon-** **Injuries Possible-**
	Kind of Weapon- **Type of Weapon-** **Injuries Possible-**

Draw & label Weapon	Describe Weapon
	Kind of Weapon- Type of Weapon- Injuries Possible-
	Kind of Weapon- Type of Weapon- Injuries Possible-
	Kind of Weapon- Type of Weapon- Injuries Possible-
	Kind of Weapon- Type of Weapon- Injuries Possible-

1) Examination of the Weapon in Cases of Injuries (Sharp Edge Weapon)

To,
The Investigating Officer

_____Police Station _____

Sub: Submission of report of examination of weapon in connection with _____
_____

Reference:
1) Your letter No._____ Dated _____ with sealed packed weapon.

2) Injury Report / MLPM No.: _____ issued by _____Date: _____

Sir,

With reference to the above letter, I am sending the report about the weapon sent in sealed condition in connection with the injuries of _____

Name of weapon _____

Kind of weapon _____

Type of weapon _____

Description of the weapon:

Weight of weapon: _____(gm)

Total length of weapon: _____(cms)

Blade: is of _____, Texture: _____

Length: _____, Breadth: _____, Thickness: _____

Edges / Margins: _____ Point: _____

Stains / Foreign body if any: _____

Joint: Type: _____, Hilt: Size: _____

Handle: is of, _____ Texture: _____

Length: _____ , Breadth/ Maximum Circumference: _____

Stains / Foreign body if any: _____

Opinion:

Injuries possible by above weapon:

Identification marks if any on the weapon.
(*Put the signature on the weapon*)

The weapon was packed, sealed and handed over to _____of police station_____ for forwarding to FSL for chemical analysis.

Place: _____ Signature
Date & Time: _____ (Impression of seal) Name of Doctor _____
Receipt of weapon and report Designation _____

2) Examination of the Weapon in Cases of Injuries (Hard & Blunt weapon)

To,
The Investigating Officer

_____Police Station _____

Sub: Submission of report of examination of weapon in connection with _____

_____

Reference:

1) Your letter No._____ Dated _____ with sealed packed weapon.

2) Injury Report / MLPM No.: _____ issued by _____Date: _____

Sir,

With reference to the above letter, I am sending the report about the weapon sent in sealed condition in connection with the injuries of _____

Name of weapon: _____

Kind of weapon: _____

Type of weapon: _____

Description of the weapon:

Weight of weapon: _____(gm)

Length: _____Breadth / Maximum circumference: _____

Thickness: _____

Surface: _____

Texture: _____

Stains / Foreign body if any: _____

Opinion:

Injuries possible by above weapon:

Identification marks if any on the weapon.

(*Put the signature on the weapon*)

The weapon was packed, sealed and handed over to _____of police station_____ for forwarding to FSL for chemical analysis.

Place: _____ Signature

Date & Time: _____ (Impression of seal) Name of Doctor _____

Receipt of weapon and report Designation _____

10. Medico-legal Examination of Survivors / Victims of Sexual Violence

Definition of Rape:

CONFIDENTIAL

Medico-legal Examination Report of Sexual Violence

1. Name of the Hospital _____ OPD No. _____ Inpatient No. _____
2. Name _____ D/o or S/o (where known) _____
3. Address _____
4. Age (as reported) _____ Date of Birth (if known) _____
5. Sex (M/F/Others) _____
6. Date and Time of arrival in the hospital _____
7. Date and Time of commencement of examination _____
8. Brought by_____ (Name & signatures)
9. MLC No. _____Police Station_____
10. Whether conscious, oriented in time and place and person _____
11. Any physical/intellectual/psychosocial disability _____

(Interpreters or special educators will be needed where the survivor has special needs such as hearing/speech disability, language barriers, intellectual or psychosocial disability.)

12. Informed Consent/refusal

I_____D/o or S/o _____

hereby give my consent for:

a) Medical examination for treatment Yes/No

b) This medico-legal examination Yes/No

c) Sample collection for clinical & forensic examination Yes/No

I also understand that as per law the hospital is required to inform police and this has been explained to me. I want the information to be revealed to the police Yes/No

I have understood the purpose and the procedure of the examination including the risk and benefit, explained to me by the examining doctor. My right to refuse the examination at any stage and the consequence of such refusal, including that my medical treatment will not be affected by my refusal, has also been explained and may be recorded. Contents of the above have been explained to me in_____ language with the help of a special educator/interpreter/support person (circle as appropriate) _____.

If special educator/interpreter/support person has helped, then his/her name and signature_____

Name & signature/thumb impression of Witness

_____

_____

With Date, time and place

Name & signature of survivor or parent/Guardian/person in whom the child reposes trust in case of child (<12 yrs)

_____

_____

With Date, time and place

13. Marks of identification (Any scar/mole):

(1) _____

_____

(2) _____

_____

Left Thumb impression

14. Relevant Medical/Surgical history

Onset of menarche (in case of girls) – Yes/No Age of onset ______________________________
Menstrual history – Cycle length and duration ______________Last menstrual period____________
Menstruation at the time of incident -Yes/No, Menstruation at the time of examination - Yes/ No
Was the survivor pregnant at time of incident - Yes/No, If yes duration of pregnancy _______ weeks
Contraception use: Yes/No_____________ If yes – method used:_____________________________
Vaccination status – Tetanus (vaccinated/not vaccinated), Hepatitis B (vaccinated/not vaccinated)

15A. History of Sexual Violence

(i)Date of incidents being reported (ii)Time of incidents/s (iii)Location/s
(iv)Estimated duration: 1-7 days______ 1 week to 2 months ___________2-6 months __________ >6 months________________________ Episode: One ___________________________________ Multiple _________________________Chronic (>6 months) _____________________________ Unknown ____
(v) Number of assailants and name/s ____ (vi)Sex of Assailant(s) _______________ Approx. Age of assailant (s) _____________________ If known to the survivor- relationship with the survivor __________________________________
(vii) Description of incident in the words of the narrator: narrator of the incident: Survivor/informant(specify name and relation to survivor)________________________________ If this space is insufficient use extra page.

15B. Type of physical violence used if any (Describe):

Hit with (Hand, fist, blunt object, sharp object)	Burned with
Biting	Kicking
Pinching	Pulling hair
Violent shaking	Banging head
Dragging	Any other

15C.

i. Emotional abuse or violence if any (insulting, cursing, belittling, terrorizing) _____
ii. Use of restraints if any _____
iii. Used or threatened the use of weapon(s) or objects if any_____
iv. Verbal threats (for example, threats of killing or hurting survivor or any other person in whom the survivor is interested; use of photographs for blackmailing, etc.) if any: _____
_____
v. Luring (sweets, chocolates, money, job) if any _____
vi. Any other: _____

15D.

i. Any H/O drug/alcohol intoxication: _____
ii. Whether sleeping or unconscious at the time of incident: _____

15E. If survivor has left any marks of injury on assailant/s, enter details: _____

15F. Details regarding sexual violence:

Was penetration by penis, fingers or object or other body parts (Write Y=Yes, N=No, DNK=Don't know) Mention and describe body part/s and/or object/s used for penetration.

	Penetration			Emission of semen		
Orifice of victim	By penis	By body part of self or assailant or third-party finger, tongue or any other)	By object	Yes	No	Don't know
Genitalia (vagina and/ or urethra)						
Anus						
Mouth						

Oral sex performed by assailant on survivor	Y	N	DNK
Forced masturbation of self by survivor	Y	N	DNK
Masturbation of assailant by survivor, forced manipulation of genitals of assailant by survivor	Y	N	DNK
Exhibitionism (perpetrator displaying genitals)	Y	N	DNK
Did ejaculation occur outside body orifice (Vagina/anus/mouth/urethra)?	Y	N	DNK
If yes, describe where on body			
Kissing, licking or sucking any part of survivor's body	Y	N	If yes, describe
Touching/ fondling	Y	N	If yes, describe
Condom used*	Y	N	DNK
If yes, status of condom	Y	N	DNK
Lubricant used*	Y	N	DNK
If yes, describe kind of lubricant used			
If object used, describe object:			
Any other form of sexual violence			

*Explain what condom and lubricant is to the survivor

Post incident has the survivor	Yes/No/Do not know	Remarks
Changed clothes		
Changed undergarments		
Cleaned/washed clothes		
Cleaned/washed clothes undergarments		
Bathed		
Douched		
Passed urine		
Passed stools		
Rinsing of mouth/brushing/vomiting (circle any or all as appropriate)		

Time since incident _____
H/o vaginal/anal/oral bleeding/discharge prior to the incident of sexual violence _____
H/o vaginal/anal/oral bleeding/discharge since the incident of sexual violence _____
H/o painful urination/ painful defecation/ fissures/ abdominal pain/pain in genitals or any other part since the incident of sexual violence _____

_____

_____

16. General Physical Examination-

i. Is this the first examination _____

ii. Pulse _____ BP _____

iii. Temp _____Resp. Rate _____

iv. Pupils _____

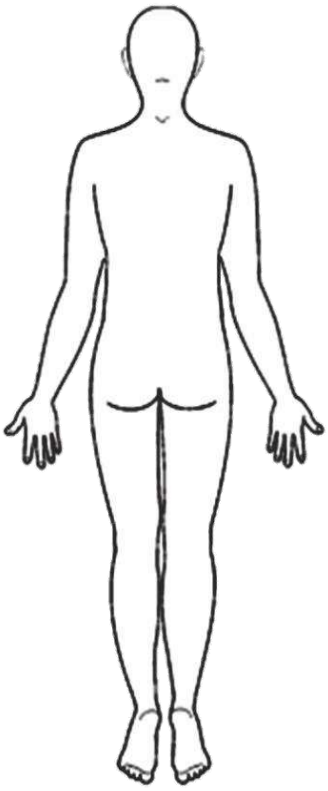
v. Any observation in terms of general physical wellbeing of the survivor _____

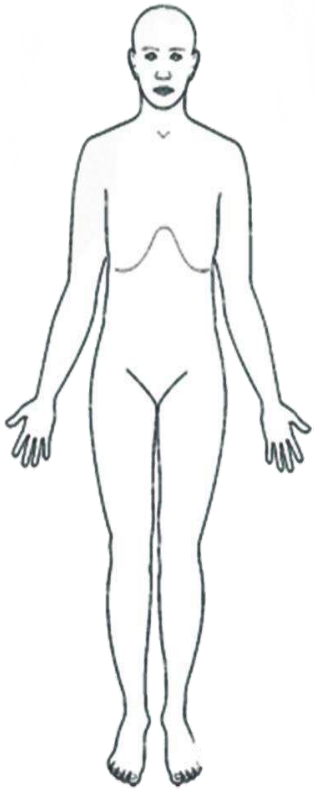
17. Examination for injuries on the body if any

The pattern of injuries sustained during an incident of sexual violence may show considerable variation. This may range from complete absence of injuries (more frequently) to grievous injuries (very rare).

(Look for bruises, physical torture injuries, nail abrasions, teeth bite marks, cuts, lacerations, fracture, tenderness, any other injury, boils, lesions, discharge specially on the scalp, face, neck, shoulders, breast, wrists, forearms, medial aspect of upper arms, thighs and buttocks) Note the Injury type, site, size, shape, colour, swelling signs of healing simple/grievous, dimensions.)

Scalp examination for areas of tenderness, if hair pulled out/ dragged by hair)	
Facial bone injury: Orbital blackening, tenderness	
Petechial haemorrhages in eyes and other places	
Lips and Buccal mucosa/ gums	
Behind the ears	
Ear drum	
Neck, Shoulders and Breast	
Upper limb	
Inner aspect of upper arms	
Inner aspect of thighs	
Lower limb	
Buttocks	
Other, please specify	





18. Local examination of genital parts/other orifices*

A. External genitalia: record finding and state NA where not applicable.

Body parts to be examined	Findings
Urethral meatus and vestibule	
Labia majora	
Labia minora	
Fourchette and introitus	
Hymen	
Perineum	
External urethral meatus	
Penis	
Scrotum	
Testes	
Clitoropenis	
Labioscrotum	
Any other	

B. Per Vaginum /Per Speculum examination should not be done unless required for detection of injuries or for medical treatment.

P/S findings if performed _____

P/V findings if performed _____

Record reasons if P/V of P/S examination performed_____

C. Anus and Rectum (encircle the relevant)
Bleeding/tear/discharge/oedema/tenderness

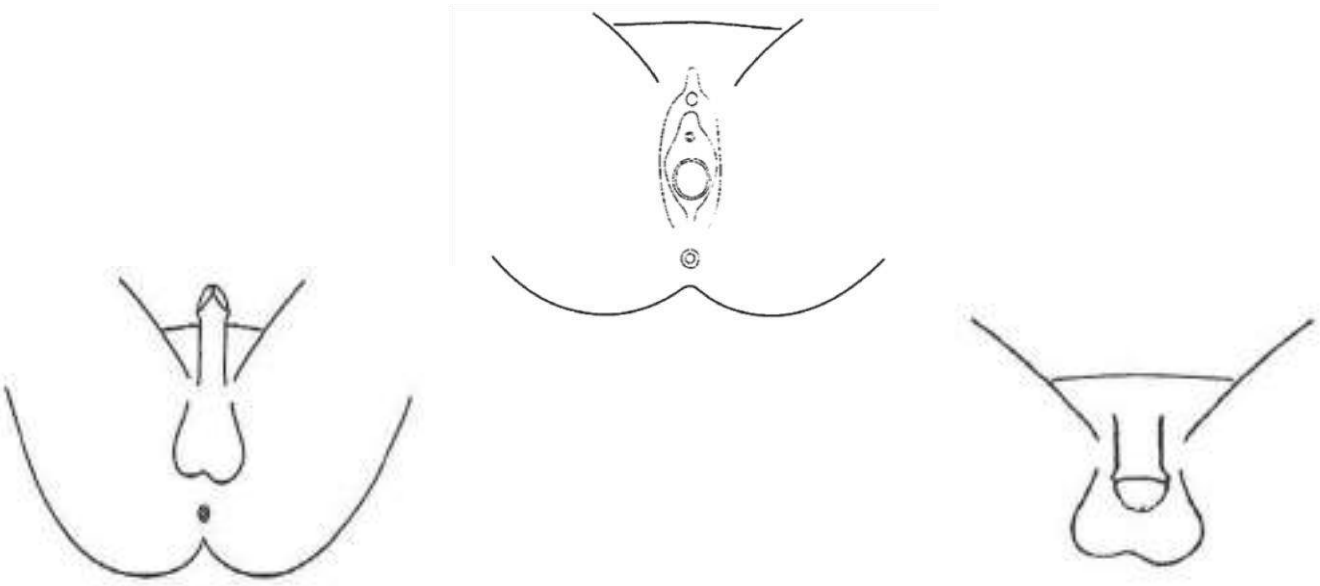
_____

_____

D. Oral Cavity - (encircle the relevant)
Bleeding/ discharge/ tear/oedema/ tenderness

_____

_____



19. Systemic examination:

1) Central Nervous System: _____

2) Cardio Vascular System: _____

3) Respiratory System: _____

4) Chest: _____

5) Abdomen: _____

20. Sample collected/ Investigations for hospital laboratory/ clinical laboratory:

1. Blood for HIV, VDRL, HbsAg _____

2. Urine test for pregnancy _____

3. Ultrasound for pregnancy/ internal injury _____

4. X-ray for injury _____

21. samples collection for central /state forensic laboratory.

1. Debris collection paper _____

2. Clothing evidence where available-(to be packed in separate paper bags after air drying)

List of Details of clothing worn by the survivor at time of incident of sexual violence

3. Body evidence samples as appropriate (duly labelled and packed separately)

	Collected/ Not collected	Reason for not collecting
Swabs from stains on the body (Blood, semen, foreign material, others)		
Scalp hairs (10-15 strands)		
Head hair combing		
Nail scrapings (Both hands separately)		
Nail clippings (Both hands separately)		
Oral swab		
Blood for grouping, testing drug/ alcohol intoxication (plain vial)		
Blood for alcohol levels (Sodium fluoride vial)		
Blood for DNA analysis (EDTA vial)		
Urine (drug testing)		
Any other (tampon/sanitary napkin/condom/object)		

4. Genital and anal evidence (each sample to be packed, sealed and labelled separately to be placed in bag).
***** swab sticks for collecting samples should be moistened with distilled water provided.

	Collected / Not collected	Reason for not collecting
Matted pubic hair		
Pubic hair combing (mention if shaved)		
Cutting of pubic hair (mention if shaved)		
Two vulval swabs (for semen examination and DNA testing)		
Two vaginal swabs (for semen examination and DNA testing)		
Two anal swabs (for semen examination and DNA testing)		
Vaginal smear (air-dried) for semen examination		
Vaginal washing		
Urethral swab		
Swab from glans penis/ clitoropenis		

*samples to be preserved as directed till handed over to police along with duly attested sample seal.

22. Provisional medical opinion:

I have examined (survivor) _____ M/F/other _____aged _____ reporting (type pf sexual violence and circumstances) _____ days/hours after incident, after having (bathed/douched) _____ my findings are as follows:

*samples collected (for FSL) awaiting reports _____

*samples collected (for hospital laboratory) _____

*clinical findings _____

*Additional observations (if any) _____

23. Treatment prescribed:

Treatment	Yes	No	Type and comments
STI prevention treatment			
Emergency contraception			
Wound treatment			
Tetanus prophylaxis			
Hepatitis B vaccination			
Post exposure prophylaxis for HIV			
Counselling			
Other			

24. Date and time of completion of examination _____

This report contains _____number of sheets and _____number of envelopes.

Place: _____ Signature of examining doctor/s_____

Date: _____ Name of examining doctor/s_____

Seal

25. **Final opinion**: (*After receiving lab reports)*

Findings in support of the above opinion, taking into account the history, clinical examination findings and laboratory reports of _____ bearing above identification marks described above _____ hours/days after the incident of sexual violence, I am opinion that: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Place: _____ Signature of examining doctor/s_____

Date: _____ Name of examining doctor/s_____

Seal

***copy of the entire report must be given to the survivor/ victim free of cost immediately.**

11. Examination of Accused of Sexual Violence

Name of Hospital:_ _____

OPD/ IPD No: _____ MLC No : _____ Date : _____

1. **Case Particulars:**
   Requisition from _____vide letter No. _____ Dated _____
   brought and identified by _____
2. **Particulars of the alleged accused:**
   i. Name: _____ S/o _____
   ii. Address: _____
   iii. Age as stated _____ iv. Occupation _____
   v. Married/Single/Divorcee _____ vi. Religion: _____
   vii. Marks of Identification:
   (a) _____(b) _____
   viii. Examined in presence of (name with signature) _____
3. **Consent given in writing**

I _____ _____ hereby voluntarily consent and agree to following
(Mark each that applies)

a) Medical examination and examination of genitals, examination of other secondary sexual characters and examination of other body parts.
b) Collection of samples for medical and Forensic examination and treatment.

All this has been explained to me in the manner and language, which I can understand

Left Thumb impression Signature of accused/ Guardian

Note: Age estimation is mandatory if the alleged accused is minor

4. **Brief History:**
   i. As given by police: _____
   _____
   _____
   ii. As given by alleged accused:

a. If he admits or denies the incidence(Account of incidence as per his statement)
b. Did he know the victim before? _____
c. Date and time of incidence: _____
d. Any history of S.T.D : YES / NO _____
e. Did he take bath, wash etc. after the alleged incidence? : YES / NO _____
f. Has he changed clothes after the incidence? : YES / NO _____
g. Condom used while sexual intercourse: YES / NO _____
h. Frequency and number of sexual intercourse: _____
i. Brief description of acts of penetration/ejaculation: _____
j. History of alcohol/other drug abuse: _____
k. Allergies: _____ Current medication: _____
l. Any Relevant Surgical history: _____
m. Any other: _____

5. Physical examination:

Clothing: If same was worn during the incidence look for presence of blood stains, semen, vaginal stain, female pubis hair, mud, grass, lipstick, any tear etc. and describe

_____

_____

_____

6. General examination:

Height: _____ Weight: _____ Body Built: _____

Blood Pressure: _____ Pulse: _____ RR: _____

Axillary hair: _____

Beard & Moustaches: _____

Pubic hair (including tanner staging) _____

Dentition: (8/8) _____

7. Systemic Examination

CNS : (Mental status) _____

CVS: _____ RS: _____

8 Marks of violence if any (Tick mark if present and describe):

Bite marks: _____

Abrasions: _____

Contusions: _____

Any other: _____

9. Genital Examination:

a. (Indicate as Y = Yes, N = No)

Observation	Pubic region	Thigh and adjoining part
Matted hair		
Seminal stain		
Blood		
Loose foreign hair		

b. Penis:

Observations	**Remark**
Development (Tanner Stage)	
Any defect/ Deformity	
Whether foreskin can be freely rolled up or is circumcised	
Evidence of any disease e.g. STD	
Presence of smegma under the foreskin	
Hair under prepuce	
Any stains nearby	

Injuries over Genital:

Prepuce: _____

Glans penis: _____

Frenulum: _____

Scrotum: _____

Any other: _____

10. Sample collection for Hospital/Clinical Laboratory

Sr No	Sample Name	Test For	Preservative/ Packing collected?	Yes/No
1.	Urethral Swab	Microscopy& Culture	Plain Sterile Bulb	
2.	Swab from discharge	Microscopy& Culture	Plain Sterile Bulb	
3.	Blood	Serology (For STD and Hep. B)	Plain Sterile Bulb	
4.	Urine (midstream)	Microscopy& Culture	Plain Sterile Bulb	

Note: *Every forensic examination room should have adjacent laboratory for detection of sperms and vaginal epithelium (Lugol's iodine test).*

11. Collection of Samples for Forensic Analysis:

a) Clothing, where available (Each garment to be wrapped separately and packed in paper bags after air drying) _____

_____

_____

b) **Sample collection for Forensic science laboratory:**

Sr No	Name of sample	Test (for evidence of)	Preservative / Packing	Collected YES/NO
1	Clothes (outer & inner)	For identification of any biological stains/ material from victim and scene of crime	Paper envelope	
2	Matted pubic hair	For detection of semen and identification of any hairs from victim	Paper envelope	
3	Combed pubic hairs	To identify foreign hairs by comparing with victim	Paper envelope	
4	Scalp hairs (10 to 15)	For comparison those found on victim and scene of crime	Paper envelope	
5	One swab & smear from prepuce, coronal sulcus	For detection of vaginal/buccal epithelial cells and DNA	Sterile tube & Paper envelope	
6	One swab & smear from glans and urethral meatus	For detection of vaginal/buccal epithelial cells and DNA	Sterile tube & Paper envelope	
7	Scrotal swab and smear	For detection of any biological stains	Sterile tube	
8	Swab and smear from stains on body	For detection of any biological stains	Sterile tube & Paper envelope	
9	Penile washing	For detection of vaginal/buccal epithelial cells and DNA	Sterile tube	
10	Buccal swab and smear	For detection of any biological stains and DNA	Paper envelope	
11	Nail clipping / scrapping	For detection of skin, blood, hair fiber of victim if human tissue blood group and DNA	Paper envelope	
12	Blood	Blood grouping	Plain bulb	
13	Blood	DNA analysis	EDTA bulb	
14	Blood	Drugs /alcohol	Fluoride and oxalate bulb	
15	Urine	Drugs /alcohol	Fluoride bulb	
16	Other object if any swab and smear	For detection of vaginal/buccal epithelial cells and DNA	Sterile tube & Paper envelope	

Note: Samples must be collected as per time elapsed between assault and examination, history received from alleged accused and clinical examination.

12. Provisional opinion:

I have examined _____ Sex _____

Aged _____ reporting on dated _____, _____ days/hours after the incidence.

My findings are as follows:

- Samples collected (for FSL): _____
- Samples collected (for hospital laboratory): _____
- Significant clinical findings: _____
- Additional observations (*if any*): _____

"The Opinion is kept pending awaiting the above laboratory reports**".**

(This report contains _____ number of sheets and _____number of envelopes.)

Place: _____ Signature of examining doctor_____

Name of examining doctor_____

Seal

13. Final Opinion *(After receiving Lab reports)*

Taking into consideration the history of the case, the data on clinical examination and the report of FSL (all being considered together) and other investigations

A. 1. Penetrative sexual assault i.e., of vaginal/ anal/ urethral/ oral penetration by the male sex organ. (*when presence of genital & physical injuries & the subject's penile washings show vaginal / buccal epithelium or faecal matter*)

2. Sexual assault by objects other than genitals (*when presence of physical injuries & the object shows presence of vaginal /buccal epithelium or faecal matter*)

3. No sexual and penetrative assault.

B. Intoxications (*Lab report positive for drugs/alcohol)*

C. Injuries suggestive of sexual assault (*when presence of genital & physical injuries over body & the subject's penile washings are negative for vaginal/buccal epithelium or faecal matter)*

D. Any other comments: _____

_____

Place: _____ Signature of examining doctor/s_____

Date & Time: _____ Name of examining doctor/s _____

Seal

12. Potency Certificate

Name of the Hospital: _____ MRD No: _____

Name of Person: _____

Age: _____ yrs, Sex: _____, Marital Status: _____

Address: _____

Brought By: _____

MLC No: _____ (*If Applicable*)

Consent: _____

_____

_____

(*This consent is explained to patient in* _____*language*)

Signature/Thumb impression

Identification Mark:

1. _____

2. _____

3. Left Thumb Impression 

History:

1. Present History: _____

   _____

2. Past History: _____

   _____

3. Sexual History: _____

   _____

   _____

Examination:

1. **General Examination**:

   i) Height: _____

   ii) Weight: _____

   iii) Physical Development: _____

   iv) Secondary Sexual Characters: _____

   v) Any Disease / Deformity: _____

   vi) Examination of spine: _____

Systemic Examination

i) C.V.S.: _____

ii) R.S.: _____

iii) G.I.T.: _____

iv) C.N.S. _____

2. Local Examination:

i) Penis: _____

Development: _____

Sensation over glans: _____

Disease / Deformity: _____

Injury: _____

Any other: _____

ii) Scrotum: _____

Testis: _____

Descended / Undescended: _____

Disease / Deformity: _____

iii) Epididymis / Spermatic Cord: _____

3. Psychological Examination

_____

_____

_____

4. Laboratory Test:

1.

2.

3.

4.

5.

Opinion: _____

_____

_____

_____

Date: -
Place: -

Seal

Signature
Name of Doctor _____
Designation _____

13. Examination of Alcoholic Person (Drunkenness)

AIM:

a) To decide whether the subject is under the influence of alcohol, and if so to what extent.
b) To decide whether his condition is due to illness or injury;
c) To decide whether it is safe for him to be detained in a police station or to decide whether he is to be admitted to a hospital.
   A doctor should attend the case as soon as possible without any delay.

DEFINATION:

Drunkenness: 'It is a condition produced in a person who has taken alcohol in a quantity sufficient to cause him to lose control of his faculties to such an extent, that he is unable to execute safely, the occupation in which he is engaged at the particular time.'

Use of alcohol in human population –

Laboratory investigations –

Clinical Interpretation

a). The individual examined has not consumed alcohol.
No smell of alcohol in breath and / or lab analysis is negative, clinical examination normal.

b) The individual examined has consumed alcohol but not under influence of it.
Smell of alcohol in breath present and / or lab. Analysis reveals the presence of alcohol, but clinical examination reveals normal findings.

c) The individual examined has consumed alcohol and is under influence of it.
Smell of alcohol in breath present and / or lab. Analysis reveals the presence of alcohol, and clinical examination reveals *abnormal* findings (definite signs of muscular in co-ordination, dilated pupils with sluggish reaction to light, fine lateral nystagmus, slurred in-coherent speech, staggering gait, delayed reaction time, etc).

Under the influence (100 -200mg%) – flushed face, dilated sluggish pupil, euphoria, loss of restrain, increased reaction time, test errors, stagger on sudden turning.

Drunk (200-300mg%) - flushed face, dilated sluggish inactive pupils, clouding of intellect, incoordination of thoughts, speech and action, staggering gate with reeling and lurching while making sudden turn.

Very drunk – flushed or pale face, pupils inactive contracted or dilated, mental confusion, marked incoordination of thoughts, speech and action, staggering and reeling gate with tendency to lurch and fall, vomiting, amnesia.

Differential Diagnosis of Alcohol Intoxication

Head injury. Cerebral tumour, Incipient C.V.A., Epilepsy, Disseminated sclerosis. Acute aural vertigo. Hypoglycaemia, Hyperglycaemia, Thyrotoxicosis, Delirium. Uraemia, Hepatic failure. Fatigue, Carbon monoxide poisoning, Hypomania, Psychosis, Hysteria and, Drugs esp. *Insulin, Barbiturates, Antihistamines, Narcotics, Sedatives, Antidepressants.*

Medico-Legal Aspects of Drunkenness

Drunkenness and criminal responsibility –

- **Sec 85 IPC** – act of a person incapable of judgment of reason of intoxication caused against his will.
- **Sec 86 IPC** – offence requiring a particular intent or knowledge, committed by one who is intoxicated.

Drunkenness and consent –

- **Sec 90 IPC** – the consent given by an insane or intoxicated person who is unable to understand the nature and consequences of that to which he gives his consent is invalid.

Drunkenness and driving –

- **Sec 185 of Motor Vehicle Act** (1988, Amend. 1994) – 30 mg%
- **Sec 279 IPC** – Rash driving on a public way
- **Sec 287 IPC** – Negligent conduct with respect to machines.

Drunkenness and disturbance of the peace –

- **Sec 510** – Misconduct in by drunken person

Medico-legal examination

- **Sec 53 & 54 Cr.P.C**
  Bombay High court ruling – collection of samples does not violate constitutional right to privacy

Examination of Alcoholic Person (Drunkenness)

Date:

To,

The Investigating officer,

_____Police station_____

Subject: Regarding examination of person with alleged history of intoxication.

Reference: Your letter No _____Dated _____Police Station_____

Date and Exact time of examination:

Name of Person examined_____, Age_____ (in years)

Address: _____Occupation: _____

Consent: (Informed consent) _____

_____

_____

(*This consent is explained to patient in* _____*language*)

Signature / Thumb impression
(Subject/Guardian)

Examined in presence of-
Signature/Thumb impression-

Identification marks: (At least two unique identification marks)

i) _____

ii) _____

iii) Left Thumb Impression 

History:

As stated by person examined_____

a. Has he consumed alcohol? If so, note the time, nature & quantity of the drink? _____

b. What food and drink he took last and when? _____

c. H/o fits, illness or other disability? _____

d. Is he Chronic alcoholic? Frequency of alcohol intake? _____

e. History of any medication? Nature & dose? _____

f . H/o Diabetes? Time of insulin taken & dose taken? _____

General appearance and demeanor:

a. State of clothing- Decent, disarrayed, soiled

b. Disposition- Calm, talkative, abusive, obscene

c. Speech- Incoherent/ slurred/clear

d. Gait- Steady/ staggering, self-control

General examination-

1) B.P.: _____ _____

2) Pulse (rapid & bounding, slow, etc.): _____

3) Temperature (surface temp. raised, lowered, normal): _____

4) Skin (dry, moist, flushed or pale): _____

5) Mouth (smell of alcohol, dribbling of saliva, _____
furred tongue, dry lips, etc.): _____

6) Eyes (lids swollen or red, conjunctivae congested or _____
not, visual acuity, pupils dilated or contracted, _____
nystagmus (+/-) & reaction of pupil to light & accommodation): _____

7) Gait:

(a) Manner of walking (unsteady/ steady). _____

(b) Reaction time to a direction to turn. _____

(c) Manner of turning (normal/ staggering). _____

8. Muscular coordination: _____

(Perform any of the test enumerated below

a. Walking along a straight line, b. Finger nose test _____

c. Picking up a coin from the floor, d. Romberg's sign/test _____

e. Handwriting, f. Copying simple geometric figures) _____

Examination of System (to exclude any other condition)

a. Central Nervous system _____

b. Cardiovascular system _____

c. Respiratory System_____

d. Abdomen _____

Examination of bodily Injuries (If any): _____

_____

_____

Laboratory investigation:

Blood / Urine for chemical examination: _____

_____

_____

Any other: _____

_____

Diagnosis: _____

_____

Opinion: I am of opinion that the above person has:

(1) Consumed alcohol and is under its influence.

(2) Consumed alcohol, but is not under its influence.

(3) Not consumed alcohol.

Place: Signature of Doctor:

Date: Name:

Designation:

Chapter—XIII—Blood Test

{136} THE BOMBAY PROHIBITION (MEDICAL EXAMINATION AND BLOOD TEST) RULES, 1959

"Registered Medical Practitioner" means any registered medical practitioner authorised by general or special order by the State Government under sub-section (4) of section 129-A of the Act;

"Testing Officer" means the Chemical Examiner or assistant Chemical examiner to government or any other officer appointed by the State Government for testing blood under sub-section (1) of section 129-A of the Act.

Medical examination.—A registered medical practitioner before whom a person is produced under sub-section (1) of section 129-A of the Act by a Police Officer or a Prohibition Officer for the purpose of medical examination of such person or collection of his blood, shall examine such person and if he deems necessary, collect and forward in the manner prescribed in these Rules, the blood of such person and furnish to the officer by whom such person was produced a certificate in Form 'A' containing the result of his examination and shall keep a copy of such certificate on his record.

Manner of collection and forwarding of blood—

(1) The registered medical practitioner shall use a syringe for the collection of the blood of the person produced before him under rule 3 the syringe shall be sterilised by purring in boiling water before it is used for the aforesaid purpose. He shall clean with sterilized water and swab the skin surface of the part of such person's body from which he intends to withdraw the blood. No alcohol shall be touched at any stage while withdrawing blood from the body of the person. He shall withdraw not less than 5 c. c. of venous blood in the syringe from the body of the person. The blood collected in the syringe shall then be transferred into a phial containing anti-coagulant and preservative and the phial shall then be shaken vigorously to dissolve the anti-coagulant and preservative in the blood. The phial shall be labelled and its cap sealed by means of sealing wax with the official seal or the monogram of the registered medical practitioner.

(2) The sample blood collected in the phial in the manner stated in sub-rule (1) shall be forward for test to the Testing Officer either by post or with a special messenger so as to reach him within seven days from the date of its collection. It shall be accompanied by a forwarding letter in form 'B' which shall bear a facsimile of the seal or monogram used for sealing the phial of the sample blood.

Certificate of test of sample blood. —The Testing Officer shall on receipt of the sample blood, test it and shall certify the result of his test in Form 'C.' The Testing Officer shall send the certificate in duplicate to the registered medical practitioner by whom the blood was forwarded to him for test and retain a copy thereof on his record. On receipt of the certificate from the Testing Officer, the registered medical practitioner shall forward the original copy of the certificate to the Police Officer or the Prohibition Officer concerned. The duplicate copy of the certificate shall be kept by him on his record.

FORM 'A'

(*See* rule 3)

Certificate by a registered medical practitioner showing whether a person examined by him has or has not consumed an intoxicant.

Serial No._____ (Name and location of the Dispensary or Hospital)

Certified that Shri/Smt./Kumari. _____

of _____ was brought to this hospital/dispensary by _____

_____ (*here state name and designation of the Officer*) on _____20___, at_____ A.M./P.M.

and was examined by me on _____20___, at_____ A.M./P.M

A clinical examination of the above-named person disclosed the following:

Age _____

Weight _____

Breath : Smelling / Not smelling
(Alcohol / ganja /bhang/ charas / opium)

Speech : Incoherent / Normal

Gait : Unsteady / Steady

Pupils : Dilated / Normal

Additional remarks, *if any*. : _____

I find that the above-named person has consumed alcohol/opium/ charas/ ganja/ bhang. / has not consumed any intoxicant.

I also find that he is / is not under the influence of alcohol.

N. B.—

(Blood from the body of the above named was / was not collected by me for chemical examination).

Dated: _____20___ (Signature) _____

Place: _____ Designation _____

Signature/Thumb-impression
of the person examined.

Marks of identification of the person examined in case he refuses to give his signature or thumb-impression.

FORM 'B'

[*See* rule 4 (2)]

No. _____

From

_____

(Name, designation and address of the registered medical practitioner.)

To,

_____

(Name, designation and address of the Testing Officer.)

Dated _____ 20

Sir,

I, forward herewith by post/with Shri* _____

of _____ a phial bearing serial No. _____

containing_____ c. c. of venous blood collected by me on_____

at. _____ A.M./P.M. of _____

who was produced before me for medical examination †and / or collection of blood from his / her body

‡ by _____

and request you to test the blood and issue a certificate (in duplicate) regarding the result of the test.

Yours faithfully,
Signature and designation of the
registered medical practitioner.

Facsimile of the seal or monogram used for
sealing the phial containing the blood.

---

* Here specify the name, designation and address of the messenger with whom the phial containing the blood is forwarded for delivery to the Testing Officer.

† Strike off, if these words are not required.

‡ Here state the name and designation of the officer by whom the said person was produced for collection of blood.

FORM 'C'

(*See* rule 5)

Alcohol Examination Certificate

No. R _____of _____

I. Case No. _____

Dated _____

From,

_____

(Here mention name, designation and address of testing officer.)

To,

(_____ ,

(Here mention the name, designation and address of Registered Medical Practitioner.)

Your letter No. _____Dated _____, forwarding a phial containing blood of Shri/Smt./Kumari. _____ of _____ bearing Serial No._____ labelled. _____ received here on _____ by post/with messenger Shri _____of _____ sealed/unsealed, seal perfect and as per copy sent/seals intact device no copy sent.

Result of the test of the blood

The blood contained _____ per cent. W/V of ethyl-alcohol.

Method, Factual Data and Reasons leading to the Result of Blood analysis

(1) *Method of Analysis*—Modified Cavette's Method Journal Analytical Chemistry, 1959, 31, 1908. It is based on oxidation of alcohol by chromic acid as that in Cavette's Method but the oxidation is carried out in vacuum and at room temperature. It takes only a fraction of a minute instead of a few hours to complete the reaction. Ketonic bodies are volatile acids do not interfere in this method. All usual precautions essential in microanalytical work mentioned in the paper referred to above have been strictly followed, *e.g.*, all chemical used in the test were of reagent quality the apparatus was first cleaned with hot chromic acid, then repeatedly with tap water and finally with distilled water. 2[It was then dried in hot air oven.] No grease was used anywhere in the apparatus. The atmosphere of the room where the test was caried out was free from all gases or suspended impurities. Fresh glass-distilled water used throughout the test.

(2) *Factual Data and Reasons for arriving at the findings pertaining to the blood sample in question*.-

Analysed on _____

Smell: Nothing to note/Has characteristic smell of _____

Quantity of blood taken for analysis : 0.5 ml.

Quantity of N/20 dichromate taken : 5.00 ml.

Quantity of N/20 dichromate used up in oxidising alcohol in the sample _____ ml.

1 ml. of N/20 dichromate oxidises 0.000575 gramme of ethyl-alcohol.

2[Therefore, 100 ml. of blood contained. 0.000575 x _____ ml. of dichromate used x 100 _____gramme of 0.50 ethyl-alcohol.]

Signature and Designation of testing officer

_____

Note.—(1) WV = _____ grammes of ethyl-alcohol in 100 c. c. of blood.

(2) The blood sample was stored in refrigerator from the time it was received in the laboratory till it was taken for analysis.

1. Subs. by G. N. of 26-9-1963.
2. Subs. by G. N. of 6-12-1963.

Format of Medico-Legal report of a person in Police, Judicial Custody or Referred by court of Law and Violation of Human rights as requirement of NMRC, who has been brought for Medical Examination.

14. Medico-Legal Examination of person at the time of entry into in Police / Judicial Custody and periodically thereafter

To, Date:

The Investigating Officer,

_____Police station, _____

Sub: - Submission of Medico-legal report of person in Police / Judicial Custody

Ref: - 1. Your Order / letter No._____ Dated_____

2. Case No._____

Sir,

I /We hereby certify that, I/We have examined Mr./Mrs. _____

S/O or D/O _____ Age (as Stated)_____ Sex_____

Residing at _____ as a person in police / Judicial custody

brought by PC/PN/HC_____ of _____ Police station.

Consent for Medical Examination:

_____

_____

(*This consent is explained to patient in _____language*)

Signature/Thumb impression
(Subject/Guardian)

Examined in presence of-
Signature/Thumb impression-

Date and time of admission in prison: _____

Identification Marks:

1. _____

2. _____

3 Left Thumb Impression

Previous history of illness: _____ **History of drug abuse,** if any? _____

Any information the prisoner may volunteer: _____

Physical Examination:

Hight_____ Weight_____ Pulse _____/sec BP_____/_____of Hg

RR_____/ min Temperature _____ LMP:_____

Pallor: _____ Clubbing: _____ Cyanosis: _____ Icterus: _____

CNS_____CVS_____

RS_____GIT_____

Eye/ENT_____ Urinary system_____

Investigations, if any clinically required:

Pathological tests: _____

X-ray Chest: _____

ECG: _____

Blood tests: _____

Bodily Injuries if any:

_____

_____

(Please see for all body areas & Prepare Separate Injury report of if any injury/injuries are present)

(If any history of previous mental illness/ finding of suicidal tendencies etc., psychiatrist's opinion to be sought)

(The medical examination and investigations were conducted with the consent of the prisoner after explaining to him/ her that it was necessary for diagnosis and treatment.)

The Medical examination done on Mr._____, By Me/Us bearing above mentioned identification marks does not show any disease, constitutional weakness or bodily infirmity except_____(NIL)

He / She is - Fit. / -Temporary Unfit. / - Unfit.

Time of commencement of medical examination:

Date of completion of medical examination:

Signature

Place: -

Name of Doctor _____

Seal: -

Designation _____

Part- II

Medico-legal Articles

Photographs

I. Post-mortem lividity

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

II. Decomposition changes-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

III. Decomposition changes-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

IV. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

V. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

VI. Injury

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

VII. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

VIII. Injury

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

IX. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

X. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XI. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XII. Injury and identification-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XIII. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XIV. Injury-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XV. Asphyxia-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XVI.

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

Asphyxia-

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XVII.

1. Identify the photograph- _____

_____

2. Observations- _____

_____

_____

3. Medicolegal Importance (MLI)- _____

_____

_____

XVIII.

1. Identify the photograph- _____

   _____

2. Observations- _____

   _____

   _____

3. Medicolegal Importance (MLI)- _____

   _____

   _____

XIX.

1. Identify the photograph- _____

   _____

2. Observations- _____

   _____

   _____

3. Medicolegal Importance (MLI)- _____

   _____

   _____

XX.

1. Identify the photograph- _____

   _____

2. Observations- _____

   _____

   _____

3. Medicolegal Importance (MLI)- _____

   _____

   _____

XXI.

1. Identify the photograph- _____

   _____

2. Observations- _____

   _____

   _____

3. Medicolegal Importance (MLI)- _____

   _____

   _____

XXII.

1. Identify the photograph- _____

   _____

2. Observations- _____

   _____

   _____

3. Medicolegal Importance (MLI)- _____

   _____

   _____

XXIII.

1. Identify the photograph- _____

   _____

2. Observations- _____

   _____

   _____

3. Medicolegal Importance (MLI)- _____

   _____

   _____

Museum Specimens

Sr. No.	Observation	Identification / Opinion	Medicolegal Importance
1			
2			
3			
4			
5			

Sr. No.	Observation	Identification / Opinion	Medicolegal Importance
6			
7			
8			
9			
10			

Sr. No.	Observation	Identification / Opinion	Medicolegal Importance
11			
12			
13			
14			
15			

Sr. No.	Observation	Identification / Opinion	Medicolegal Importance
16			
17			
18			
19			
20			

Instruments

Sr. No.	Identification	Medico-legal Significance / Uses
1		
2		
3		
4		
5		

Sr. No.	Identification	Medico-legal Significance / Uses
6		
7		
8		
9		
10		

Sr. No.	Identification	Medico-legal Significance / Uses
11		
12		
13		
14		
15		

Sr. No.	Identification	Medico-legal Significance / Uses
16		
17		
18		
19		
20		

X-Rays

1.

Describe X-Ray: _____
_____
_____
Observation: _____
_____
_____
_____
_____
_____
_____
_____
_____
Opinion: _____
_____
_____

2.

Describe X-Ray: _____
_____
_____
Observation: _____
_____
_____
_____
_____
_____
_____
_____
_____
Opinion: _____
_____
_____

3.

Describe X-Ray: _____
_____
_____
Observation: _____
_____
_____
_____
_____
_____
_____
_____
_____
Opinion: _____
_____
_____

4.

Describe X-Ray: _____

_____

_____

Observation: _____

_____

_____

_____

_____

_____

_____

_____

_____

Opinion: _____

_____

_____

5.

Describe X-Ray: _____

_____

_____

Observation: _____

_____

_____

_____

_____

_____

_____

_____

_____

Opinion: _____

_____

_____

6.

Describe X-Ray: _____

_____

_____

Observation: _____

_____

_____

_____

_____

_____

_____

_____

_____

Opinion: _____

_____

_____

7.

Describe X-Ray: _____
_____
_____
Observation: _____
_____
_____
_____
_____
_____
_____
_____
_____
Opinion: _____
_____
_____

8.

Describe X-Ray: _____
_____
_____
Observation: _____
_____
_____
_____
_____
_____
_____
_____
_____
Opinion: _____
_____
_____

9.

Describe X-Ray: _____
_____
_____
Observation: _____
_____
_____
_____
_____
_____
_____
_____
_____
Opinion: _____
_____
_____

10 Describe X-Ray: _____

_____

_____

Observation: _____

_____

_____

_____

_____

_____

_____

_____

_____

Opinion: _____

_____

_____

11

Describe X-Ray: _____

_____

_____

Observation: _____

_____

_____

_____

_____

_____

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Opinion: _____

_____

_____

12 Describe X-Ray: _____

_____

_____

Observation: _____

_____

_____

_____

_____

_____

_____

_____

_____

Opinion: _____

_____

_____

13

Describe X-Ray: _____

Observation: _____

Opinion: _____

14 Describe X-Ray: _____

Observation: _____

Opinion: _____

15

Describe X-Ray: _____

Observation: _____

Opinion: _____


Paste


Paste


Paste


Paste


Paste


Paste

Poisons

Madar (Calotropis Gigantea)

Yellow Oleander Plant
(Cerbera Thevetia)

Pink Kaner (Nerium Odorum)

Millipede

Castor Plant (Ricinus Communis) with fruits

Castor Seeds (Ricinus Communis)

Ratti /Gunja seeds
(Abrus Precatorius)

Chilli seeds (Capsicum annum)

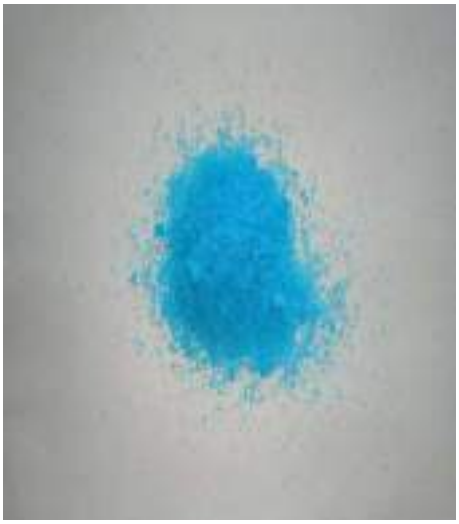
Marking Nuts/ Bhilawa
(Semecarpus anacardium)

Nux Vomica (Strychnine)

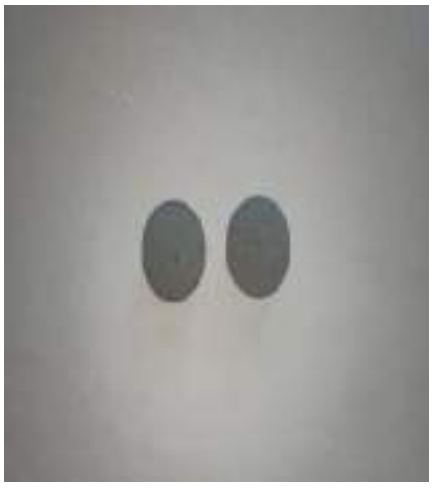
Tobacco (Nicotiana Tabacum)

Datura Seeds

Bitter Almonds



Copper Sulphate Crystals



Aluminium Phosphide
(Celphos)

Poppy Seeds (Khaskhas)

Lead tetroxide (Sindur)

Alcohol (Ethanol)

Study of Common Poisons of Medico-legal Importance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
1	**Sulphuric Acid**				
2	**Nitric Acid**				
3	**Hydrochloric acid**				
4	**Carbolic Acid** (Phenol)				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
5	**Oxalic Acid**				
6	**Sodium Hydroxide**				
7	**Potassium Hydroxide**				
8	**Phosphorus**				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
9	**Lead Oxide**				
10	**Arsenic Oxide**				
11	**Mercuric Sulphide**				
12	**Copper Sulphate**				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
13	**Glass Powder**				
14	**Castor Seeds** (Ricinus Communis				
15	**Croton Seeds** (Croton Tiglium)				
16	**Red chillies** (Capsicum annum)				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
17	**Marking Nut/ Bhilwa** (Semicarpus Anacardium)				
18	**Madar** (Calotropis Gigantea)				
19	**Ratti /Gunja** (Abrus Precotorius)				
20	**Dhatura** (Thorn apple)				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
21	**Bhang/ Ganja** (Canabis Indica)				
22	**Opium/ Afeem** (Papaver Somniferum)				
23	**Bitter Almond** (Hydrocynic acid)				
24	**Aconite** (Mitha Jahar)				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
25	**Yellow Oleander** (Cerebra Thevecia)				
26	**Nux Vomica** (Strychnine)				
27	**Snakes:** Cobra				
28	**Snakes**: Krait				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
29	**Snakes**: Viper				
30	**Scorpion**				
31	**Honey bees** (sting Bite)				
32	**Methyl Alcohol**				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
33	**Kerosene**				
34	**Barbaturates**				
35	Organopho-sphorus compound (**Follidon & Tik-20**)				
36	Organo-chloro compound (**D.D.T**.)				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
37	Organo-chloro compound (**Endrine**)				
38	**Carbamates** (Carbaryl)				
39	**Tobacco** (Nicotiana Tobacum)				
40	**Tincture Iodine**				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
41	**Celphos/ Alphos** (Aluminium Phosphide)				
42	**Amphetamines** /Ecstacy / Designer drug				
43	**Cocaine** (Erythroxylum coca)				
44	**Mushrooms** (Amanita Phalloides & Amanita Muscaria)				

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
45	**Paracetamol** (Acetamino-phen)				
46	**Fish Poisoning**				
47	**Mother-in - law's tongue** (D**umbcane**) Dieffenbachia Snake plant (common)				
48					

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Sr. No.	Name of Poison	Type of Poison	Physical Characters	Salient Clinical Features	Fatal Dose
49					
50					
51					
52					

Fatal Period	Treatment	Post-mortem Features	Medicolegal Significance

Part- III
Medico-legal Autopsy

Medico-legal Autopsies observed by students

Sr. No.	P.M. No./ Year Date	Cause of Death	Signature
1	/		
2	/		
3	/		
4	/		
5	/		
6	/		
7	/		
8	/		
9	/		
10	/		
11	/		
12	/		
13	/		
14	/		
15	/		

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion** of village/City: Taluka: District**:** by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

   (b)The date, hour and minute of beginning of post mortem Examination

   (c)The date, hour and minute of ending of postmortem examination.

5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-
   (a) Name of place where examined -
   (b) Distance from Dispensary or hospital.
   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

   In newly-born infants: -
   The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
14. Conditions of skin etc.
In suspected drowning the presence or absence of cutes anserine is to be noted.
15. Injuries to external genitals.
Indication of purging.

16. Position of limbs- Especially of arms and of Fingers or on the skin of hands and feet.

17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

18. Other injuries discovered by external examination or palpation of fractures etc.
18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

(iii) Brain: The appearance of its Coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted.

20. Thorax: -

(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion** of village/City: Taluka: District**:** by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

   (b)The date, hour and minute of beginning of post mortem Examination

   (c)The date, hour and minute of ending of postmortem examination.

5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-
   (a) Name of place where examined -
   (b) Distance from Dispensary or hospital.
   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

   In newly-born infants: -
   The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
14. Conditions of skin etc.
In suspected drowning the presence or absence of cutes anserine is to be noted.
15. Injuries to external genitals.
Indication of purging.

16. Position of limbs- Especially of arms and of Fingers or on the skin of hands and feet.

17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

18. Other injuries discovered by external examination or palpation of fractures etc.
18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

(iii) Brain: The appearance of its Coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted.

20. Thorax: -

(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion**

of village/City: Taluka: District**:**

by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

   (b)The date, hour and minute of beginning of post mortem Examination

   (c)The date, hour and minute of ending of postmortem examination.

5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-

   (a) Name of place where examined -

   (b) Distance from Dispensary or hospital.

   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

In newly-born infants: -

The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
14. Conditions of skin etc.
In suspected drowning the presence or absence of cutes anserine is to be noted.
15. Injuries to external genitals.
Indication of purging.

16. Position of limbs- Especially of arms and of Fingers or on the skin of hands and feet.

17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

18. Other injuries discovered by external examination or palpation of fractures etc.
18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

(iii) Brain: The appearance of its Coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted.

20. Thorax: -

(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion** of village/City: Taluka: District**:** by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

   (b)The date, hour and minute of beginning of post mortem Examination

   (c)The date, hour and minute of ending of postmortem examination.

5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-
   (a) Name of place where examined -
   (b) Distance from Dispensary or hospital.
   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

   In newly-born infants: -
   The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
14. Conditions of skin etc.
In suspected drowning the presence or absence of cutes anserine is to be noted.
15. Injuries to external genitals.
Indication of purging.

16. Position of limbs- Especially of arms and of Fingers or on the skin of hands and feet.

17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

18. Other injuries discovered by external examination or palpation of fractures etc.
18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

(iii) Brain: The appearance of its Coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted.

20. Thorax: -

(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion** of village/City: Taluka: District**:** by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

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6. If not examined at dispensary or hospital-
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II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

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10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
14. Conditions of skin etc.
In suspected drowning the presence or absence of cutes anserine is to be noted.
15. Injuries to external genitals.
Indication of purging.

16. Position of limbs- Especially of arms and of Fingers or on the skin of hands and feet.

17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
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18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

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(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion**

of village/City: Taluka: District**:**

by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

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5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-
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   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

   In newly-born infants: -
   The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
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Indication of purging.

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17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

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18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

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(d) Right Lung with weight

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(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion**

of village/City: Taluka: District**:**

by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

   (b)The date, hour and minute of beginning of post mortem Examination

   (c)The date, hour and minute of ending of postmortem examination.

5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-

   (a) Name of place where examined -

   (b) Distance from Dispensary or hospital.

   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

   In newly-born infants: -

   The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
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If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

18. Other injuries discovered by external examination or palpation of fractures etc.
18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

(iii) Brain: The appearance of its Coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted.

20. Thorax: -

(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion**

of village/City: Taluka: District**:**

by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

   (b)The date, hour and minute of beginning of post mortem Examination

   (c)The date, hour and minute of ending of postmortem examination.

5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-

   (a) Name of place where examined -

   (b) Distance from Dispensary or hospital.

   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

   In newly-born infants: -

   The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
14. Conditions of skin etc.
In suspected drowning the presence or absence of cutes anserine is to be noted.
15. Injuries to external genitals.
Indication of purging.

16. Position of limbs- Especially of arms and of Fingers or on the skin of hands and feet.

17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

18. Other injuries discovered by external examination or palpation of fractures etc.
18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

(iii) Brain: The appearance of its Coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted.

20. Thorax: -

(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion**

of village/City: Taluka: District**:**

by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

   ii

4. (a) The date, hour and minute of its receipt.

   (b)The date, hour and minute of beginning of post mortem Examination

   (c)The date, hour and minute of ending of postmortem examination.

5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

6. If not examined at dispensary or hospital-
   (a) Name of place where examined -
   (b) Distance from Dispensary or hospital.
   (c) Reason why the body was not sent to the dispensary or hospital.

II. External Examination: -

7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

9. Special marks on the skin such as scars, tattooing etc, any malformations peculiarities or other marks of identification. State of the teeth.

   In newly-born infants: -
   The length and (if possible), the weight of the body is to be recorded together with the state of the hair, nails and umbilical cord, its length, whether placenta is attached or not, and if present, its size and condition.

10. Condition of Body- Whether well nourished, thin or emaciated warm or cold.

11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
13. Feature- Whether natural or swollen, state of eyes, position of tongue; nature of fluid (if any) oozing from mouth, nostrils or ears.
14. Conditions of skin etc.
In suspected drowning the presence or absence of cutes anserine is to be noted.
15. Injuries to external genitals.
Indication of purging.

16. Position of limbs- Especially of arms and of Fingers or on the skin of hands and feet.

17. Surface wounds, and injuries- Their nature, position, dimensions(measured) and directions to be accurately stated- their probable age and causes to be noted.
If bruises be present, what is the condition of the subcutaneous tissues?
(N.B- When injuries are numerous and cannot be mentioned within the space available they should be mentioned on a separate paper which should be signed.)

18. Other injuries discovered by external examination or palpation of fractures etc.
18a. Can you say definitely that the injuries shown against serial nos. 17 and 18 are ***ante-mortem injuries?***

III. Internal Examination: -

19. Head: -

(i) Injuries under the scalp and their nature.

(ii) Skull: vault and base-describe fractures their sites, dimensions, direction etc.

(iii) Brain: The appearance of its Coverings, size, weight and general condition of the organ itself and any abnormality found in its examination to be carefully noted.

20. Thorax: -

(a) Walls, ribs, cartilages

(b) Pleura

(c) Larynx, Trachea and bronchi

(d) Right Lung with weight

(e) Left Lung with weight

(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

22. Spine and spinal cord-

23. a) Whether the ante-mortem injuries found on the dead body were sufficient in the ordinary course of nature to cause death?

(b) If yes, which of the injuries were individually sufficient in the ordinary course of nature to cause death?

(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Indoor/Casualty no: **PM No:**

Hospital: ADR No.:

Police station:

Memorandum of a Post-mortem Examination held at _____ Hospital on the body of **Name** **, Age- Yrs, Sex , Religion** of village/City: Taluka: District**:** by **Dr** /_____ Hospital _____.

I. General Particulars: -

1. (a) By whom was the corpse sent?

   (b) Name of place from which sent.

   (c) Distance of place from which sent.

2. By whom was the corpse brought?

3. By whom identified? i.

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5. Substance of accompanying report from police office or magistrate, together with the date of death, if known. Supposed cause of death or reason, for examination.

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7. Sex, apparent age, race or caste, Description of clothes and of ornaments on the body.

8. Condition of the clothes – Whether wet with water, stained with blood or soiled with vomit or faecal matter.

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11. Rigor Mortis- Well-marked, slight or absent whether present

12. Extent and signs of decomposition, presence or post-mortem lividity of buttocks, loins, back and things or any other part. Whether bullae present and the nature of the it contains fluid, condition of the cuticle.
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(f) Pericardium

(g) Heart with weight

(h) Large vessels

(i) Additional remarks

21. Abdomen: -

(a) Walls -

(b) Peritoneum -

(c) Cavity-

(d) Buccal cavity, teeth, tongue and pharynx-

(e) Oesophagus-

(f) Stomach and its contents-

(g) Small intestine and its contents-

(h) Large intestine and its contents-

(i) Liver and gall bladder with weight-

(j) Pancreas and suprarenals-

(k) Spleen with weight.

(l) Kidneys with weights

(m) Bladder-

(o) Organ of generation-

(p) Additional remarks with, wherever possible, Medical Officer's deduction from the state of contents of the stomach as to the time of death and last meal.

(q) State which viscera, (if any) have been retained for chemical examination and also quote the numbers on the bottles containing the same-

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(c) Which of the injuries collectively are sufficient in the ordinary course of nature to cause death?

Opinion as to the probable/Final cause of death: -

Sign
Name of Doctor and seal

PM no:
Dated:

*The spinal cord need not be examined unless there are any indications of disease, strychnine poisoning or injury.
Note: - The report must be written and signed immediately after the examination. Medical officers will at once dispatch a duplicate copy to the Civil Surgeon of their district for in his office.
Great care should be taken not to cut viscera before they have been inspected in *Situ.*

Post Mortem No. :- , Dated:

1. Place:

Forwarded to the **,** P.S. for information with reference to his No. / of Dated: .

2. Viscera has been/ **not** been preserved.

Sign
Name of Doctor and seal

PM no:
Dated:

Part- IV

Common Medico-legal proforma routinely used in medico-legal Practice

Form in which to report post mortem examination to be used when forwarding Viscera to the Chemical Analyser

From:
TO
THE CHEMICAL ANALYSER TO GOVERNMENT OF MAHARASHTRA, _____

Date: _____

Description of Viscera forwarded for examination:

Mode of packing: Box No. Bottle No. Weight of parcel		Copy of the label attached to bottle Impression of Seal
Mode of dispatch	Date of Dispatch	

Information furnished by police officer or precis of case :

Name: Sex: Age: Caste:

Thana or village:

Story of the case -

Date and hour of dispatch of body Date of receipt	Date and hour of autopsy	Names of officer by whom Examination was actually made

Appearance of Body –

Muscularity: Stout: Emaciated:

Special Marks:-

Scars: Tattooing: Amount of Hairs etc.

Signs of decomposition:-

Wounds and bruises:

(a) Position: (b) Character: (c) Size:

State of natural orifices:

Nostrils: Mouth: Vagina:

Anus: Urethra:

State of limbs etc.

Rigor mortis: Position:

Contents of hands if clenched:

Feature	Relaxed
	Contracted

Eyelids: Pupils: Contents of mouth:

Position of tongue: State of teeth:

Thorax -

Ribs: Cartilages: Pleura: Pericardium:

Heart: Shape and appearance

Cavities

Clots ante or post-mortem

Muscular structure

Vessels: Clots
Aneurysm
Atheroma

Lungs : Appearance
Colour
Consistence
Adhesions

Larynx, trachea and bronchi for foreign bodies or disease:

Abdomen: -

Peritoneum

Peritoneal cavity, contents

Liver and gall bladder -form and size, disease or injury

Pancreas disease or injury

Spleen disease or injury

Kidney disease or injury

Stomach Size and general appearance
Appearance of coats
Contents, appearance, odour and quantity.

Intestine Size and general appearance
Appearance of coats

General Organs: -

Bladder and contents

Uterus appearance, size and contents

Vagina, contents

Head:

Scalp

Bones, Disease or Injury

Membranes

Brain substance and ventricles

Base of skull fracture, caries, extravasations, etc.

The Spinal cord need not be examined unless any indication of disease or injury exists.

Fracture and dislocation

More detailed description of injury or disease

Opinion as to the cause of death: -

Station

Date Civil Surgeon / Medical Officer in Charge / Autopsy Surgeon

Form No II

Form or report to be used when forwarding substance Other than viscera to the chemical analyser

From:

To
THE CHEMICAL ANALYSER
GOVERNMENT OF MAHARASHTRA,

_____

Dated: / /

Forwarding the article mentioned below for examination for _____

_____ In connection with the case of_____

Description of Articles

Mode of packing and weight of parcel If standard boxes and bottles are used a) Box No. b) Bottle No.	Copy of the label attached to bottle
Mode of Dispatch Date Date:	Date of receipt in Chemical Analyzer's office

Facts of Medico legal importance in connection with case:

Station

Date Civil Surgeon / Medical Officer in Charge / Autopsy Surgeon

Form for Dispatch of Viscera for Histopathological Examination

TO,
HOD / In-charge,
Histopathology Section,
Department of Pathology,

______________________________, __________________ .

(Through: ____)

Subject : **Regarding Histopathological examination and report.**

Reference : MLPM No. ________________________ Date: _____________

Name of deceased: ____________________________________

Age: ___________ Sex: ______________

Hospital Reg./MLC No_______________ Ward: ____________

DOA & Time _______________ DOD & Time _____________

Nature Of specimen:

Preservative Used:

Clinical Details:

Clinical Diagnosis:

Autopsy findings in brief:

Probable cause of death on Autopsy:

Special instruction, if any: -

Place:
Date & Time:

Signature
Name of Doctor
Designation & seal

✂- -

Histopathology Examination Bottle No. 1

Name of the Hospital: ____

P.M. No: ________________________________**Date:** ______________________

Name of Deceased: ____

Police Station: ____

Nature of Specimen: ____

____

Preservative Used: __________________________________

Date: __________
Place: __________

Autopsy Surgeon
Sign & seal

✂- -

Labels for Viscera Bottles

Bottle No. 1

Name of the Hospital: ____

P.M. No: ______________________________**Date:** ____________________

Name of Deceased: ____

Police Station: ____

Nature of Specimen: ____

Preservative Used: _________________________________

Date: _________ **Autopsy Surgeon**

Place: _________ *Sign & seal*

✂- -

Bottle No. 2

Name of the Hospital: ____

P.M. No: ______________________________**Date:** ____________________

Name of Deceased: ____

Police Station: ____

Nature of Specimen: ____

Preservative Used: _________________________________

Date: _________ **Autopsy Surgeon**

Place: _________ *Sign & seal*

✂- -

Bottle No. 3

Name of the Hospital: ____

P.M. No: ______________________________**Date:** ____________________

Name of Deceased: ____

Police Station: ____

Nature of Specimen: ____

Preservative Used: _________________________________

Date: _________ **Autopsy Surgeon**

Place: _________ *Sign & seal*

✂- -

Bottle No. 4

Name of the Hospital: ____

P.M. No: ______________________________**Date:** ____________________

Name of Deceased: ____

Police Station: ____

Sample Preservative Used: ____

Date: _________ **Autopsy Surgeon**

Place: _________ *Sign & seal*

Instructions for Forwarding Blood/Tissue For DNA Fingerprinting/ Paternity Testing.

1. Medical officer should collect fresh blood in 2 ml plastic tubes (2 blood samples from each person) provided by Regional Forensic Science Laboratory.

2. Please shake the tube for 7-8 times after collecting blood.

3. Duly labelled tube should be kept in sterile plastic bottle which should be immediately sealed.

4. Duly filled IDENTIFICATION FORM should be sent along with the sample.

5. COPY OF SEAL should be provided at the end of IDENTIFICATION FORM.

6. For each person, a separate IDENTIFICATION FORM should be filled by Medical Officer while forwarding samples for DNA profiling.

7. Photograph of person on IDENTIFICATION FORM should be duly signed and attested by the Medical Officer.

8. IDENTIFICATION FORM should be signed by Witnesses in front of Medical Officer.

9. The samples should be sent to the Regional Forensic Science Laboratory in ice box with ice, if more than 4 Hours are required to submit the samples.

10. Products of abortion/ other tissue should be sealed in a sterile plastic bottle and sent to the Regional Forensic Science Laboratory in ice box with ice. If available, 4% EDTA could be used as preservative.

11. Don’t use formalin or other preservatives. Formalin preserved samples are considered unacceptable/ inappropriate for DNA analysis by Forensic Science Laboratories.

12. In case of blood transfusion to donor within last three months, blood sample should not be collected. In such case, donor’s blood sample should be collected after four months of blood transfusion.

Identification form for forwarding samples for DNA Fingerprinting/ Profiling

To
Deputy Director,
Regional Forensic Science Laboratory,
State of Maharashtra, _____.

Prefix photograph.

Photograph to be attested by Medical Officer

IDENTIFICATION FORM

Name : _____
Age: _____Sex: _____
Father's / Husband's / Guardian's Name :_____
Address (with Tel. No. Fax. If any):_____
Description of sample : _____
Genetic abnormalities, if any (specify): _____
Date and Time of Sample collection :- Date:_____ Time:_____
Forwarded by:
(a) Hon'ble Court of / Police Station :_____
(b) C. R. No. /FIR/Case /MC/OP No., etc. : _____

DECLARATION BY DONOR
(OR BY GUARDIAN IN CASE OF MINOR DONOR)

I, _____hereby declare that the blood given by me / my ward to Regional Forensic Science Laboratory, State of Maharashtra, _____ is with my consent and I / my ward did not receive a blood transfusion within last three months.
(This consent is explained to patient in _____language)

Signature/Thumb impression
(Subject/Guardian)

The blood is collected in presence of following witnesses:

(1) Name: _____Signature: _____

(2) Name: _____Signature: _____

Copy of Seal

Sign. and designation of M.O. with Stamp

- STRIKE OUT WHICHEVER NOT APPLICABLE,
- IN CASE OF BLOOD TRANSFUSION TO DONOR WITHIN LAST THREE MONTHS, BLOOD SAMPLE SHOULD NOT BE COLLECTED.
- PASSPORT SIZE PHOTOGRAPH TO BE ATTESTED BY MEDICAL OFFICER.

Summons to Witness

In the District & Sessions Court

At

Session Case No. _____of 20

Summon to witness

To,

Whereas complaint has been made before me that_____

Of _____

has committed the offence of _____

on or above the _____day of _____20____at _____

and it appears to me that you are likely to give material evidence for the _____

You are hereby summoned to appear before this court on the _____day _____

at_____ hours to_____

testify what you know concerning the matter of the said complaint, and not to depart thence, without leave of the court, and you are hereby warned that if you shall, without just excuse neglect or refuse to appear at the said time and place a warrant will be issued to compel your attendance.

Given under my hand and the seal of the court this _____day of _____20_____

Superintendent

(By order of Session Judge)

Second MBBS (from October 2020)

Subject: Microbiology Theory / Practical

Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. (Vol. 1; page nos. 205-227)

1. Total Teaching hours : **190**
2. A. Lectures(hours): **70**
   B. Self-directed learning (hours):- **10**
   C. Clinical Postings (Hours): NA
   D. Small group teachings/tutorials/Integrated teaching / Practical's (hours)**: 110**

Competency Nos.	**Topics and Subtopics**
MI1.1	Introduction to Microbiology and historical aspects. Introduction to bacteria, viruses & Bacteriophages, fungi, parasites, host parasite relationship, normal flora.
MI1.2	Morphology of bacteria, microscopy, Gram staining, Z-N staining, stool examination- routine microscopy
MI1.3	Types of infection, source/ reservoir of infection, modes of transmission, pathogenicity, definition of prevalence, incidence, types of infectious diseases (endemic, epidemic, pandemic, sporadic)
MI1.4	Methods of sterilization and disinfection, their application in the laboratory, clinical and surgical practice, demonstration of working of autoclave
MI1.5	Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice
MI1.6	Mechanism of drug resistance, methods of antibiotic susceptibility testing, definition of MIC, MBC, break points, interpretation of antibiotic susceptibility test report, antimicrobial audit/use, antibiotic policy, antimicrobial stewardship.
MI1.7	Immunity
MI1.8	Antigen, antibodies, immune response and complement, antigen antibody reactions
MI1.9	Vaccines, universal vaccination program, immunoprophylaxis, immunotherapy

Competency Nos.	Topics and Subtopics
MI1.10	Hypersensitivity, autoimmune disorders and immunodeficiency states, laboratory methods used in their detection
MI1.11	Immunological mechanisms of transplantation and tumor immunity
MI2.1	Rheumatic Heart Disease-definition, etiological agent, pathogenesis, clinical features and laboratory diagnosis. Streptococci
MI2.2	Infective endocarditis- classification, etiological agents, pathogenesis, clinical features and laboratory diagnosis. Streptococcus viridans, Streptococcus mutans, HACEK
MI2.3	Blood collection for culture, throat swab collection, blood culture, ASO test, interpretation of the test
MI2.4	Anemia-definition, etiological agents, pathogenesis, clinical features and laboratory diagnosis. Hookworm, Trichuris trichiura,
MI2.5	Kala azar, malaria, filariasis and other common parasites prevalent in India - *Schistosomes*, ***Fasciolopsis buski,*** *Paragonimus westermani*,
MI2.6	Peripheral smear staining for malaria, Identify the slide for filarial
MI2.7	HIV- epidemiology, the etio- pathogenesis, evolution, complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV
MI3.1	Microbial agents causing diarrhea and dysentery- epidemiology, morphology, pathogenesis, clinical features and laboratory diagnosis of Shigella, Campylobacter, . Vibrio, salmonella, E. hystolytica, Giardia, B. coli, H. nana, Taenia , Intestinal nematodes, Norwalk virus and Rota virus, Coronavirus
MI3.2	Stool examination-routine microscopy, hanging drop preparation,
MI3.3	Septicemia, Enteric fever and Food poisoning Salmonella -Morphology, pathogenesis, clinical features, laboratory diagnosis.
MI3.4	Blood culture, Widal test, Stool culture, Clot culture, Interpretation of the reports
MI3.5	Food poisoning- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Staphylococci, Cl. botulinum, Bacillus cereus
MI3.6	Acid peptic disease (APD)- etio-pathogenesis, clinical course laboratory diagnosis and management H. pylori
MI3.7	Viral hepatitis- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Hepatitis A, B, C, D, E, Cytomegalovirus, Epstein-Barr virus, HSV, VZV, Measles, Rubella
MI3.8	Serological tests for the laboratory diagnosis of viral hepatitis, viral markers, interpretation of reports

Competency Nos.	Topics and Subtopics
MI4.1	Anaerobic infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Spore bearing and non-spore bearing anaerobes, Clostridia
MI4.2	Bone and joint infections- etio-pathogenesis, clinical features and laboratory diagnosis. Prosthetic joint infections, Staphylococci, Acinetobacter
MI4.3	Skin and soft tissue infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Superficial, cutaneous and sub-cutaneous fungal infections, Mycetoma, Leprosy, Herpes.
MI5.1	Meningitis- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Meningococci, Leisteria, H. influenzae, Cryptococcus neoformans
MI5.2	Encephalitis- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Primary amoebic meningo-encephalitis, viral encephalitis, Japanese encephalitis, Rabies, Aseptic meningitis -ECHO viruses
MI5.3	laboratory diagnosis of meningitis, interpretation of laboratory reports
MI6.1	Upper respiratory tract infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis Orthomyxo virus, Paramyxo virus, Adenovirus, Rhinovirus, Diphtheria, Bordetella and Lower respiratory tract infections-etiological agents, pathogenesis, clinical features and laboratory diagnosis Streptococcus pneumonia, Mycobaterium tuberculosis,
MI6.2	Gram staining- Interpretation of results
MI6.3	Z-N staining and Fluorescent staining- Interpretation of results
MI7.1	Genitourinary infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Non-gonococcal urethritis, Trichomoniasis, . Bacterial vaginosis
MI7.2	Sexually transmitted infections- etiological agents, pathogenesis, clinical features and laboratory diagnosis. Syphilis, Gonorrhea, Herpes, Calymmatobacterium, HPV, Molluscum contagiosum
MI7.3	Urinary tract infections- etiological agents, pathogenesis, significant bacteruria , clinical features and laboratory diagnosis. E. coli, Klebsiella, Proteus
MI8.1	Zoonotic diseases- etiological agents, mode of transmission, pathogenesis, clinical features laboratory diagnosis and prevention-Brucella, Yesinia, Leptospira, Anthrax and Arbo viruses, Hydatid disease
MI8.2	Opportunistic infections- etio-pathogenesis, factors contributing to the occurrence of OI, laboratory diagnosis - Toxoplasma, Pneumocystis jiroveci, Cryptospora, Isospora,
MI8.3	Oncogenic viruses in the evolution of virus associated malignancy

Competency Nos.	Topics and Subtopics
MI8.5	Healthcare Associated Infections (HAI)- definition, types, factors that contribute to the development of HAI and the methods for prevention- Pseudomonas, MOTT, Antibiotic associated diarrhea
MI8.6	Hand hygiene, bio medical waste management, environmental hygiene, use of equipments, respiratory hygiene and cough etiquette, PEP, spill management, vaccination
MI8.7	Infection control practices and use of Personal Protective Equipments (PPE)
MI8.8	Microbiology of food, water and air
MI8.9	Methods of sample collection and transport
MI8.10	Collection and transport of specimens
MI8.11	Respect for patient samples sent to the laboratory for performance of laboratory tests
MI8.12	Confidentiality pertaining to patient identity in laboratory results
MI8.13	Appropriate laboratory test in the diagnosis of the infectious disease
MI8.14	Confidentiality pertaining to patient identity in laboratory results
MI8.15	Interpret the results of the laboratory tests used in diagnosis of the infectious disease
MI8.16	National Health Programs in the prevention of common infectious diseases- Vector borne diseases control program, Revised National Tuberculosis Control Program (RNTCP), National AIDS Control Program, National Leprosy Eradication Program, Pulse Polio Program- Poliovirus
Miscellaneous topics - may be covered in theory or SGT	Burkholderia, Mycoplasma, Borrelia, Actinomyses & Nocardia, Rickettsia, Bortonella, Ehrlichia, Chlamydiae, Ebola virus, Slow viruses

AETCOM Module no.	Topics and Subtopics
2.5	Bioethics-patient autonomy and decision making
2.6	Bioethics-patient autonomy and decision making
2.7	Bioethics-patient autonomy and decision making

Revision

Paper wise distribution of topics for Prelim & MUHS Annual Examination
Year: Second MBBS Subject: MICROBIOLOGY

Paper	Section	Topics
I	A	MCQs on all topics of the paper I
		General Microbiology and Immunity
		CVS and Blood
		Gastrointestinal and hepatobiliary system
		AETCOM Module No- 2.5,2.6 and 2.7
II	A	MCQs on all topics of the paper II
		Musculoskeletal system, skin and soft tissue infection
		Central nervous system infections
		Respiratory tract infections
		Genitourinary and sexually transmitted infections
		Zoonotic diseases and miscellaneous

Second MBBS Internal Assessment Subject: Microbiology

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase	IA – 1 -Exam (After 3 months , Jan)			IA – 2 -Exam (After 7 months, May)			Prelims (July)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical	Total Marks
Second MBBS	50	50	100	50	50	100	Paper 1 -100 Paper 2 -100	100	300

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 3 internal assessment examinations in Microbiology.
2. The suggested patterns of question paper for first two internal assessment theory examinations is given below. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 40 (theory) + 40 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

Phase II	Theory	Practical
IA 1	**50**	**50**
IA 2	**50**	**50**
Prelim	**200**	**100**
Total	**300**	**200**
Conversion out of	**40**	**40**
Conversion formula	**Total marks in 3 IA theory examinations /7.5**	**Total marks in 3 IA Practical examinations /5**
Eligibility criteria after conversion	**16**	**16**
	Combined theory + Practical = 40	

4. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

5. Students 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 order to be eligible for appearing at the final University examination of that subject.

6. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

7. Remedial measures

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically.

ii) Extra classes for such students may be arranged. If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.

iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	**Practical**
Remedial examination (pattern as per final examination)	**200**	**100**
Conversion out of	**40**	**40**
Conversion formula	**Marks in remedial theory examinations /5**	**Marks in remedial Practical examinations /2.5**
Eligibility criteria after conversion	**16**	**16**
	Combined theory + Practical = 40	

B. Remedial measures for absent students:

If any of the students is absent for any of the 3 IA examinations due to any reasons, following measures shall be taken.

i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.

iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Format for Internal Assessment Theory Paper IA – 1 & IA - 2

Question No.	Type of Question	No. of Questions	Max. Marks
1.	MCQ	10	10 (1 marks each)
2.	SAQ	5 (Any four out of 5)	28 (7 marks each)
3.	LAQ	1 (Compulsory)	12
		Total	50

Second MBBS Practical Mark's Structure
Internal Assessment Examinations
(Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards)

Subject : MICROBIOLOGY Practical										
Seat No.	IA – 1					IA - 2				
	Gram Stain	P.S. for M.P.	Journal/Log book	Viva	Total	Z-N stain	Stool - Routine microscopy	Journal/Log book	Viva	Total
Max. Marks	10	10	10	20	50	10	10	10	20	50

Second MBBS Practical Mark's Structure (Prelim)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: MICROBIOLOGY										
Practical							Oral/Viva			Total
Seat No.	Gram/ Z-N staining	P.S. for M.P./ Stool –routine microscopy	Use of PPE/ Hand hygiene	Interpretation of reports	Journal/ Log book	Total	Viva-I	Viva-II	Total	Practical & Oral (F + I)
Max. Marks	15	15	10	20	10	70	15	15	30	100

Second MBBS Practical Mark's Structure (M.U.H.S Examination)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: MICROBIOLOGY										
Practical							Oral/Viva			Total
Seat No.	Gram/ Z-N staining	P.S. for M.P./ Stool –routine microscopy	Use of PPE/ Hand hygiene	Interpretation of reports	Journal/ Log book	Total	Viva-I	Viva-II	Total	Practical & Oral (F + I)
	A	B	C	D	E	F	G	H	I	J
Max. Marks	15	15	10	20	10	70	15	15	30	100

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

SECTION "A" MCQ

Instructions:

1) *Put in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

1.20 MCQ(1 marks each) *(20x1)* *20*

a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) r) s) t) u)

SECTION "B"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

SECTION "B" (40 Marks)

2. Short Answer Questions (AETCOM 2.5, 2.6, 2.7) (compulsory) (7x1=07)

a)

3. Short Answer Questions (Answer Any 3 out of 4) (7x3=21)

a) b) c) d)

4. Structured Long Answer Questions (Compulsory) (12x1=12)

a)

5. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)

a) b) c) d) e)

6. Structured Long Answer Questions (Compulsory) (12x1=12)

a)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

SECTION "A" MCQ

Instructions:

1) *Put in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x1 = 20)

a) b) c) d) e) f) g) h) i) j)
k) l) m) n) o) p) r) s) t) u)

SECTION "B"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

SECTION "B"

2. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)
a) b) c) d) e)

3. Structured Long Answer Questions (Compulsory) (12x1=12)
a)

4. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)
a) b) c) d) e)

5. Structured Long Answer Questions (Compulsory) .(12x1=12)
a)

Competency Based Medical Education

Year: Second MBBS

Subject: Microbiology

Learning Resource Material

Books recommended:

1. Textbook of Microbiology – R. Ananthanarayan C. K. Jayaram Panikar
2. A Textbook of Microbiology – P. Chakraborty
3. Textbook of Medical Microbiology – Rajesh Bhatia & Itchpujani
4. Textbook of Medical Microbiology – Arora and Arora
5. Textbook of Medical Parasitology – C. K. Jayaram Panikar
6. Textbook of Medical Parasitology – Arora and Arora
7. Textbook of Medical Parasitology – S.C.Parija
8. Microbiology in clinical practice – D. C. Shanson
9. A Textbook of Parasitology – Dr. R.P. Karyakarte and Dr. A.S. Damle
10. Essentials of Medical Microbiology – Apurba shashtry

Reference books:

1. Mackie McCartney practical Medical Microbiology- Colle JG, Fraser AG
2. Principles of Bacteriology, Virology & Immunology vol. 1, 2, 3, 4, 5- Topley Wilsons
3. Medical Mycology (Emmons)- Kwon – Chung
4. Review of Medical Microbiology (Lange)- Jawetz
5. Immunology- Weir DM
6. Medical Microbiology- David Greenwood, Richard Stack, John Pentherer
7. Parasitology- KD Chatterjee
8. Medical virology- Timbury MC
9. Mackie McCartney Medical, Microbiology vol.1- Duguid JP
10. Microbial infections- Marmion BP, Swain RHA
11. Bailey & Scott's Diagnostic Microbiology
12. Textbook of Mycology – Jagdish Chander

Maharashtra University of Health Sciences
Nashik

MICROBIOLOGY LOGBOOK

For

PHASE II MBBS STUDENTS

AS PER

COMPETENCY BASED CURRICULUM

First Edition: 2020

Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize **“Health for all”** as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching learning strategies for the same. With this goal in mind, early clinical exposure, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency Based curriculum.

Name of the College

_____

_____

Admission Year : _____

CERTIFICATE

This is to certify that,

Mr/Ms._____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for Phase II MBBS Competency Based Curriculum in the subject of Microbiology.

Date: ___/___/_____

Place: _____

Teacher-in-Charge

Professor and Head

Department of Microbiology

Instructions

1) This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II MBBS students in the subject of Microbiology.
2) Students are instructed to keep their logbook entries up to date.
3) Students are expected to write minimum 1 reflections on Self-Directed Learning (SDL).
4) Students also have to write reflections on AETCOM Modules – 2.5, 2.6 and 2.7.
5) Reflections should be structured using the following guiding questions:

- What happened? (What did you learn from this experience)
- So what? (What are the applications of this learning)
- What next? (What knowledge or skills do you need to develop so that you can handle **this type of situation?)**

6) The logbook assessment will be based on multiple factors like

- Attendance
- Active participation in the sessions,
- Timely completions
- Quality of write up of reflections
- Overall presentation

INDEX

Sr. No	Description	Page No's	Status	Signature of Teacher
			Complete/ Incomplete	
1	Self-Directed Learning, skill assessment, participation in Group discussions			
2	*AETCOM Module No. 2.5, 2.6, 2.7			
3	Attendance Records			
4	Records of Internal Assessment			

*AETCOM – Competencies for IMG, 2018, Medical Council of India.

Section 1. Self-Directed Learning, skill assessment, participation in Group discussions

Sr. No	Self-Directed Learning, skill assessment, participation in Group discussions	Date	Signature of Teacher

Sr. No	Self-Directed Learning, skill assessment, participation in Group discussions	Date	Signature of Teacher

Reflection on Self-directed learning Experience

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on Self-directed learning Experience

Topic: **Date:**

Signature of Teacher-in- charge

Section 2

Reflection on AETCOM Module – 2.5

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on AETCOM Module – 2.6

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on AETCOM Module - 2.7

Topic: **Date:**

Signature of Teacher-in- charge

SECTION 3B: Details of attending extra classes [For poor attendance (if any)]

S. No	Date	Period	Total hours	Signature of Student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Course Content
Second MBBS (from October 2020)
Subject: Pathology (Theory and Practical)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; page nos.160-203)

1. Total Teaching hours : **230 hours**
2. A. Lectures (hours): **80**
   B. Self-directed learning (hours): **12**
   C. Clinical postings (hours): NIL
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**: 138**

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	**138 hours**	**12 hours**
PA1.1 – 1.3	**Introduction to Pathology** *Core*: common definitions and terms, role of pathologist, branches of pathology Practicals: histological techniques, working of a microscope *Non-core*: history and evolution of pathology	1	2	
PA2.1 – 2.8	**Cell injury and adaptations** *Core*: Cell injury, necrosis, apoptosis, intracellular accumulations, cell death, cellular adaptations, calcification, disorders of pigment metabolism, *Non-core*: cellular aging	6	6	
PA3.1-3.2	**Amyloidosis-** *Core*: Pathogenesis and pathology of amyloidosis	1	2	
PA4.1 – 4.4	**Inflammation** *Core*: Acute and chronic inflammation, mediators of inflammation, granulomatous inflammation, including TB	4	4	
PA5.1	**Healing and repair-** *Core*: Repair and wound healing	1	-	
PA6.1- 6.7	**Hemodynamic disorders** *Core*: Edema, hyperemia, congestion, hemorrhage, shock, thrombosis, embolism, ischemia, infarction	4	6	
PA7.1-7.5	**Neoplasia** *Core*: Definition and classification of neoplasia, molecular basis of cancer, carcinogenesis, effects of tumour on host, paraneoplastic syndrome, laboratory diagnosis of cancer *Non-core*: Immunology and immune response to cancer	5	6	
PA8.1-8.3	**Basic diagnostic cytology** *Core*: Diagnostic role of cytology, exfoliative cytology	-	2	
PA9.1-9.37	**Immunopathology** *Core*: Principles of immunity, hypersensitivity reactions, HLA system, transplant rejection, autoimmunity, systemic lupus erythematosus, pathology of HIV/AIDS	5	2	
PA10.1-10.4	**Infections and infestations-** *Core*: Malaria, cysticercus, leprosy, *Non-core:* Common bacterial, viral, protozoal, and helminthic diseases	-	2	1

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	138 hours	12 hours
PA11.1-11.3	**Genetic and pediatric diseases-** *Non-core*: Mutations, Tumors and tumour-like conditions of infancy and childhood, common storage disorders	1	-	1
PA12.1-12.3	**Environmental and nutritional disease** *Core*: Air pollution, tobacco, alcohol, protein calorie malnutrition, starvation, obesity	-	2	
PA13.1-13.5	**Introduction to hematology** *Core*: Hematopoiesis and extramedullary hematopoiesis, definition and classification of anemia, anticoagulants, investigations in anemia, peripheral smear examination	2	8	
PA14.1-14.3	**Microcytic anemia-** *Core*: Iron metabolism, microcytic hypochromic anemia, peripheral smear in microcytic anemia	1	4	
PA15.1-15.4	**Macrocytic anemia** *Core*: Vitamin B12 metabolism. Etiology and pathogenesis of B12 deficiency, laboratory investigations in macrocytic anemia, megaloblastic anemia *Non-core:* differences between megaloblastic and non-megaloblastic anemia	1	4	
PA16.1-16.7	**Hemolytic anemia** *Core:* Definition and classification of hemolytic anemia, pathogenesis, features, hematological indices, sickle cell anemia, thalassemia, peripheral smear picture in hemolytic anemia, classification, clinical features of hemolytic anemia	2	6	
PA17.1-17.2	**Aplastic anemia-** *Non-core*: Etiology, pathogenesis, findings, bone marrow aspiration and biopsy	1	2	
PA18.1-18.2	**Leukocyte disorders** *Core:* Leukocytosis, leukopenia, acute and chronic leukemia	2	2	
PA19.1-19.7	**Lymph node and spleen** *Core:* Lymphadenopathy, TB lymphadenitis, Hodgkin's disease, non-Hodgkin's lymphoma, splenomegaly	2	2	
PA20.1	**Plasma cell disorders-** *Core:* Multiple myeloma	-	2	
PA21.1-21.5	**Hemorrhagic disorders** *Core:* Normal hemostasis, vascular and platelet disorders, ITP, hemophilia, clotting disorders, DIC, Vitamin K deficiency	3	4	
PA22.1-22.7	**Blood banking and transfusion** *Core:* Blood group systems, compatibility testing, blood components, transfusion transmitted infections, transfusion reactions, autologous transfusion	2	4	1
PA23.1-23.3	**Clinical Pathology** *Core*: Urine analysis, Body fluids, semen analysis, thyroid function tests, renal function tests, liver function tests		12	
PA24.1-24.7	**Gastrointestinal tract:-** *Core*: Etiology, pathogenesis, pathology, morphology and clinical features of: oral cancer,	5	4	

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	138 hours	12 hours
	peptic ulcer disease, polyp, carcinoma stomach, tubercular intestine, inflammatory bowel disease, carcinoma colon			
PA25.1-25.6	**Hepatobiliary system:** *Core*: Bilirubin metabolism, etiopathogenesis and classification of jaundice, hepatic failure, pathology, complications, consequences and laboratory diagnosis of viral hepatitis; pathophysiology of alcoholic liver disease and cirrhosis; portal hypertension; hepatocellular carcinoma Interpretation of liver function tests; Serology panel in viral hepatitis (small group)	5	6	
PA26.1-26.7	**Respiratory system:** *Core*: Etiopathogenesis, morphology, and complications of: pneumonia, lung abscess, chronic obstructive airway disease, bronchiectasis, tuberculosis, occupational lung disease, lung tumours, *Non-core*: pleural tumours, mesothelioma	4	4	
PA27.1-27.10	**Cardiovascular system:** *Core*: Arteriosclerosis, aneurysm, heart failure, ischemic heart disease, laboratory diagnosis of acute coronary syndrome, rheumatic fever and heart disease, infective endocarditis, pericarditis, pericardial effusion, *Non-core*: cardiomyopathies,	5	6	1
PA28.1-28.16	**Urinary tract** *Core*: Histology of kidney, clinical syndromes, acute renal failure, chronic renal failure, acute glomerulonephritis, glomerular manifestations in systemic disease, diseases of tubular interstitium, acute tubular necrosis, acute and chronic pyelonephritis, reflux nephropathy, vascular diseases of kidney, cystic diseases of kidney, urinary calculi and obstructive uropathy, renal tumours *Non-core*: thrombotic angiopathies, urothelial tumours	6	4	2
PA29.1-29.5	**Male genital tract:** *Core*: Testicular tumours, carcinoma penis, benign prostatic hyperplasia, carcinoma prostate, *Non-core*: prostatitis	1	2	
PA30.1-30.9	**Female genital tract:** *Core*: Pathogenesis, etiology, pathology, diagnosis, and progression of: carcinoma cervix, carcinoma endometrium, leiomyoma, leiomyosarcoma, ovarian tumours, gestational trophoblastic neoplasms, *Non-core*: cervicitis, endometriosis, adenomyosis, endometrial hyperplasia	1	6	2
PA31.1-31.4	**Breast-** *Core*: Benign breast disease, carcinoma breast, *Non-core*: gynecomastia	1	2	
PA32.1-32.9	**Endocrine system** *Core*: etiology, pathogenesis, pathology and iodine dependency of: goiters, thyrotoxicosis, hyperthyroidism,	4	4	2

Competency Nos.	Topics & Subtopics	Lectures	Small group teaching	SDL
		80 hours	**138 hours**	**12 hours**
	hypothyroidism; epidemiology, etiopathogenesis, pathology, laboratory diagnosis, complications of diabetes mellitus *Non-core*: hyperparathyroidism, pancreatic cancer, adrenal insufficiency, Cushing syndrome, adrenal neoplasms			
PA33.1-33.5	**Bone and soft tissue** *Core:* Osteomyelitis, bone tumours, soft tissue tumors *Non-core*: Rheumatoid arthritis, Paget's disease of bone	1	4	1
PA34.1-34.4	**Skin** *Core*: Squamous cell carcinoma, basal cell carcinoma *Non-core*: Nevus, melanoma,	1	4	
PA35.1-35.3	**Central nervous system** *Core:* CSF findings in meningitis, CNS tumours	2	4	
PA36.1	**Eye-** *Non-core*: Retinoblastoma			1
AETCOM 2.4	**Working in a health care team**		2	
AETCOM 2.8	**What does it mean to be family member of a sick patient?**		2	

Subject: Pathology

LIST OF PRACTICALS

GENERAL PATHOLOGY

1. Histological techniques, tissue processing, microscopy
2. Intracellular accumulations, calcification
3. Cellular adaptations
4. Disorders of pigment metabolism
5. Amyloidosis
6. Acute inflammation
7. Chronic inflammation and repair
8. Tuberculosis and leprosy
9. Hemodynamic disturbances
10. Neoplasia
11. Infections and infestations

HEMATOLOGY

1. Collection of specimens, anticoagulants, normal hematopoiesis
2. Hemoglobin estimation: Interpretation of report
3. Hematocrit and Erythrocyte sedimentation rate: Interpretation of report
4. Complete blood count: Interpretation of report (without flags) from automated cell counter
5. Preparation of peripheral smear and performing differential leukocyte count, interpretation of peripheral smear
6. Investigations of anemia
7. Investigations of leukemia
8. Plasma cell dyscrasias
9. Investigation of bleeding and clotting disorders
10. Blood banking: Performing blood grouping and interpretation of results

SYSTEMIC PATHOLOGY

1. Lymphoma
2. Splenomegaly
3. Gastrointestinal tract: Ulcers
4. Intestinal polyp and carcinoma intestine
5. Cirrhosis and hepatocellular carcinoma
6. Pneumonia, bronchiectasis
7. Pulmonary tuberculosis and bronchogenic carcinoma
8. Atherosclerosis
9. Left ventricular hypertrophy, myocardial infarction, lab diagnosis of MI
10. Rheumatic heart disease and infective endocarditis
11. Chronic contracted kidney, glomerulonephritis, pyelonephritis
12. Urinary calculi, Renal cell carcinoma,
13. Male genital tract
14. Female genital tract: Carcinoma cervix, Carcinoma endometrium
15. Leiomyoma, Ovarian tumours
16. Gestational trophoblastic disease
17. Breast
18. Thyroid
19. Bone and soft tissue tumours
20. Skin
21. CNS tumours

CLINICAL PATHOLOGY

1. Urine analysis: Interpretation of physical, chemical and microscopic examination results
2. Semen analysis: Lecture demonstration, interpretation of report
3. Basic cytological techniques: FNAC and exfoliative cytology (Lecture demonstration)
4. CSF examination: Lecture demonstration and interpretation of reports
5. Body fluids: Interpretation of serous effusion reports
6. Interpretation of kidney function tests
7. Investigations in jaundice
8. Investigations in diabetes mellitus

AUTOPSY

Indications and technique, autopsy findings in common conditions like myocardial infarction, cirrhosis, portal hypertension, bronchogenic carcinoma, miliary tuberculosis, renal cell carcinoma etc.

Suggested LIST OF SPECIMENS

1. Fatty liver
2. Vesicular mole (hydropic change)
3. Cardiac hypertrophy
4. Kidney- atrophy
5. Large white kidney-amyloidosis
6. Anthracosis
7. Hemochromatosis- Prussian blue reaction
8. Acute appendicitis
9. Serofibrinous pericarditis
10. Abscess- lung/ liver
11. Tubercular lymph node- caseation, matted lymph nodes
12. CVC Liver
13. Splenic infarct
14. Renal infarct
15. Myocardial infarction
16. Leiomyoma
17. Squamous papilloma
18. Hemangioma- Liver
19. Intestinal polyp
20. Squamous cell carcinoma-skin/cervix/penis
21. Adenocarcinoma- intestine
22. Melanoma
23. Enlarged lymph node: Hodgkin's disease
24. Benign ulcer-Peptic ulcer
25. Tubercular intestine
26. Amebic ulcer
27. Malignant ulcer- Carcinoma stomach
28. Cirrhosis
29. Hepatocellular carcinoma
30. Pulmonary tuberculosis
31. Miliary tuberculosis
32. Rheumatic heart disease mitral stenosis
33. Small contracted kidney
34. Renal cell carcinoma
35. Hydronephrosis
36. Urinary calculi
37. Wilm's tumour

38. Carcinoma penis
39. Seminoma
40. Carcinoma cervix
41. Carcinoma endometrium
42. Dermoid cyst
43. Ovarian cystadenoma
44. Leiomyoma
45. Carcinoma breast
46. Goitre
47. Solitary thyroid nodule
48. Giant cell tumour
49. Fibroadenoma of breast
50. Lipoma
51. Metastatic (Liver/Lung)
52. Fat necrosis
53. Meningioma

LIST OF SLIDES

1. Cloudy swelling-kidney
2. Fatty liver
3. Hyaline change in leiomyoma
4. Benign prostatic hyperplasia
5. Squamous metaplasia
6. Calcification
7. Amyloidosis- kidney
8. Nevus
9. Anthracosis
10. Acute appendicitis
11. Acute pyogenic meningitis
12. Tubercular lymphadenitis (Caseous necrosis, granuloma)
13. Tuberculoid leprosy
14. Lepromatous leprosy
15. Pulmonary edema
16. CVC lung
17. CVC liver
18. Thrombus
19. Renal infarct
20. Myocardial infarction
21. Capillary hemangioma
22. Squamous papilloma
23. Squamous cell carcinoma
24. Adenocarcinoma
25. Actinomycosis
26. Rhinosporidiosis
27. Cysticercosis
28. PS-Malaria
29. Eosinophilia
30. Neutrophilia
31. Microcytic anemia
32. Macrocytic anemia
33. Sickle cell anemia
34. Acute leukemia

35. Chronic myeloid leukemia
36. Hodgkin's disease
37. Peptic ulcer
38. Tubercular intestine
39. Adenocarcinoma intestine
40. Cirrhosis
41. Lobar pneumonia
42. Bronchopneumonia
43. Pulmonary tuberculosis
44. Atherosclerosis
45. Myocardial infarction
46. Crescentic glomerulonephritis
47. Chronic pyelonephritis
48. Renal cell carcinoma
49. Benign prostatic hyperplasia
50. Seminoma
51. Fibroadenoma
52. Carcinoma breast
53. Colloid goiter
54. Papillary carcinoma thyroid
55. Basal cell carcinoma
56. Melanoma
57. Lipoma
58. Osteogenic sarcoma
59. Giant cell tumour

CASE-BASED LEARNING

1. Microcytic anemia
2. Macrocytic anemia
3. Hemolytic anemia
4. Multiple myeloma
5. Hepatitis
6. Obstructive jaundice
7. Hemolytic jaundice
8. Nephrotic syndrome
9. Meningitis

CHARTS

1. Interpretation of microcytic anemia
2. Interpretation of macrocytic anemia
3. Interpretation of hemolytic anemia
4. Interpretation of acute leukemia
5. Interpretation of chronic leukemia
6. Interpretation of multiple myeloma
7. Interpretation of bleeding disorder
8. Interpretation of clotting disorder
9. Interpretation of Liver disorders
10. Interpretation of Renal disorders
11. Interpretation of Thyroid disorders
12. Interpretation of acute myocardial infarction
13. Pyogenic meningitis
14. Tubercular meningitis
15. Viral meningitis
16. Diabetes mellitus

Paper wise distribution of topics for Prelim & MUHS Annual Examination
Year: Second MBBS
Subject: Pathology

Paper	Section	Topics
I	A	**Topics of the paper I**
		General Pathology: 1. Cell injury and adaptation 2. Amyloidosis 3. Inflammation and repair 4. Tuberculosis and leprosy 5. Hemodynamic disturbances 6. Immunopathology 7. Neoplasia 8. Infections and infestations 9. Basic diagnostic cytology 10. Histological techniques, tissue processing 11. Genetic and pediatric diseases 12. Environmental and nutritional diseases
		Hematology 1. Introduction to hematology 2. Microcytic anemia 3. Macrocytic anemia 4. Hemolytic anemia 5. Aplastic anemia 6. Leukocyte disorder 7. Lymph node and spleen 8. Plasma cell disorders 9. Hemorrhagic disorders 10. Blood banking and transfusion medicine
		AETCOM 2.4 and 2.8
II	A	**Topics of the paper II**
		Systemic Pathology 1. Gastrointestinal tract 2. Hepatobiliary system 3. Respiratory system 4. Cardiovascular system 5. Urinary tract 6. Male genital tract 7. Female genital tract 8. Breast 9. Endocrine system 10. Bone and soft tissue 11. Skin 12. Central nervous system
		Clinical Pathology 1. Urine analysis 2. Body fluid analysis 3. CSF analysis 4. Liver function test 5. Renal function test 6. Diabetes mellitus 7. Thyroid function test

Second MBBS
Internal Assessment
Subject: Pathology
Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase	IA – 1 -Exam (After 3 months , Jan)			IA – 2 -Exam (After 7 months, May)			Prelims (July)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical	Total Marks
Second MBBS	100	50	150	100	50	150	Paper 1 -100 Paper 2 -100	100	300

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 3 internal assessment examinations in Pathology.
2. The suggested patterns of question paper for first two internal assessment theory examinations can be similar to any of the two papers for final examination. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 40 (theory) + 40 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

Phase II	Theory	Practical
IA 1	**100**	**50**
IA 2	**100**	**50**
Prelim	**200**	**100**
Total	**400**	**200**
Conversion out of	**40**	**40**
Conversion formula	**Total marks in 3 IA theory examinations /10**	**Total marks in 3 IA Practical examinations /5**
Eligibility criteria after conversion	**16**	**16**
	Combined theory + Practical = 40	

4. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

5. Students 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 order to be eligible for appearing at the final University examination of that subject.
6. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

7. Remedial measures

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically.
ii) Extra classes for such students may be arranged. If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination (pattern as per final examination)	**200**	**100**
Conversion out of	**40**	**40**
Conversion formula	**Marks in remedial theory examinations /5**	**Marks in remedial Practical examinations /2.5**
Eligibility criteria after conversion	**16**	**16**
	Combined theory + Practical = 40	

B. <u>Remedial measures for absent students:</u>

If any of the students is absent for any of the 3 IA examinations due to any reasons, following measures shall be taken.

i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.

iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Second MBBS Practical Mark's Structure

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: Pathology (I.A. 1)											
Practical							Oral/Viva				Total
Seat No.											
	OSPE	PS/DLC	CBC report interpretation	Blood group	Histopathology slide	Total	Gross specimen General Pathology	Hematology		Log book	Practical & Oral
Max. Marks	10	5	5	5	5	30	7	8	15	5	50

Subject: Pathology (I.A. 2)									
Practical					Oral/Viva				Total
Seat No.									Practical & Oral
	OSPE	Urine report interpretation	Histopathology slide	Total	Gross specimen Systemic Pathology	Clinical pathology	Total	Log book	Total
Max. Marks	20	5	5	30	7	8	15	5	50

Subject: Pathology Prelim Examination

	Practical								Oral/Viva			
Seat No.											Total	Practical & Oral
	OSPE	PS/DLC	Urine interpretation	CBC report interpretation	Blood group	Histopathology slide	Logbook	Total	Gross specimens	Clinical and hematology	Total	Total (G +)
Max. Marks	32	10	10	5	5	8	10	80	10	10	20	100

Subject: Pathology M.U.H.S. Final Exam.

	Practical							Oral/Viva			
Seat No.							Total			Total	Practical & Oral
	OSPE	PS/DLC	Urine interpretation	CBC report interpretation	Blood group	Histopathology slide		Gross specimens	Clinical and hematology	Total	Total (G + J)
	A	B	C	D	E	F	G	H	I	J	K
Max. Marks	32	10	10	5	5	8	70	15	15	30	100

For Urine examination

Students are not expected to perform urine examination, but to interpret results. Clinical cases with urinary findings may be given to them for interpretation.

Suggested OSPE stations

1. Clinical chart interpretation (Clinical Pathology) - 5 marks
2. Clinical chart interpretation (Clinical Pathology) - 5 marks
3. Clinical chart interpretation (CSF) - 5 marks
4. Clinical chart interpretation (Hematology)- 5 marks
5. Slides (3)- Hematology, benign, inflammatory- 6 marks
6. Specimens (3)- 6 marks

Subject: Pathology

LIST OF PRACTICALS

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1. Histological techniques, tissue processing, microscopy
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5. Amyloidosis
6. Acute inflammation
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HEMATOLOGY

1. Collection of specimens, anticoagulants, normal hematopoiesis
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SYSTEMIC PATHOLOGY

1. Lymphoma
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12. Urinary calculi, Renal cell carcinoma,
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14. Female genital tract: Carcinoma cervix, Carcinoma endometrium
15. Leiomyoma, Ovarian tumours
16. Gestational trophoblastic disease
17. Breast
18. Thyroid
19. Bone and soft tissue tumours
20. Skin
21. CNS tumours

CLINICAL PATHOLOGY

1. Urine analysis: Interpretation of physical, chemical and microscopic examination results
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7. Investigations in jaundice
8. Investigations in diabetes mellitus

AUTOPSY

Indications and techniques, autopsy findings in common conditions like myocardial infarction, cirrhosis, portal hypertension, bronchogenic carcinoma, miliary tuberculosis, renal cell carcinoma etc.

LIST OF SPECIMENS

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12. CVC Liver
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14. Renal infarct
15. Myocardial infarction
16. Leiomyoma
17. Squamous papilloma
18. Hemangioma- Liver
19. Intestinal polyp
20. Squamous cell carcinoma-skin/cervix/penis
21. Adenocarcinoma- intestine
22. Melanoma
23. Enlarged lymph node: Hodgkin’s disease
24. Benign ulcer-Peptic ulcer
25. Tubercular intestine
26. Amebic ulcer
27. Malignant ulcer- Carcinoma stomach
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29. Hepatocellular carcinoma
30. Pulmonary tuberculosis
31. Miliary tuberculosis
32. Bronchectasis
33. Bronchogenic carcinoma
34. Atherosclerosis
35. Myocardial infarction

36. Small contracted kidney
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45. Dermoid cyst
46. Ovarian cystadenoma
47. Leiomyoma
48. Carcinoma breast
49. Goitre
50. Solitary thyroid nodule
51. Giant cell tumour
52. Fibroadenoma of breast
53. Lipoma
54. Metastasis of Liver/Lung
55. Fat necrosis
56. Meningioma

LIST OF SLIDES

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27. PS-Malaria

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38. Adenocarcinoma intestine
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41. Bronchopneumonia
42. Pulmonary tuberculosis
43. Atherosclerosis
44. Myocardial infarction
45. Crescentic glomerulonephritis
46. Chronic pyelonephritis
47. Renal cell carcinoma
48. Benign prostatic hyperplasia
49. Seminoma
50. Fibroadenoma
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53. Papillary carcinoma thyroid
54. Basal cell carcinoma
55. Melanoma
56. Lipoma
57. Osteogenic sarcoma
58. Giant cell tumour

CASE-BASED LEARNING

1. Microcytic anemia
2. Macrocytic anemia
3. Hemolytic anemia
4. Multiple myeloma
5. Hepatitis
6. Obstructive jaundice
7. Hemolytic jaundice
8. Nephrotic syndrome
9. Meningitis

CHARTS

1. Interpretation of microcytic anemia
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8. Interpretation of clotting disorder
9. Interpretation of Liver disorders
10. Interpretation of Renal disorders
11. Interpretation of Thyroid disorders
12. Interpretation of acute myocardial infarction
13. Pyogenic meningitis
14. Tubercular meningitis
15. Viral meningitis
16. Diabetes mellitus

f. Books recommended:

a) Text book of Pathology by Robbins
b) Text book of General Pathology Part I & II by Bhende and Deodhare c) Clinical Pathology by Talib
d) Text book of Pathology by Harsh Mohan e) Text book of Pathology by Muir
f) Haematology De Gruchi
g) IAPM text book of Pathology

Reference books:

a) Anderson's text book of Pathology Vol I & II
b) Oxford text book of Pathology Vol. I, II & III
c) Pathology by Rubin and Farber
d) Pathologic basis of Disease Robbins

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year	:	**Second MBBS** *(applicable w.e.f. September 2021 & onwards examinations)*				2. Subject Code	:
3. Subject (PSP)	:	**PATHOLOGY**					
(TT)	:						
4. Paper :	:	**I**	5. Total Marks : **100**	6. Total Time : 3 Hrs.		7. Remu. (Rs)	: Rs. 300/-
						8. Remu. (Rs)	: Rs. 350/-
9. Web Pattern	: [ ]	10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]	12. Web Old QP	: [ ]

Instructions:

SECTION "A" MCQ

1) *Put in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each. At least 5 should be scenario-based MCQ) (20 x1=20)

a)	b)	c)	d)	e)	f)	g)	h)	i)	j)
k)	l)	m)	n)	o)	p)	q)	r)	s)	t)

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

2. SAQ - AETCOM Module (2.4 and 2.8) (7x1=7)

a)

3. Short Answer Questions (Any 3 out of 4) (7x3=21)

a) b) c) d)

4. Long Answer Questions (Structured) (12x1=12)

a)

5 Short answer questions (Any 4 out of 5) (7x4=28)

a) b) c) d) e)

6 Long Answer Questions (Structured) (12x1=12)

a)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year : **Second MBBS** *(applicable w.e.f. September 2021 & onwards examinations)*						2. Subject Code :	
3. Subject (PSP) : **PATHOLOGY**							
(TT) :							
4. Paper : : **II**	5. Total Marks : **100**		6. Total Time : 3 Hrs.			7. Remu. (Rs) :	Rs. 300/-
						8. Remu. (Rs) :	Rs. 350/-
9. Web Pattern : [ ]	10. Web Skeleton : [ ]		11. Web Syllabus : [ ]			12. Web Old QP :	[ ]

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SECTION "A" MCQ

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1. Multiple Choice Questions (Total 20 MCQ of One mark each. At least 5 should be scenario-based MCQ) (20 x1=20)

a)	b)	c)	d)	e)	f)	g)	h)	i)	j)
k)	l)	m)	n)	o)	p)	q)	r)	s)	t)

SECTION "B" & "C"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

2. Short Answer Questions (Any 4 out of 5) (7x4=28)

a) b) c) d) e)

3. Long Answer Question Structured (12x1=12)

a)

4 Short answer question (Any 4out of 5) (7x4=28)

b) b) c) d) e)

(12x1=12)

5 Long Answer Questions (Scenario Based)

a)

Competency Based Medical Education

Year: Second MBBS

Subject: *Pathology Learning Resource Material*

Books recommended:

a)Text book of Pathology by Robbins
b)Text book of General Pathology Part I & II by Bhende and Deodhare
c)Clinical Pathology by Talib
d)Text book of Pathology by Harsh Mohan
e)Text book of Pathology by Muir
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PATHOLOGY LOGBOOK FOR PHASE SECOND MBBS STUDENTS AS PER COMPETENCY BASED CURRICULUM

Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize **"Health for all"** as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching-learning strategies for the same. With this goal in mind, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency based curriculum.

Name of the College

_____

Admission Year: _____

CERTIFICATE

This is to certify that,

Mr/Ms._____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for Phase II MBBS Competency Based Curriculum in the subject of Pathology.

Date: ___/___/_____

Place: _____

Teacher Incharge

Professor and Head
Department of Pathology

Instructions

1. This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II MBBS students in the subject of Pathology.
2. Students are instructed to keep their logbook entries up to date.
3. Students also have to write reflections on AETCOM Module 2.4 and 2.8)
   Reflections should be structured using the following guiding questions:
   - What happened? (What did you learn from this experience)
   - So what? (What are the applications of this learning)
   - What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)
4. The logbook assessment will be based on multiple factors like
   - Attendance
   - Active participation in the sessions
   - Timely completions
   - Quality of write up of reflections
   - Overall presentation

CONTENTS

S.No	Topic	Signature of the teacher	Remarks

S.No	Topic	Signature of the teacher	Remarks

S.No	Topic	Signature of the teacher	Remarks

ASSESSMENT OF LOG BOOK

Sr.No	Description	Maximum Marks	Marks obtained	Signature of Teacher
1	**Completion of Journal- I term**	5		
2	**Completion of Journal- II term**	5		
3	**Performance in case based learning**	3		
4	**Participation in seminars, research projects, quiz etc**	3		
5	**Reflections on AETCOM Module** *** 2.4 , 2.8**	2		
6	**Attendance Records**	2		
7	**Total marks obtained for log book**	20		

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

The following skills have been performed by the student and are certified by the teacher as follows:

		Date	Teacher's signature
1.	Preparation of peripheral smear		
2.	Interpretation of liver function tests and viral serology panel		
3	Interpretation of CSF in meningitis		

PRACTICAL TOPICS IN PATHOLOGY

Students are expected to write briefly about the topics and draw labelled diagrams of relevant slides in their journal, and get it assessed from their teacher.

GENERAL PATHOLOGY

1. Histological techniques, tissue processing, microscopy
2. Intracellular accumulations, calcification
3. Cellular adaptations
4. Disorders of pigment metabolism
5. Amyloidosis
6. Acute inflammation
7. Chronic inflammation and repair
8. Tuberculosis and leprosy
9. Hemodynamic disturbances
10. Neoplasia
11. Infections and infestations

HEMATOLOGY

1. Collection of specimens, anticoagulants, normal hematopoiesis
2. Hemoglobin estimation: Interpretation of report
3. Hematocrit and Erythrocyte sedimentation rate: Interpretation of report
4. Complete blood count: Interpretation of report (without flags) from automated cell counter
5. Preparation of peripheral smear and performing differential leukocyte count, interpretation of peripheral smear
6. Investigation of anemia
7. Investigation of leukemia
8. Plasma cell dyscrasia
9. Investigation of bleeding and clotting disorders
10. Blood banking: Performing blood grouping and interpretation of results

SYSTEMIC PATHOLOGY

1. Lymphoma
2. Splenomegaly
3. Gastrointestinal tract: Ulcers
4. Intestinal polyp and carcinoma intestine
5. Cirrhosis and hepatocellular carcinoma
6. Pneumonia, bronchiectasis
7. Pulmonary tuberculosis and bronchogenic carcinoma
8. Atherosclerosis
9. Left ventricular hypertrophy, myocardial infarction, lab diagnosis of MI
10. Rheumatic heart disease and infective endocarditis
11. Chronic contracted kidney, glomerulonephritis, pyelonephritis
12. Urinary calculi, Renal cell carcinoma,
13. Male genital tract
14. Female genital tract: Carcinoma cervix, Carcinoma endometrium
15. Leiomyoma, Ovarian tumours
16. Gestational trophoblastic disease
17. Breast
18. Thyroid

19. Bone and soft tissue tumours
20. Skin
21. CNS tumours

CLINICAL PATHOLOGY

1. Urine analysis: Interpretation of physical, chemical and microscopic examination results
2. Semen analysis: Lecture demonstration, interpretation of report
3. Basic cytological techniques: FNAC and exfoliative cytology (Lecture demonstration)
4. CSF examination: Lecture demonstration and interpretation of reports
5. Body fluids: Interpretation of serous effusion reports
6. Interpretation of kidney function tests
7. Investigations in jaundice
8. Investigations in diabetes mellitus

AUTOPSY

Indications and techniques, autopsy findings in common conditions like myocardial infarction, cirrhosis, portal hypertension, bronchogenic carcinoma, miliary tuberculosis, renal cell carcinoma etc.

Reflection on AETCOM 2.4

Topic: Working in a health care team **Date:**

Signature of Teacher-in- charge

Reflection on AETCOM 2.8

Topic: What does it mean to be a family member of a sick patient? Date:

Signature of Teacher-in- charge

Participation in Seminars, Research Projects, Quiz

S.No	Activity	Date	Signature of Teacher

Signature of Teacher-in- charge

Details of attending extra classes [For poor attendance (if any)]

S.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Course Content

Second MBBS (from October 2020) Subject:

PHARMACOLOGY Theory / Practical

Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. (Vol. 1; page nos. 136-159)

1. Total Teaching hours : **230**
2. A. Lectures(hours):**80** B. Self directed learning (hours) :- **12**
   C. Clinical Postings (Hours): NA
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**: 138**

Competency Nos.	Topics & Subtopics
PH1.1	Introduction to Pharmacology
PH1.2	
PH1.3	
PH1.9	
PH1.11	Routes of drug administration
PH1.4	Pharmacokinetics – Absorption, Distribution, Metabolism, Excretion
PH1.5	Pharmacodynamics
PH1.6	Adverse drug reactions –Types, mechanisms and precautions
PH1.7	
PH1.52	Principles of management of Poisoning
PH1.8	Drug interactions- Mechanisms and clinical relevance
PH1.59	Essential medicines, Fixed dose combinations Over the counter drugs Herbal medicines
PH1.60	Pharmacogenomics, Pharmacoeconomics
PH1.63	Drug Regulations
PH1.64	Drug development, Good Clinical Practice

Competency Nos.	Topics & Subtopics
PH1.10	Prescription writing
PH1.12	Factors modifying drug dose- Dose calculation

PH1.13	Pharmacology of Adrenergic drugs, Pharmacology of Anti adrenergic drugs
PH1.14	Pharmacology of Cholinergic drugs, Pharmacology of Anticholinergic drugs
PH1.15	Pharmacology of Skeletal muscle relaxants
PH1.16	Pharmacology of Histamine and antihistaminics, Pharmacology of Serotonin and drugs acting on serotonergic pathways, Pharmacotherapy of MigrainePharmacology of NSAIDSPharmacotherapy of Gout and Rheumatoid arthritis
PH1.17	Pharmacology of Local anaesthetics
PH1.18	Pharmacology of General anaesthetics and Preanesthetic drugs
PH1.19	Pharmacology of Sedatives & hypnotics Pharmacology of Antiepileptics Pharmacology of Anti depressants and anti anxiety drugs Pharmacology of Antipsychotics and anti manic drugs Pharmacology of Drugs used for neurodegenerative disorders Pharmacology of Opioids
PH1.20	Pharmacology of Alcohol and alcohol poisoning
PH1.21	
PH1.22	Pharmacology of drug dependence, drug abuse and Deaddiction
PH1.23	
PH1.24	Pharmacology of Diuretics and antidiuretics
PH1.25	Pharmacology of coagulants and anticoagulants Pharmacology of antiplatelets Pharmacology of thrombolytics and antifibrinolytics Pharmacology of plasma expanders
PH1.26	Pharmacology of Renin Angiotensin-Aldosterone system
PH1.27	Pharmacology of calcium channel blockers Pharmacology of other vasodilators and sympatholytics Pharmacotherapy of Hypertension, Pharmacotherapy of Shock

Competency Nos.	Topics & Subtopics
PH1.28	Pharmacology of Antianginal drugs Pharmacotherapy of IHD Pharmacology of Drugs for PVD
PH1.29	Pharmacology of Drugs used in CCF
PH1.30	Pharmacology of Antiarrhythmics
PH1.31	Pharmacology of Drugs for dyslipidemia
PH1.32	Pharmacology of Drugs for bronchial asthma and COPD
PH1.33	Pharmacology of Drugs for cough
PH1.34	Pharmacology of Drugs for acid peptic diseases Pharmacology of Antiemetics and prokinetics Pharmacology of Drugs for diarrhea and constipation
PH1.35	Pharmacotherapy of anemias
PH1.36	Pharmacology of Antidiabetic drugs Pharmacology of Drugs for thyroid dysfunction Pharmacology of Drugs affecting calcium metabolism
PH1.37	Pharmacology of Estrogen and antiestrogens Pharmacology of Progestins and antiprogestins Pharmacology of Androgens and antiandrogens Pharmacology of Anterior Pituitary hormones and their antagonists
PH1.38	Pharmacology of Corticosteroids and antagonists
PH1.39	Pharmacology of Hormonal contraceptives
PH1.40	Pharmacotherapy of infertility and erectile dysfunction
PH1.41	Pharmacology of Oxytocics and tocolytics
PH1.42	Introduction to Chemotherapy-General principles, Pharmacology of Sulfonamides and Timethoprim Pharmacology of Fluoroquinolones, Pharmacology of Penicillin and its derivatives Pharmacology of Cephalosporins, Pharmacology of other Beta lactam antibiotics Pharmacology of Aminoglycosides, Pharmacology of Macrolides Pharmacology of Broad spectrum antibiotics, Pharmacology of newer antibacterials
PH1.43	

Competency Nos.	Topics & Subtopics
PH1.44	Pharmacology of Antitubercular drugs including MDR and XDR TB
PH1.45	
PH1.46	Pharmacology of Antileprotics

PH1.47	Pharmacology of Antimalarials Pharmacology of Antiamoebic and other Antiprotozoal drugs Pharmacology of Anthelminthics
PH1.48	Pharmacotherapy of UTI Pharmacotherapy of STD Pharmacology of Antiretroviral drugs
PH1.49	Pharmacology of Anticancer drugs
PH1.50	Pharmacology of Immunomodulators
PH1.51	Occupational and environmental toxicology
PH1.53	Pharmacology of Chelating agents
PH1.54	Vaccines and Antisera
PH1.55	National health programs
PH1.56	Geriatric and Pediatric pharmacology
PH1.57	Drugs used in skin disorders
PH1.58	Drugs used in Ocular disorders
PH1.61	Dietary supplements and Nutraceuticals
PH1.62	Antiseptics and Disinfectants
Competency Nos.	**Topics & Subtopics**
	CLINICAL PHARMACY
PH2.1	Drug dosage forms (Oral, local, parenteral)
PH2.2	ORS preparation
PH2.3	Intravenous drip setting
PH2.4	Dosage calculation
	CLINICAL PHARMACOLOGY

Competency Nos.	Topics & Subtopics
	CLINICAL PHARMACY
PH3.1	Prescription writing and communication
PH3.8	
PH5.1	
PH3.2	Critical appraisal of Prescription
PH3.3	Evaluation of Promotional Drug literature
PH3.4	Adverse drug reaction-Identification and reporting
PH3.5	Introduction to the concept of P – drugs and preparation of P-drug list
PH3.6	Interaction with a pharmaceutic representative and critical evaluation of Drug information
PH3.7	Introduction to the concept of Essential medicines
	EXPERIMENTAL PHARMACOLOGY
PH4.1	Drug administration on Maniquins
PH4.2	Study of effects of drugs on blood pressure using software
	COMMUNICATION TOPICS
PH5.2	Importance of optimal use of drug therapy, storage of medicines
PH5.3	Importance of Drug Compliance
PH5.4	
PH5.5	Problems associated with prescribing drugs with dependence liability
PH5.6	Problems associated with use of OTC drugs
PH5.7	Prescription: legal and ethical aspects
2.1	AETCOM-1
2.2	AETCOM-2
2.3	AETCOM-3

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: Second MBBS Subject: **Pharmacology**

Paper	Section	Topics
I	**A**	**MCQs on all topics of the paper I**
	B	General Pharmacology
		Autonomic Nervous system including skeletal muscle relaxants
		Cardiovascular system
		Haematology
		Gastro intestinal drugs
		Respiratory system
		AETCOM- 2.1, 2.2, 2.3 (section B one SAQ)
II	**A**	**MCQs on all topics of the paper II**
	B	Central Nervous system including general/local anaesthesia
		Endocrine system
		Chemotherapy system
		Autacoids
		MISC. TOPICS : Chelating agents, Vaccines and Antisera, ocular pharmacology, dermatological pharmacology, nutraceuticals, occupational and environmental pharmacology, toxicology)

Second MBBS Internal Assessment
Subject: Pharmacology
Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase	IA-1 - Exam (Jan)			IA – 2 -Exam (May)			Prelim (July)		
	Theory	Practical (Including 10 Marks for Journal & Log Book)	Total Marks	Theory	Practical Including 10 Marks for Journal & Log Book	Total Marks	Theory	Practical	Total Marks
Second MBBS	100	100	200	100	100	200	Paper 1 -100 Paper 2 -100	100	300

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 3 internal assessment examinations in Pharmacology.
2. The suggested patterns of question paper for first two internal assessment theory examinations can be similar to any of the two papers for final examination. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 40 (theory) + 40 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

Phase	Theory	Practical
IA 1	**100**	**100**
IA 2	**100**	**100**
Prelim	**200**	**100**
Total	**400**	**300**
Conversion out of	**40**	**40**
Conversion formula	**Total marks in 3 IA theory examinations /10**	**Total marks in 3 IA Practical examinations /7.5**
Eligibility criteria after conversion	**16**	**16**
	Combined theory + Practical = 40	

4. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

5. Students 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 order to be eligible for appearing at the final University examination of that subject.

6. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

7. **Remedial measures**

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically.
ii) Extra classes for such students may be arranged. If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	**Practical**
Remedial examination (pattern as per final examination)	**200**	**100**
Conversion out of	**40**	**40**
Conversion formula	**Marks in remedial theory examinations /5**	**Marks in remedial Practical examinations /2.5**
Eligibility criteria after conversion	**16**	**16**
	Combined theory + Practical = 40	

B. <u>Remedial measures for absent students:</u>

If any of the students is absent for any of the 3 IA examinations due to any reasons, following measures shall be taken.

i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.

iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Practical marks Distribution:

A. For I st and II nd IA examinations

1. **Journal / Logbook** - 10 Marks
2. **Viva** – **20** marks
3. **Clinical Pharmacy (20 marks)** –
    a. Dosage form- 10 marks,
    b. ORS preparation/ IV drip setting- 5 marks
    c. Dose calculation – 5 marks
4. **Clinical Pharmacology** (30 marks)-
    a. Prescription writing- 10 marks
    b. Prescription criticism and rewriting / justification of FDC – 10 marks
    c. ADR identification / ADR reporting- 5 marks
    d. P- drug list- 5 marks.
5. **Experimental Pharmacology** (**10 marks**) **OSPE** –
    a. Drug administration using maniquin / drug effect using CAL software (or any other)- 10 marks
6. **Communication (10 marks) OSPE-**
    a. prescription communication **/** ethics- legal drug storage/ use of device/drug adherence-compliance/ drug dependence/OTC/ interaction with Medical representative- 10 marks

B. For Preliminary examinations

1. **Viva** – **30** marks
    a. Viva I- 15 marks
    b. Viva II- 15 marks
2. **Clinical Pharmacy (20 marks)** –
    a. Dosage form- 10 marks,
    b. ORS preparation/ IV drip setting- 5 marks
    c. Dose calculation – 5 marks
3. **Clinical Pharmacology (30 marks)-**
    a. Prescription writing- 10 marks
    b. Prescription criticism and rewriting / justification of FDC – 10 marks
    c. ADR identification / ADR reporting- 5 marks
    d. P- drug list- 5 marks.
4. **Experimental Pharmacology** (**10 marks**) **OSPE** –
    a. Drug administration using maniquin / drug effect using CAL software (or any other)- 10 marks
5. **Communication (10 marks) OSPE-**
    a. prescription communication **/** ethics- legal drug storage/ use of device/drug adherence-compliance/ drug dependence/OTC/ interaction with Medical representative- 10 marks

Second MBBS Practical Mark's Structure (I, II & Prelim Exam.)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: PHARMACOLOGY								
Practical						VIVA	Log Book/ Journal	Practical & Oral
Seat No.	Clinical Pharmacy	Clinical Pharmacology	Experimental Pharmacology	Communication	Total			
Max. Marks	20	30	10	10	**70**	20	**10**	100

Second MBBS Practical Mark's Structure

(M.U.H.S. Final Exam.)

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Subject: PHARMACOLOGY									
Practical						**Oral/Viva**			**Total**
Seat No.	**Clinical Pharmacy**	**Clinical Pharmacology**	**Experimental Pharmacology**	**Communication**	**Total**	**VIVA 1**	**VIVA 2**	**Total**	**Practical & Oral (E + H)**
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Max. Marks	20	30	10	10	**70**	15	15	**30**	100

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1. Course and Year	: **Second MBBS** *(applicable w.e.f. September 2021& onwards examinations)*					2. Subject Code	:
3. Subject (PSP)	: **Pharmacology**						
(TT)	:						
4. Paper :	: **I**	5. Total Marks	: **100**	6. Total Time	: **3** Hrs.	7. Remu. (Rs)	: Rs. 300/-
						8. Remu. (Rs)	: Rs. 350/-
9. Web Pattern	: [ ]	10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]	12. Web Old QP	: [ ]

Instructions:

SECTION "A" MCQ

1) *Put in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x1 = 20)

a)	b)	c)	d)	e)	f)	g)	h)	i)	j)
k)	l)	m)	n)	o)	p)	q)	r)	s)	t)

Instructions:

SECTION "B"

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

SECTION "B"

2. Short Answer Questions (AETCOM(2.1, 2.2, 2.3)(compulsory) (7x1=07)

   a)

3. Short Answer Questions (Answer Any 3 out of 4) (7x3=21)

   a) b) c) d)

4. Structured Long Answer Questions (Compulsory) (12x1=12)

   a)

5. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)

   a) b) c) d) e)

6. Structured Long Answer Questions (Compulsory) (12x1=12)

   a)

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
FORMAT / SKELETON OF QUESTION PAPER

1.	Course and Year	:	**Second MBBS** *(applicable w.e.f. September 2021& onwards examinations)*						2. Subject Code	:	
3.	Subject (PSP)	:	**Pharmacology**								
	(TT)	:									
4.	Paper :	:	**II**	5. Total Marks	: **100**	6. Total Time	: **3** Hrs.		7. Remu. (Rs)	:	Rs. 300/-
									8. Remu. (Rs)	:	Rs. 350/-
9.	Web Pattern	: [ ]		10. Web Skeleton	: [ ]	11. Web Syllabus	: [ ]		12. Web Old QP	:	[ ]

Instructions:

SECTION "A" MCQ

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SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (20 x1 = 20)

a)	b)	c)	d)	e)	f)	g)	h)	i)	j)
k)	l)	m)	n)	o)	p)	q)	r)	s)	t)

SECTION "B"

Instructions:

1) *Use **blue/black** ball point pen only.*
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3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
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6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has been done.*
7) *Use a common answerbook for all sections.*

SECTION "B"

2. Short Answer Questions(Answer Any 4 out of5) (7x4=28)

   a) b) c) d) e)

3. Structured Long Answer Questions (**Compulsory**) (12x1=12)

   a)

4. Short Answer Questions (Answer Any 4 out of 5) (7x4=28)

   a) b) c) d) e)

5. Structured Long Answer Questions (**Compulsory**) (12x1=12)

   a)

Competency Based Medical Education

Year: Second MBBS

Subject: *Pharmacology Learning Resource Material*

***Books recommended* :**

1. Basic & Clinical Pharmacology. Katzung BG (Ed), Publisher: Prentice Hall International Ltd., London.
2. Pharmacology & Pharmacotherapeutics. Satoskar RS, Bhandarkar SD (Ed), Publisher: Popular Prakashan, Bombay.
3. Essentials of Medical Pharmacology. Tripathi KD (Ed), Jaypee Brothers, publisher:Medical Publishers (P) Ltd.
4. Clinical Pharmacology. Laurence DR, Bennet PN, Brown MJ (Ed). Publisher: Churchill Livingstone

***Reference books* :**

1. Goodman & G̀ilman s The Pharmacological Basis of Therapeutics. Hardman JG & Limbird LE (Ed), Publisher: McGraw-Hill, New York.
2. A Textbook of Clinical Pharmacology. Roger HJ, Spector RG, Trounce JR (Ed), Publisher: Hodder and Stoughton Publishers.

Maharashtra University of Health Sciences
Nashik

PHARMACOLOGY LOGBOOK For PHASE SECOND MBBS STUDENTS AS PER COMPETENCY BASED CURRICULUM

Preface

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Name of the College

_____

_____

_____

Admission Year : _____

CERTIFICATE

This is to certify that,

Mr/Ms._____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for Phase I MBBS Competency Based Curriculum in the subject of Pharmacology.

Date: ___/___/_____

Place: _____

Teacher Incharge

Professor and Head
Department of Pharmacology

Instructions

1) This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II MBBS students in the subject of Pharmacology.

2) Students are instructed to keep their logbook entries up to date.

3) Students are expected to write minimum 2 reflections on any two activities each of Clinical Pharmacology skills & Self-Directed Learning (SDL).

4) Students also have to write reflections on AETCOM Module 2.1 , 2.2, 2.3) Reflections should be structured using the following guiding questions:

- What happened? (What did you learn from this experience)
- So what? (What are the applications of this learning)
- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

5) The logbook assessment will be based on multiple factors like

- Attendance
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- Overall presentation

INDEX

Sr. No	Description	Page No's	Status Complete/ Incomplete	Signature of Teacher
1	Clinical Pharmacology Skills			
2	Self-Directed Learning, Seminars, Projects, Quizzes			
3	AETCOM Module * 2.1 , 2.2, 2.3			
4	Attendance Records			
5	Records of Internal Assessment			

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

Record of Clinical Pharmacology Skills

S.No	Skill	Setting	Correlation	Date	Signature of Teacher
1	Critical appraisal of prescription / audit				
2	Critical evaluation of promotional literature				
3	Filling and interpretation of ADR report				
4	Prepare and explain P drug list				
5	Optimised Interaction with pharmaceutical representative				
6	Prepare essential drug list for health care facility				

Reflection on Clinical Pharmacology Skills

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on Clinical Pharmacology Skills

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on Clinical Pharmacology Skills

Topic: **Date:**

Signature of Teacher-in- charge

2. Self Directed Learning, Seminars, Tutorials, Projects, Quizzes

S.No	Self Directed Learning, Seminars, Tutorials, Projects, Quizzes	Date	Signature of Teacher

Reflection on self directed learning activities

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic: **Date:**

Signature of Teacher-in- charge

3: AETCOM Module

2.1 Foundation of communication 2

2.2 Foundation of bioethics

2.3 Health care as a right

Reflection on AETCOM module

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic: **Date:**

Signature of Teacher-in- charge

SECTION 4B: Details of attending extra classes [For poor attendance (if any)]

S.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

ANNEXURE 6

COURSE CONTENT

(Total teaching hours for Otorhinolaryngology = 25+40+5 = 70)

Lectures:

MBBS phase III-

Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	Anatomy and Physiology of ear, nose, throat, head & neck				
			Lecture: 1		1
		EN 1.1 AN40.1 AN40.2 AN40.3	Describe the Anatomy & physiology of ear Describe & identify the parts, blood supply and nerve supply of external ear Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube Describe the features of internal ear	Anatomy	
			Lecture: 2		1
		EN 1.1 AN37.1 AN37.2 AN37.3	Describe the Anatomy & physiology of Nose, Throat Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply Describe location and functional anatomy of paranasal sinuses Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	Anatomy Physiology	
		PY10.13	Describe and discuss perception of smell and taste sensation		
			Lecture: 3		1
		EN 1.1 EN 1.2	Describe the Anatomy & physiology of Head and Neck Describe the pathophysiology of common diseases in Head and Neck	Anatomy	
2.	Clinical Skills				
			Lecture: 4		1
		EN 2.11 EN 2.15	Describe and identify by clinical examination malignant & pre- malignant ENT diseases Describe the national programs for prevention of deafness, cancer, noise & environmental pollution	Community Medicine	
3.	Management of diseases of ear, nose & throat				
			Lecture: 5		1
		EN4.1 EN4.6 EN4.2	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Otalgia Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Discharging ear Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of diseases of the external Ear		

			Lecture: 6		1
		EN4.3 PE28.4 EN4.5	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of ASOM Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM) Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of OME	Paediatrics	
			Lecture: 7		1
		EN4.6 EN4.7	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of CSOM Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of CSOM		
			Lecture: 8		1
		EN4.12 EN4.12 EN4.15	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Hearing loss Describe the clinical features, investigations and management principles of Sudden Sensori-neural Hearing Loss Describe the clinical features, investigations management principles of Noise Induced Hearing Loss		
			Lecture: 9		1
		EN4.18	Describe the clinical features, investigations and principles management of Facial Nerve palsy		
			Lecture: 10		1
		EN4.19 EN4.13 EN4.21 EN4.14	Describe the clinical features, investigations and principles of management of Vertigo Describe the clinical features, investigations and principles of management of Otosclerosis Describe the clinical features, investigations and principles of management of Tinnitus Describe the clinical features, investigations and management of Sudden Sensorineural Hearing Loss		
			Lecture: 11		1
		EN4.23 EN4.25	Describe the clinical features, investigations and principles of management of DNS Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of Nasal Polyps		
			Lecture: 12		1
		EN4.27 EN4.28 EN4.29 PE31.1	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Allergic Rhinitis Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Vasomotor Rhinitis Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Rhinitis Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children	Paediatrics	

			Lecture: 13		1
		EN4.30	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Epistaxis		
		EN4.31	Describe the clinical features, investigations and principles of management of trauma to the face & neck		
		EN4.32	Describe the clinical features, investigations and principles of management of nasopharyngeal Angiofibroma		
			Lecture: 14		1
		EN4.33	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of Acute & Chronic Sinusitis		
			Lecture: 15		1
		EN4.34	Describe the clinical features, investigations and principles of management of Tumors of Maxilla		
		EN4.35	Describe the clinical features, investigations and principles of management of Tumors of Nasopharynx		
			Lecture: 16		1
		EN4.36	Describe the clinical features, investigations and principles of management of diseases of the Salivary glands		
		EN4.37	Describe the clinical features, investigations and principles of management of Ludwig's angina		
		EN4.41	Describe the clinical features, investigations and principles of management of Acute & chronic abscesses in relation to Pharynx		
		EN4.38	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of dysphagia		
			Lecture: 17		1
		EN4.39	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Tonsillitis	Paediatrics	
		PE28.1	Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis		
		PE28.2	Discuss the etio-pathogenesis of Pharyngo Tonsillitis		
		PE28.3	Discuss the clinical features and management of Pharyngo Tonsillitis		
			Lecture: 18		1
		EN4.43	Describe the clinical features, investigations and principles of management of Acute & Chronic Laryngitis	Anatomy	
		EN4.44	Describe the clinical features, investigations and principles of management of Benign lesions of the vocal cord		
		EN4.45	Describe the clinical features, investigations and principles of management of Vocal cord palsy		
		AN38.3	Describe anatomical basis of recurrent laryngeal nerve injury		
			Lecture: 19		1
		EN4.46	Describe the clinical features, investigations and principles of management of Malignancy of the Larynx & Hypopharynx		
		EN4.47	Describe the clinical features, investigations and principles of management of Stridor		
			Lecture: 20		
		DE4.1	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity	Pathology	
		DE4.2	Discuss the role of etiological factors in the formation of precancerous /cancerous lesions		

		EN4.52	Describe the Clinical features, Investigations and principles of management of diseases of Oesophagus		
			Lecture: 21		1
		EN4.53 EN3.6	Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT Observe and describe the indications for and steps involved in the skills of emergency procedures in ear, nose & throat		
			Lecture: 22		1
			Revision lecture		
			Lecture: 23		1
			Revision lecture		
			Lecture: 24		1
			Revision lecture		
			Lecture: 25		1
			Revision lecture		

Small group discussions

MBBS phase III/I-

Total Teaching hours: 40 hours

SR. NO.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
	Anatomy and Physiology of ear, nose, throat, head & neck				
1.		AN40.1	Describe & identify the parts, blood supply and nerve supply of external ear		0.5 hour
2.		AN40.2	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube		1 hour
3.		AN37.1	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply		1 hour
4.		AN38.1	Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx		0.5 hour
5.		PY10.15	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing		1 hour
6.		PY10.16	Describe and discuss pathophysiology of deafness. Describe hearing tests		0.5 hour
	General Medicine				
7.		IM24.17	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly		1.5 Hours
	Paediatrics				
8.		PE28.5	Discuss the etio-pathogenesis, clinical features and management of Epiglottitis		0.5 hour
9.		PE28.6	Discuss the etio-pathogenesis, clinical features and management of Acute laryngo-tracheo-bronchitis		0.5 hour

10.		PE28.7	Discuss the etiology, clinical features and management of Stridor in children		1 hour
11.		PE28.8	Discuss the types, clinical presentation, and management of foreign body aspiration in infants and children		1 hour
	Clinical Skills				
12.		EN 2.9	Choose correctly and interpret radiological, microbiological & histological investigations relevant to the ENT disorders X Rays of mastoid, PNS, nasopharynx, neck, thorax -Routine blood investigations, Pus-bacterial culture, sensitivity, Fungal culture and KOH mount -FNAC and biopsy		1 hour 1 hour 1 hour
13.		EN2.15	Describe the national programs for prevention of deafness, cancer, noise & environmental pollution		1.5 hour
	Management of diseases of ear, nose & throat				
14.		EN4.1	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Otalgia		1 hour
15.		EN4.3	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of ASOM		1.5 hour
16.		EN4.7	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of CSOM		1.5 hours
17.		EN4.12	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Hearing loss		1.5 hour
18.		EN4.13	Describe the clinical features, investigations and principle of management of Otosclerosis		1 hour
19.		EN 4.14	Describe the clinical features, investigations and principle of management of Sudden Sensorineural Hearing Loss		1 hour

20.		EN4.15	Describe the clinical features, investigations and principle of management of Noise Induced Hearing Loss		0.5 hour
21.		EN 4.18	Describe the clinical features, investigations and principle of management of Facial Nerve palsy		1 hour
22.		EN 4.19	Describe the clinical features, investigations and principle of management of Vertigo		0.5 hour
23.		EN 4.18	Describe the clinical features, investigations and principle of management of Tinnitus		0.5 hour
24.		EN4.27	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Allergic Rhinitis		1 hour
25.		EN4.29	Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Rhinitis		1.5 hours
26.		EN 4.30	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of epistaxis		1 hour
27.		EN4.33	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Sinusitis		2 hours
28.		EN4.39	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Tonsillitis		1.5 hours
29.		EN 3.5 EN 4.10 EN 4.11	Observe and describe the indications for and the steps involved in the surgical procedures in ear, nose and throat		3 hours
30.		EN4.42	Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of hoarseness of voice		1.5 hours
31.		EN4.47	Describe the clinical features, investigations and principles of management of Stridor		1 hour
32.		EN4.49	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of		1.5 hours

			management of foreign bodies in the air & food passages		
33.		EN4.53	Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT		1 hour
	Community Medicine				
34.		CM3.1	Describe the health hazards of air, water, noise, radiation and pollution		1.5 hours

Self Directed Learning

MBBS phase III/I -

Total Teaching hours: 5 hours

Sr. No.	Competencies	SUBTOPICS	AIT	TL Methods	HOURS
1.	EN1.1	Anatomy and blood supply of Tonsil		Quiz-Poster Presentation (on topic given in groups)	5 hours
2.	EN1.2	Clinical features, diagnosis and treatment of: ASOM			
3.	EN2.4	Tuning Fork Tests			
4.	EN 3.5	Complications of tonsillectomy			
5.	EN 4.24	Septoplasty –Technique, Procedure and Complications			
6.	EN 4.5	Clinical features and management Otitis media with effusion, Myringotomy			
7.	EN 4.50	Indications and Complications of Tracheostomy			

Subject:
Otorhinolaryngology
Lectures

MBBS phase III-

Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Anatomy and Physiology of ear, nose, throat, head & neck**				
			Lecture: 1		1
		EN 1.1 AN40.1 AN40.2 AN40.3	Describe the Anatomy & physiology of ear Describe & identify the parts, blood supply and nerve supply of external ear Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube Describe the features of internal ear	Anatomy	
			Lecture: 2		1
		EN 1.1 AN37.1 AN37.2 AN37.3	Describe the Anatomy & physiology of Nose, Throat Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply Describe location and functional anatomy of paranasal sinuses Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	Anatomy Physiology	

		PY10.13	Describe and discuss perception of smell and taste sensation		
			Lecture: 3		1
		EN 1.1 EN 1.2	Describe the Anatomy & physiology of Head and Neck Describe the pathophysiology of common diseases in Head and Neck	Anatomy	
2.	**Clinical Skills**				
			Lecture: 4		1
		EN 2.11 EN 2.15	Describe and identify by clinical examination malignant & pre- malignant ENT diseases Describe the national programs for prevention of deafness, cancer, noise & environmental pollution	Community Medicine	
3.	**Management of diseases of ear, nose & throat**				
			Lecture: 5		1
		EN4.1 EN4.6 EN4.2	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Otalgia Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Discharging ear Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of diseases of the external Ear		

			Lecture: 6		1
		EN4.3 PE28.4 EN4.5	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of ASOM Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM) Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of OME	Paediatrics	
			Lecture: 7		1
		EN4.6 EN4.7	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of CSOM Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of CSOM		
			Lecture: 8		1
		EN4.12 EN4.12 EN4.15	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Hearing loss Describe the clinical features, investigations and management principles of Sudden Sensori-neural Hearing Loss Describe the clinical features, investigations management principles of Noise Induced Hearing Loss		
			Lecture: 9		1
		EN4.18	Describe the clinical features, investigations and principles management of Facial Nerve palsy		

			Lecture: 10		1
		EN4.19 EN4.13 EN4.21 EN4.14	Describe the clinical features, investigations and principles of management of Vertigo Describe the clinical features, investigations and principles of management of Otosclerosis Describe the clinical features, investigations and principles of management of Tinnitus Describe the clinical features, investigations and management of Sudden Sensorineural Hearing Loss		
			Lecture: 11		1
		EN4.23 EN4.25	Describe the clinical features, investigations and principles of management of DNS Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of Nasal Polyps		
			Lecture: 12		1
		EN4.27 EN4.28 EN4.29 PE31.1	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Allergic Rhinitis Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Vasomotor Rhinitis Elicit, document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Rhinitis Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children	Paediatrics	

			Lecture: 13		1
		EN4.30 EN4.31 EN4.32	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Epistaxis Describe the clinical features, investigations and principles of management of trauma to the face & neck Describe the clinical features, investigations and principles of management of nasopharyngeal Angiofibroma		
			Lecture: 14		1
		EN4.33	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of Acute & Chronic Sinusitis		
			Lecture: 15		1
		EN4.34 EN4.35	Describe the clinical features, investigations and principles of management of Tumors of Maxilla Describe the clinical features, investigations and principles of management of Tumors of Nasopharynx		
			Lecture: 16		1
		EN4.36 EN4.37 EN4.41 EN4.38	Describe the clinical features, investigations and principles of management of diseases of the Salivary glands Describe the clinical features, investigations and principles of management of Ludwig's angina Describe the clinical features, investigations and principles of management of Acute & chronic abscesses in relation to Pharynx Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of type of dysphagia		

			Lecture: 17		1
		EN4.39 PE28.1 PE28.2 PE28.3	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Tonsillitis Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis Discuss the etio-pathogenesis of Pharyngo Tonsillitis Discuss the clinical features and management of Pharyngo Tonsillitis	Paediatrics	
			Lecture: 18		1
		EN4.43 EN4.44 EN4.45 AN38.3	Describe the clinical features, investigations and principles of management of Acute & Chronic Laryngitis Describe the clinical features, investigations and principles of management of Benign lesions of the vocal cord Describe the clinical features, investigations and principles of management of Vocal cord palsy Describe anatomical basis of recurrent laryngeal nerve injury	Anatomy	
			Lecture: 19		1
		EN4.46 EN4.47	Describe the clinical features, investigations and principles of management of Malignancy of the Larynx & Hypopharynx Describe the clinical features, investigations and principles of management of Stridor		
			Lecture: 20		
		DE4.1 DE4.2	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity Discuss the role of etiological factors in the formation of precancerous /cancerous lesions	Pathology	

		EN4.52	Describe the Clinical features, Investigations and principles of management of diseases of Oesophagus		
			Lecture: 21		1
		EN4.53 EN3.6	Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT Observe and describe the indications for and steps involved in the skills of emergency procedures in ear, nose & throat		
			Lecture: 22		1
			Revision lecture		
			Lecture: 23		1
			Revision lecture		
			Lecture: 24		1
			Revision lecture		
			Lecture: 25		1
			Revision lecture		

Internal Assessment

Subject – Otorhinolaryngology

Applicable w.e.f batches admitted from 2019 and onwards

Phase		
	Theory	Practical
Second MBBS	-	EOP Practical Examination may be conducted. However, these marks shall not be added to the Internal Assessment.

3rd Year (III MBBS, PART I)						
Phase	**I-Exam (March)**			**II-Exam Prelim (August)**		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/I MBBS	50	50	100	100	100	200

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 2 internal assessment examinations in Otorhinolaryngology including Prelim.

2. The suggested pattern of question paper for internal assessment internal examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.

3. Internal assessment marks for theory and practical will be converted to out of 25 (theory) + 25 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	**-**	**-**
Phase III/I	**150**	**150**
Total	**150**	**150**
Conversion out of	**25**	**25**
Conversion formula	**Total marks in 2 IA theory examinations /6**	**Total marks in 2 IA Practical examinations /6**
Eligibility criteria after conversion	**10**	**10**
	Combined theory + Practical = 25	

1. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

2. Students 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 order to be eligible for appearing at the final University examination of that subject.
3. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

4. Remedial measures

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be arranged.

ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.

iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. The marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	**Practical**
Remedial examination	**100**	**100**
Conversion out of	**25**	**25**
Conversion formula	**Marks in remedial theory examinations /4**	**Marks in remedial Practical examinations /4**
Eligibility criteria after conversion	**10**	**10**
	Combined theory + Practical = 25	

B. <u>Remedial measures for absent students:</u>

If any of the students is absent for any of the 2 IA examinations due to any reasons, following measures shall be taken.

i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.

iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Format for Practical Examinations

Otorhinolaryngology

Internal Assessment Practical

Seat No.				Table viva				Practical Total
	Case	OSCE 1	OSCE 2	Surgical Pathology Radiology	Instruments and Surgical Procedure	Journal	Log Book	
Max. Marks	20	5	5	5	5	5	5	50

OSCE stations checklists to be prepared so as to give more weightage to crucial steps, if skills are small two or more skills may be included in same station

OSCE stations to include any of these – Clinical skills (case/audiology), Certifiable skils, AETCOM skills

Prelims Practical

Subject: Otorhinolaryngology Practical									
Seat No.						Table Viva			Practical Total
	Case	OSCE 1 (Clinical skills)	OSCE 2 (Clinical skills)	OSCE 3 (Certifiable skills)	OSCE 4 (AETCOM skills)	Surgical Pathology Radiology	Instruments and Surgical Procedure	Journal &log book	
Max. Marks	30	10	10	10	10	10	10	10	100

MUHS Final Practical

Subject: Otorhinolaryngology Practical								
Seat No.						**Table Viva**		**Practical Total**
	Case	**OSCE 1 (Clinical skills)**	**OSCE 2 (Clinical skills)**	**OSCE 3 (Certifiable skills)**	**OSCE 4 (AETCOM skills)**	**Surgical Pathology Radiology**	**Instruments and Surgical Procedure**	
Max. Marks	**30**	**10**	**10**	**10**	**10**	**15**	**15**	**100**

Internal Assessment Theory Examination (I)

Otorhinolaryngology

Instructions:

SECTION "A" MCQ

1) *Put ☒ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10 Marks)

1. Multiple Choice Questions (Total 10 MCQ of One mark each) (1x10=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Use a common answer book for all sections.*

SECTION "B" (40 Marks)

2. Long Answer Questions structured clinical questions (15 x1=15)

a)

3.Short Answer Questions (Any 5 out of 6),(including 1 on AETCOM) (5 x 5=25)

a) b) c) d) e) f)

MUHS Final Theory Examination

Otorhinolaryngology

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

SECTION "A" MCQ

Instructions:

5) Put ☒ in the appropriate box below the question number once only.
6) Use blue ball point pen only.
*7) Each question carries **One mark.***
8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (1x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*
6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions (Any 2 out of 3) structured clinical questions (15 x 2=30)

a) b) c)

3.Short Answer Questions (All 3),(including 1 on AETCOM) (5 x 3=15)

a) b) c)

SECTION C (40 Marks)

4 Long answer questions (15x1=15)

a)

5 Short answer questions(any 4 out of 5) (Clinical Reasoning) (5x4=20)

a) b) c) d) e)

. Section wise distribution of topics for Prelim & MUHS Annual Examination

Year: **III-I MBBS** Subject: **_Otorhinolaryngology**

Paper	Section	Topics
1	A	MCQs on all topics of Otorhinolaryngology Basic Science (2), Otology (6), Rhinology (6), Head Neck Laryngology (6)
	B Basic Sciences, Recent Advances, Otology	Anatomy and Physiology of Ear, Nose, Throat & Head and Neck; Recent Advances; Audiology and Hearing loss; Vestibular System; Diseases of External Ear and Middle Ear; Eustachian Tube and its disorder; Cholesteatoma, Chronic Otitis media and Complications; Otosclerosis; Facial Nerve and its Disorder; Meniere's Disease; Tumours of External Ear, Middle Ear and Mastoid; Deaf Child & Rehabilitation of Hearing Impaired
	C Rhinology, Laryngology, Head and Neck	Diseases of External Nose; Nasal Septum and its diseases Acute and Chronic Rhinitis and Sinusitis and its complications; Allergic, Vasomotor Rhinitis and NARES; Nasal Polypi; Epistaxis; Facial Trauma; Granulomatous Diseases of Nose; Neoplasm of Nasal Cavity and PNS; Disorders and Tumours of Oral Cavity and Salivary Gland; Acute and Chronic Tonsilitis, Adenoiditis and Pharyngitis Head and Neck space infections; Tumours of Nasopharynx, Hypopharynx, Oropharynx and Pharyngeal Pouch; Snoring and Sleep Apnoea; Laryngotracheal Trauma; Acute and Chronic inflammation of Larynx; Congenital Lesions and Benign Tumours of Larynx; Laryngeal paralysis; Carcinoma Larynx; Stridor and Tracheostomy; Voice and Speech Disorder; Foreign Bodies in Air and Food passage; Disorders of Oesophagus and Dysphagia

Name of the Institute

OTORHINOLARYNGOLOGY LOGBOOK

Competency – based medical education (CBME) involves the attainment of observable abilities by the students in a time-dependent, learner-centered manner. The emphasis is on outcomes that are relevant to the daily practice of medicine rather than facts. The student gets opportunity to learn at his/her own pace, the ultimate aim being the successful attainment of competencies by all students irrespective of when they do that. Assessment are aligned to these competencies; therefore, the tools differ drastically from the traditional curriculum. While written assessment of cognitive components constitute the bulk of traditional curricular assessment

Competency-based curriculum strives to employ more of workplace-based assessment including direct observation and daily logs.

Sayings of the great:

"I will prepare and someday my chance will come."

Sir Abraham Lincoln

"Strength does not come from physical capacity, it comes from an indomitable will."

Mahatma Gandhi

CONTENTS

LOGBOOK CERTIFICATE

This is to certify that this logbook is the bonafide record of Mr. / Ms. ..... Roll No……..Admission Year ……, of the Department of Otorhinolaryngology (ENT) at ……..…….Medical College.

The logbook is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

_____

Head of Department of Otorhinolaryngology

Signature with Date

BIODATA OF THE CANDIDATE

PHOTO

Name of the student:

Name of the course: MBBS

Date of birth:

Father’s / Guardian’s name:

Mother’s name:

Blood group:

Permanent Address:

……

……..

Temporary Address:

……

…….

Student’s contact no:

Father’s/ Guardian’s contact no:

Student’s Email id:

Father’s/ Guardian’s Email id:

Candidates Signature: ……... Date: .....

GENERAL INSTRUCTIONS

1) The logbook is a record of the academic / non-academic activities of the student. Each Medical student is responsible for maintaining their logbook.

2) This logbook is prepared as per the guidelines of NMC for implementation of Competency Based Curriculum for 3rd Professional MBBS students in the subject of Otorhinolaryngology.

3) Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly signed by the supervising faculty.

4) Entries in the logbook will be in accordance with activities done in the department & have to be scrutinized by the Head of the department.

5) The logbook assessment will be based on multiple factors like

   - Overall presentation
   - Active participation in the sessions Quality of write up of reflections.
   - Timely completions
   - Attendance

6) The logbook shall be kept as record work of the candidate for the department & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A **clear record** of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least **2 years** after passing of the examination. Institutions may be asked to provide these details by the University as and when required.

The contents in the logbook are suggested guidelines. The institutions can make **necessary changes as per the needs.**

ATTENDANCE

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

Records of Examinations and Internal Assessment

Sr. No.	Exam No.	Date	Theory	Date	Practical (Exam 1 and 2 – 5 marks each for journal and logbook, Prelim exam-10 marks each for journal and logbook)	Feedback provided	Signature of student	Signature of teacher
1	Exam no.1- *Phase II (end of 1st clinical postings)		–		/40+10			
2	Exam no.2- Phase III/I (end of 2nd clinical postings)		/50		/40+10			
3	Preliminary Examination		/100		/80+20			
4	Total		/150		/150			
5	Conversion		/30		/30			
6	Final Internal Assessment Marks (to be submitted to University)		/30		/30			

***The practical examination conducted in phase II will be college level examination and marks of the same will not be included in the internal assessment.**

.....

Signature of Head of the Department

Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes, extracurricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase II	Phase III/I	Signature of Teacher

Reflection (minimum 200 words) – 1

Date :

TOPIC:

Reflection (minimum 200 words) – 2 **Date :**

TOPIC:

LOGBOOK : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Competency # addressed	Name of Activity
Topic: Clinical Skills	
EN2.1	Elicit document and present an appropriate history in a patient presenting with an ENT complaint
EN2.2	Demonstrate the correct use of a headlamp and head mirror in the examination of the ear, nose and throat
EN2.4	Demonstrate the correct technique of performing and interpreting tuning fork tests
EN2.5	Demonstrate the correct technique of examination of the nose & paranasal sinuses including the use of nasal speculum
EN2.6	Demonstrate the correct technique of examining the throat including the use of a tongue depressor
EN2.7	Demonstrate the correct technique of examination of neck including elicitation of laryngeal crepitus
EN2.8	Demonstrate the correct technique to perform and interpret pure tone audiogram & impedance audiogram
EN2.12	Counsel and administer informed consent to patients and their families in a simulated environment
Topic: Management of diseases of ear, nose & throat	
EN4.1	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Otalgia
EN4.3	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of ASOM
EN4.4	Demonstrate the correct technique to hold visualize and assess the mobility of the tympanic membrane and its mobility and interpret and diagrammatically represent the findings

EN4.7	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of mucosal type of CSOM
EN4.8	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of CSOM
EN4.9	Demonstrate the correct technique for syringing wax from the ear in a simulated environment
EN4.22	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Nasal Obstruction
EN4.26	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Adenoid
EN4.27	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Allergic Rhinitis
EN4.30	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Epistaxis
EN4.37	Describe the clinical features, investigations and principles of management of Ludwig's angina
EN4.39	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Chronic Tonsillitis
EN4.42	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of hoarseness of voice
EN4.49	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of foreign bodies in the air & food passages

LOGBOOK PSYCHOMOTOR / PERFORMANCE SKILLS:

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

I - Otoscopy

D – Anterior nasal packing

LIST OF COMPETENCIES

Competency # addressed	**Name of Activity**
EN2.3	Demonstrate the correct technique of examination of the ear including Otoscopy
EN2.13	Identify, resuscitate and manage ENT emergencies in a simulated environment (including tracheostomy, anterior nasal packing, removal of foreign bodies in ear, nose, throat and upper respiratory tract)

LOGBOOK FOR AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

LIST OF COMPETENCIES FOR AETCOM

Competencies addressed

The student should be able to	Level
1. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues as it pertains to the physician – patient relationship (including fiduciary duty)	KH
2. Identify and discuss physician's role and responsibility to society and the community that she/he serves	KH

PHASE II-clinical (minimum two assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE II-Psychomotor

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										

PHASE III Part I -clinical (Minimum two assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I-Psychomotor skill

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										

PHASE III Part I - AETCOM

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										

REFLECTION ON AETCOM MODULE For PHASE III/Is

Module 2.1 – History taking

Competency addressed	Level
Elicit document and present an appropriate history in a patient presenting with an ENT complaint	SH

Reflection (minimum 200 words) -1 Date:

Signature of Teacher-in-charge

REFLECTION ON AETCOM MODULE

Module 2.12 – Counseling and administering informed consent

Competency addressed	Level
Counsel and administer informed consent to patients and their families in a simulated environment	SH

Reflection (minimum 200 words)-2 Date:

Signature of Teacher-in-charge

ANNEXURE 1:

RECORDING FORM FOR MINI – CEX

EVALUATOR : DATE :

STUDENT :

YEAR :

PATIENT DIAGNOSIS :

SETTINGS :

	AMBULATORY	NEW	COMPLEXITY : LOW
	IN PATIENT	FOLLOW UP	MODERATE
	ED		HIGH
	OTHER :		

PATIENT AGE PATIENT SEX

FOCUS : DATA GATHERING / DIAGNOSIS / THERAPY / COUNSELLING

1. **MEDICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

2. **PHYSICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

3. **HUMANISTIC QUALITIES** / PROFFESIONALISM (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

4. **CLINICAL JUDGEMENT** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

5. **COUNSELLING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

6. **ORGANIZATION / EFFICIENCY** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

7. **OVERALL CLINICAL COMPETENCE** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

MINI CEX TIME : OBSERVING : _____ MINS

PROVIDING FEEDBACK _____ MINS

UNSATISFACTORY 1,2,3

SATISFACTORY 4, 5, 6

SUPERIOR 7, 8, 9

EVALUATOR SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

RESIDENT SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

COMMENTS :

STUDENT SIGNATURE EVALUATOR SIGNATURE

ANNEXURE 2:

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Communication skills rating scale adapted from Kalamazoo consensus statement.

Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

Maharashtra University of Health Sciences

General Medicine

Second MBBS (Clinical posting)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : **25+ 60**
2. A. Lectures(hours): **25** B. Self-directed learning (hours) : **NIL**
   C. Clinical Postings (hours): **60**
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**: NIL**

Week / Day	Day of the Week *	Competency Nos.	Topics & Subtopics (Suggested)	Duration	TL Method
1/ 1	Monday	1.10	Orientation to History Taking	3 hours	Bed side clinic
1/2	Tuesday	9.3	History taking and causes of anemia	1 hour	Bed side clinic
		8.9	Evaluation of all risk factors and co-morbidities for patient with hypertension	1 hour	Bed side clinic
		11.7	Elicit document and present a medical history that will differentiate the etiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease	1 hour	Bed side clinic
1/3	Wednesday	16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses	1 hour	Bed side clinic
		25.4	Elicit document and present a medical history that helps delineate the aetiology of zoonotic diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel	2 hours	Bed side clinic
1/4	Thursday	26.20	Demonstrate ability to communicate to patients in a patient, respectful, non-threatening, non-judgmental and empathetic manner	2 hours	Bed side clinic
		26.21 & 26.22	- Demonstrate respect to patient privacy		Bed side

Week / Day	Day of the week	Competency Nos.	Topics & Subtopics	Duration	TL Method
			-Demonstrate ability to maintain confidentiality in patient care	1 hour	clinic
1/5	Friday	26.35	Demonstrate empathy in patient encounters	1 hour	Bed side clinic
		6.7	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status	1 hour	Bed side clinic
		26.19 , 26.24 & 26.25	- Demonstrate ability to work in a team of peers and superiors - Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers - Demonstrate responsibility and work ethics while working in the health care team	1 hour	Bed side clinic
2/1	Monday	1.11, part 1.29	Orientation to General Exam	3 hours	Bed side clinic
2/2	Tuesday	1.12	Pulse examination with demonstration	3 hours	Bed side clinic /DOAP
2/3	Wednesday	1.13	Measure BP accurately	2 hours	Bed side clinic /DOAP
		1.14	JVP	1 Hour	Bed side clinic /DOAP
2/4	Thursday	4.9	Evaluation of fever	1.5 hours	Bed side clinic/DOAP
		4.10	Examination of skin ,lymph node, chest and abdominal examination	1.5 hours	Bed side clinic/DOAP
2/5	Friday	9.4	Perform a systematic examination that includes : general examination for pallor, oral examination	1 hour	Bed side clinic
		4.21	Orientation to Clinical decision making	2 hours	Bed side clinic
3/1	Monday	7.11 and 7.12	Orientation to medical history and examination of joints ,muscle and skin rheumatological diseases	1hour	Bed side clinic
		11.8	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries) in a patient	1 hour	Bed side clinic

Week / Day	Day of the week	Competency Nos.	Topics & Subtopics	Duration	TL Method
			with diabetes		
		Practice session for clinical skills including BP Measurement/ ward rounds		1 hour	Bed side clinic
3/2	Tuesday	1.30	**Skill Acquisition -** IM injection	3 hour	Skills lab
3/3	Wednesday	5.9	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes clinical presentation, risk factors, drug use, sexual history, vaccination and family history in patient with liver disease.	1 hour	Bed side clinic
		16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination	1 hour	Bed side clinic
		5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	1 hours	Bed side clinic
3/4	Thursday	2.7	CVS Examination with demonstration	3 hour	Bed side clinic/DOAP
3/5	Friday	3.4 & 3.5	Orientation to history taking, general examination & systemic examination of Respiratory system	3 hours	Bed side clinic/DOAP
4/1	Monday	18.3	Elicit and document and present an appropriate history including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident	2 hours	Bed side clinic
		Practice session for clinical and other skills/ ward rounds		1 hour	Bed side clinic / skills lab
4/2	Tuesday	18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate based on the history	2 hours	Bed Side clinic
		Practice session for clinical and other skills/ ward rounds		1 hour	Bed side clinic / skills lab
4/3	Wednesday	20.4 & 20.5	**Medical emergency** - - Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite	2 hours	Bed side clinic

Week / Day	Day of the week	Competency Nos.	Topics & Subtopics	Duration	TL Method
			- Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination in a case of snake bite		
		Practice session for clinical and other skills/ward rounds		1 hour	Bed side clinic / skills lab
4/4	Thursday	**Practical Assessment + Theory Assessment**		3 hours	Case presentation
4/5	Friday	**Skills Assessment** – Certifiable skills and soft skills **Logbook Certification**		3 hours	OSCE stations/ skills stations
Student Doctor method of clinical teaching – on the emergency day/ admission day of the clinical unit, students will be posted in admission area (Casualty / EMS) and allotted a case/ cases, which they will be following over the period of indoor stay and the same will be entered in the Logbook. **Focus of Learner-Doctor programme** - History taking, physical examination, assessment of change in clinical status, communication and patient education					

* Day of week is only suggestive, considering the posting is started on Monday. If posting is commenced on any other day, day of week can be modified accordingly.

Maharashtra University of Health Sciences

General Medicine

Second MBBS (from Feb/March 2021)

Subject: GENERAL MEDICINE Theory

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2; page nos. 60-142)

1. Total Teaching hours : **25h + 60h**
2. A. Lectures(hours): **25h** B. Self directed learning (hours) :**NIL**

   C. Clinical Postings (hours): 4 Wks (60h)

   D. Small group teachings/tutorials/Integrated teaching/Practicals(hours)**: NIL**

Lecture	Competency Nos.	Topic	Subtopics
1	IM 4.1 to 4.5	Fever & Febrile Syndromes	**Introduction to Fever, Pathophysiology, Causes-** Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile Response, Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel, 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), inflammatory causes of fever, malignant causes of fever including hematologic and lymph node malignancies
2	IM 4.6; 4.15; 4.22 to 4.26	Fever & Febrile Syndromes	**Malaria -** Discuss and describe the pathophysiology and manifestations of malaria, interpret a malarial smear, Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance, malarial prevention
3	IM 4.7	Fever & Febrile Syndromes	**Sepsis Syndrome -** Discuss and describe the pathophysiology and manifestations of the sepsis syndrome
4	IM 4.8; 4.16; 4.18	Fever & Febrile Syndromes	**FUO-** 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 **,** 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, Enumerate the indications for use of imaging in the diagnosis of febrile syndromes.

5	IM 25.1; 25.2; 25.3, 25.7,25.8, 25.10,25.11	Infections	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases**,** pathophysiology and manifestations, appropriate diagnostic plan, newer techniques in the diagnosis, empiric treatment plan OF -
			Leptospirosis & Dengue
6		Infections	**Rabies & Tetanus**
7		Infections	**Scrub Typhus, Typhoid**
8		Infections	**Acute encephalitis syndromes including JE**
9	IM 6.1 to 6.3	HIV	Describe and discuss the **symptoms and signs of acute HIV** Seroconversion, Define and **classify HIV AIDS** based on the CDC criteria, Describe and discuss the relationship between CDC count and the risk of opportunistic infections
10	IM 6.4 to 6.6; 6.9	HIV	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related **opportunistic infections, malignancies, skin and oral lesions,** Choose and interpret appropriate **diagnostic tests** to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC
11	IM 6.16 to 6.18	HIV	Discuss and describe the principles of **HAART**, the classes of antiretrovirals used, adverse reactions and interactions, Discuss and describe the principles and regimens used in post exposure prophylaxis, Enumerate the indications and discuss prophylactic drugs used to prevent HIV related opportunistic infections
12	IM 16.1; 16.13; 16.14; 16.6	Diarrheal Diseases	Describe and discuss the aetiology of **acute and chronic diarrhea** including infectious and noninfectious causes, Distinguish between diarrhea and dysentery based on clinical features, Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic, bacterial and viral causes of diarrhea
13	IM 16.11; 16.12	Diarrheal Diseases	**Diagnosis** of acute diarrhea (Stool culture & Blood culture); Diagnosis of chronic diarrhea (Antibodies, colonoscopy, imaging & biopsy)
14	IM 16.2; 16.3	Diarrheal Diseases	Describe and discuss the **acute systemic consequences of diarrhea** including its impact on fluid balance, Describe and discuss the chronic effects of diarrhea including malabsorption
15	IM 16.15-16.17	Diarrheal Diseases	Distinguish based on the clinical presentation **Crohn's disease from Ulcerative Colitis,** Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy, the indications for surgery in **inflammatory bowel disease**
16	IM 3.2,3.3	Pneumonia	Discuss and describe the etiologies of various kinds of **pneumonia** and their microbiology depending on the setting and immune status of the host, Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia
17	IM 3.1	Pneumonia	Define, discuss, describe and distinguish **community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia**

18	IM 3.15; 3.16	Pneumonia	Describe and enumerate **the indications for hospitalization** in patients with pneumonia, Describe and enumerate the indications for **isolation and barrier nursing** in patients with pneumonia
19	IM 3.17; 3.19	Pneumonia	Describe and discuss the **supportive therapy** in patients with pneumonia including oxygen use and indications for ventilation, Discuss, describe, enumerate the indications and communicate to patients on pneumococcal and influenza **vaccines**
20	IM 20.1; 20.3; 20.7	Envenomation	Enumerate the local poisonous snakes and describe the distinguishing marks of each, Describe the initial approach to the stabilization of the patient who presents with **snake bite**, Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of **anti snake venom**.
21	IM 20.8; 20.9	Envenomation	Describe the diagnosis, initial approach stabilization and therapy of **scorpion envenomation** and **bee sting allergy**
22	IM 21.1 to 21.3	Poisoning	Describe the initial approach to the stabilization of the patient who presents with poisoning, Enumerate the **common plant poisons** seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification, **common corrosives poisoning**.
23	IM 21.4	Poisoning	Enumerate the commonly observed **drug overdose** in your area and describe their toxicology, clinical features, prognosis and approach to therapy
24	IM 23.1, 23.4	Nutrition & Vitamin Deficiencies	Discuss and describe the methods of **nutritional assessment** in an adult and calculation of caloric requirements during illnesses, Enumerate the indications for **enteral and parenteral nutrition** in critically ill patients
25	IM 23.2; 23.3	Nutrition & Vitamin Deficiencies	Discuss and describe the causes and consequences of **protein caloric malnutrition** in the hospital, Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of **common vitamin deficiencies**

Maharashtra University of Health Sciences

General Medicine

Third professional Part I MBBS

Subject: General Medicine

Theory - Lectures + SDL + Tutorials, Seminars, Integrated

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : **25+ 35+ 5+72**
2. A. Lectures(hours): **25** B. Self-directed learning (hours) : **05**
   C. Clinical Postings (hours): 72
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**: 35**

Lecture / SDL	Competency Nos.	Topic	Subtopics
1	IM 9.1; 9.2	**Anaemia**	Classification of anemia; Etiology & Prevalence
2	IM 9.7; 9.8,9.21	Anaemia	Components of hemogram; Tests for Iron deficiency & Vit. B12 Deficiency. Determine the need for specialist consultation.
3	IM 9.11; 9.12	Anaemia	Diagnostic plan for evaluation of anemia including BMA & Biopsy
4	IM 9.17; 15.12,9.18,	Anaemia	Indication for Blood transfusion & components; Precautions during transfusion including mismatch transfusion.
SDL-1	IM 9.14	Anaemia	National programs for prevention of anemia
5	IM 14.1 to 14.4	**Obesity**	Definition, prevalence, etiology, risk factors including monogenic forms, environmental factors of obesity
6	IM 14.5; 14.9, 14.10,14.13; 14.14;14.15	Obesity	Natural history, complications, laboratory tests , pharmacotherapy and bariatric surgery of obesity and prevention of obesity
7	IM 15.1; 15.6	**GI Bleed**	Etiology and distinguishing features of UGI and LGI Bleed
8	IM 15.2 ; 15.3; 15.11	GI Bleed	Physiological effects, Evaluation and steps in stabilizing a patient with acute volume loss due to GI bleed; including blood and component transfusion

9	15.14; 15.10; 15.15,15.16, 15.17	GI Bleed	Investigation (endoscopy, colonoscopy, imaging) and treatment of GI bleed including pharmacotherapy of acid peptic disease (including H.pylori), pressors, endoscopic interventions and surgery and appropriate level of specialist consultation
10	IM 5.1; 5.2; 5.3, 5.5; 5.7	**Liver Diseases**	Etiology, Pathophysiology of hyperbilirubinemia and various forms of liver disease including alcoholic liver disease and drug induced liver injury
11	IM 5.4,5.16, 5.17	Liver Diseases	Epidemiology, microbiology, immunology, clinical evolution of infective (viral) hepatitis and it' management including vaccination.
12	IM 5.12, 13, 14	Liver Diseases	Outline a diagnostic approach to liver disease based on CBS, hyperbilirubinemia, Ascitic fluid examination, liver function changes and hepatitis serology. Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease.
13	IM 5.6,5.18	Liver Diseases	Pathophysiology, evolution, management and Complication of cirrhosis and portal hypertension, indications for hepatic transplantation.
SDL-2	IM 5.8	Liver Diseases	Cholelithiasis and cholecystitis
14	IM 11.1 to 11.4	**Diabetes**	Definition, classification of Diabetes; Epidemiology, Pathogenesis, Genetics, Risk factors and Clinical evolution of Type-1 & -2 DM
15	IM 11.6; 11.9; 11.11, 11.14; 11.15; 11.22 to 11.24	Diabetes	Pathogenesis, C/F, Precipitating factors, Stabilization, Principle of therapy & Management (Investigations & treatment) of diabetic emergencies (Hypoglycemia, DKA, HONKS).
16	IM 11.16; 11.17	Diabetes	Pharmacological therapies for DM, indications, CI, ADR and Interaction- Based on presentation, severity, complication in a cost effective therapy
17	IM 11.5	Diabetes	Pathogenesis, temporal evolution of microvascular and macrovascular complications of diabetes (Neuropathy, Nephropathy, Retinopathy, HTN,
SDL 3	IM 11.18	Diabetes	Pharmacology, indications, ADR and interactions of drugs used in treatment and prevention of target organ damage and chronic complications of diabetes

18	IM 7.1; 7.2, 7.27	Rheumatologic Problems	Pathophysiology and genetic basis of autoimmune disease and determine the need for specialist consultaion
19	IM 7.3 to 7.6; 7.8	Rheumatologic Problems	Pathophysiology, classification, presenting features, approach, and etiology of joint pain; differentiate arthritis from arthralgia
20	IM 7.10, 7.14,7.15,7,17 ,7,19	Rheumatologic Problems	Describe appropriate diagnostic workup and treatment plan for rheumatological diseases. Enumerate Systemic manifestations of rheumatological diseases,
SDL 4	IM 7.7; 7.9; 7.16	Rheumatologic Problems	Articular from periarticular symptoms; Signs and symptoms of articular and periarticular diseases, Indications for Arthocentesis.
21	IM 12.3; 12.4	Thyroid Dysfunction	Principles of Thyroid function tests, Principles of RAI uptake, alteration of physiological function along with physiology of HPT axis
22	IM 12.1; 12.2; 12.11,12.12; 12.13, 12.14	Thyroid Dysfunction	Epidemiology, pathogenesis, genetic basis of Hypothyroidism, interpretation of TFT, Pharmacotherapy, indication, ADR of Thyroxine. Iodization programmes of Govt of India
23	IM 12.1; 12.2; 12.11,12.13, 12.4; 12.14	Thyroid Dysfunction	Epidemiology, pathogenesis, genetic basis of Hyperthyroidism; interpretation of TFT, Pharmacotherapy, indication, ADR of Anti-thyroid drugs
24	IM 13.1 to 13.3	Common Malignancies	Epidemiology, Genetic Basis, Risk factors for common malignancies in India; Infections causing cancer
25	IM 13.4	Common Malignancies	Natural history, presentation, course, complication and cause of death for common cancers
SDL 5	IM 13.5,13.6, 13.18, 13.19	Common Malignancies	Describe the common issues encountered in patients at the **end of life** and principles of management, Describe and distinguish the difference between curative and **palliative care** in patients with cancer, Describe and discuss the ethical and the medico legal issues involved in end of life care, Describe the therapies used in alleviating suffering in patients at the end of life

Tutorials/Seminars/Integrated teachings- 35 hours			
Tutorials- Total 10 hours			
S. No.	**Topics**		**Hours**
1.	Medical emergencies – Common poisonings		1 hr
2.	Medical emergencies - related to Pharmacological agents		1 hr
3.	Drugs – IV fluids and pain killers including Narcotics		1 hr
4.	Drugs – used in CPR		1 hr
5.	Instruments – for various injections and IV access		1 hr
6.	Instruments - for routine invasive procedures		1 hr
7.	X rays – Format of reading X-ray chest, skeletal and pleural involvement in X-ray Chest		1 hr
8.	X rays – Parenchymal involvement in X-ray chest		1 hr
9.	ECG – Basics of reporting ECG ,with abnormal rate		1 hr
10	ECG – Rhythm disturbances		1 hr
Seminars- Total 16 hours			
S. No.	**Topics**		**Hours**
1.	Clinical approach to Ascites		1 hr
2.	Clinical approach to Anaemia		1 hr
3.	Clinical approach to lymphadenopathy		1 hr
4.	Clinical approach to Jaundice		1 hr
5.	Clinical approach to chest pain		1 hr
6.	Clinical approach to headache		1 hr
7.	Clinical approach to bleeding diathesis		1 hr
8.	Clinical approach to Comatose patient		1 hr
9.	Portal hypertension and its complications		1 hr
10	Pulmonary arterial hypertension		1 hr
11	Pulmonary function tests		1 hr
12	Thyroid function tests		1 hr
13	Grave's disease		1 hr
14	Micro-vascular complications of DM		1 hr
15	Macro-vascular complications of DM		1 hr
16	Insulin and analogues		1 hr
Integration – Total 9 hours			
S.No.	**Subject**	**Topics for integration**	**Hours**
1.	Clinical Pharmacology	Clinical pharmacokinetics	01
		Drug-Drug interaction	01
		Adverse drug reaction	01
2.	Clinical Pathology	Anaemia and haemoglobinopathies	01
		Platelet disorder	01
		Hematological malignancies	01
3.	Clinical Microbiology	Biologicals and disease modifying agents	01
		Antimicrobial resistance	01
		Viral haemorrhagic fever	01

Maharashtra University of Health Sciences

General Medicine

Third professional Part I MBBS

Subject: General Medicine

Clinical Posting (4 weeks, 6 days a week, 3 hours per day)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : **25+ 35+ 5= 65**
2. A. Lectures(hours): **25** B. Self-directed learning (hours) : **05**
   C. Clinical Postings (hours): **72**
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**: 35**

Clinical skills hours	Procedural Skills hours	Assessment hours	Total
54	**12**	**06**	**72**

Maharashtra University of Health Sciences

General Medicine

Fourth professional Year III/II MBBS

Subject: General Medicine

Theory - Lectures + SDL + Tutorials, Seminars, Integrated

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours :70+ 125+15 + 144+ 72 = 426
2. A. Lectures(hours): **70** B. Self-directed learning (hours) :15
   C. Clinical Postings (hours): 144 + 72= 216
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**:** 125

Lecture / SDL	Competency Nos.	Topic	Subtopics
1	IM 8.1 to 8.5	**Hypertension**	Define and classify hypertension, Describe and discuss the epidemiology, etiology, prevalence, pathophysiology and genetic basis of essential hypertension, Describe and discuss the differences between primary and secondary hypertension
2	IM8.7,8.1	Hypertension	Describe and discuss epidemiology, aetiology and the prevalence of secondary HT and the clinical manifestations of the various aetiologies of secondary causes of hypertension
3	IM8.6	Hypertension	Define, describe and discuss and recognize hypertensive urgency and emergency
4	IM 8.8, 8.20	Hypertension	Describe, discuss and identify target organ damage due to hypertension, Determine the need for specialist consultation
SDL 1	IM 8.12,8.13	Hypertension	Describe the appropriate diagnostic work up based on the presumed aetiology, Enumerate the indications for and interpret the results of : CBC, Urine routine, BUN, Cr, Electrolytes, Uric acid, ECG
SDL 2	IM 8.14	Hypertension	Develop an appropriate treatment plan for patient with hypertension
5	IM 1.1, 1.2	Heart Failure	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart

			disease including: rheumatic/valvular, ischemic, hypertrophic, inflammatory. Describe and discuss the genetic basis of some forms of heart failure.
6	IM 1.3 (part)	Heart Failure	Describe and discuss the aetiology, microbiology pathogenesis and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and Rheumatic valvular heart disease.
7	IM1.9	Heart Failure	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever
8	IM 1.3 (part) IM 1.27	Heart Failure	Describe Complications of Rheumatic valvular heart disease. (Other than Infective Endocarditis), Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease
SDL 3	IM 1.25	Heart Failure	Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation
9	IM1.3 (part), 1.21	Heart Failure	Describe and discuss and identify the clinical features of acute and sub-acute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy
10	IM1.4,1.5,1.6	Heart Failure	Staging of heart failure, Describe, discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure, Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodeling and neuro-hormonal adaptations
11	IM1.7	Heart Failure	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias, anemia, thyrotoxicosis, dietary factors drugs etc.
12	IM 1.8	Heart Failure	Describe and discuss the pathogenesis and development of common arrhythmias involved in failure particularly atrial fibrillation
13	IM 1.19	Heart Failure	Enumerate the indications for and describe the **findings of heart failure** with the following : 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram
14	IM 1.24	Heart Failure	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
15	IM 1.28	Heart Failure	Enumerate the causes of **adult presentations of congenital heart disease** and describe the distinguishing features between cyanotic and acyanotic heart disease
16	IM 2.1 ,2.2, 2.4	AMI/IHD	Discuss and describe the epidemiology, antecedents and risk factors both modifiable and non-modifiable, the pathogenesis, natural history, evolution and complications of **atherosclerosis and IHD.**
SDL 4	IM 2.3	AMI/IHD	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis
17	IM 2.5	AMI/IHD	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes
18	IM 2.13	AMI/IHD	Discuss and enumerate the indications for and findings on echocardiogram, stress testing and coronary angiogram
19	IM 2.14,2.15, 2.16	AMI/IHD	Discuss and describe the indications for admission to a coronary care unit and supportive therapy for a patient with acute coronary syndrome. Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation. Discuss and describe the indications for acute thrombolysis, PTCA and CABG.
SDL 5	IM 2.17	AMI/IHD	Discuss and describe the indications and methods of cardiac rehabilitation.
20	IM 2.18	AMI/IHD	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia
21	IM 2.19	AMI/IHD	Discuss and describe the pathogenesis, recognition and management of complications of acute coronary syndromes including arrhythmias, shock, LV dysfunction, papillary muscle and pericarditis
22	IM ,2.20	AMI/IHD	Discuss and describe the assessment and relief of pain in acute coronary syndromes
23	IM 2.23	AMI/IHD	Describe and discuss the indications for nitrates, anti platelet agents, gpIIb IIIa inhibitors, beta blockers, ACE

			inhibitors etc in the management of coronary syndromes
24	IM 17.1,17.6, 17.10	Headache	Define and classify **headache** and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache. Choose and interpret diagnostic testing based on the clinical diagnosis including imaging. Enumerate the indications for emergency care admission and immediate supportive care in patients with headache.
25	IM 17.3,17.11, 17.12	Headache	Classify **migraine** and describe the distinguishing features between classical and non-classical forms of migraine. Describe the indications, pharmacology, dose, side effects of abortive therapy and prophylactic therapy in migraine.
26	IM 17.13	Headache	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral **meningitis.**
SDL 6	IM 18.1	Cerebrovascular accident	Describe the functional and the vascular anatomy of the brain
27	IM 18.2	Cerebrovascular accident	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non-hemorrhagic stroke
28	IM 18.10	Cerebrovascular accident	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)
29	IM 18.11	Cerebrovascular accident	Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)
30	IM 18.12,18.13	Cerebrovascular accident	Enumerate the indications for and describe acute therapy of non-hemorrhagic stroke including the use of thrombolytic agents and anti-platelet agents
31	IM18.14, 18.15	Cerebrovascular accident	Describe the initial management of a hemorrhagic stroke. Enumerate the indications for surgery in a hemorrhagic stroke.
SDL 7	IM 18.16	Cerebrovascular accident	Enumerate the indications describe and observe the multidisciplinary rehabilitation of patients with a CVA
SDL 8	IM 19.1	Movement disorders	Describe the functional anatomy of the locomotor system of the brain
32	IM 19.2,19.3,IM	Movement disorders	Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors, clinical approach to movement

	19.7		disorders.
33	IM 19.8	Movement disorders	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome
34	IM19.7,19.9	Movement disorders	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders, Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders
35	IM 10.1,10.2	AKI and CRF	Define, describe and differentiate between acute and chronic renal failure, Classify, describe and differentiate the pathophysiologic causes of acute renal failure
36	IM 10.3, 10.4	AKI and CRF	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF, Describe the evolution, natural history and treatment of ARF
37	IM 10.5,10.6, 10.7	AKI and CRF	Describe and discuss the aetiology of CRF, Stage Chronic Kidney Disease, Describe and discuss the pathophysiology and clinical findings of uremia
38	IM 10.15,10.16, 10.17,10.19	AKI and CRF	Describe **the appropriate diagnostic work up** based on the presumed aetiology, Enumerate the indications for and interpret the results of : renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap, Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance), Enumerate the indications and describe the findings in renal ultrasound
39	IM10.8 , 10.9 10.10 ,10.11	AKI and CRF	Classify, describe and discuss the significance of proteinuria in CKD, Describe and discuss the pathophysiology of anemia and hyperparathyroidism, Describe and discuss the association between CKD glycaemia and hypertension, Describe and discuss the relationship between CAD risk factors and CKD.
40	IM 10.25	AKI and CRF	Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis
41	IM 10.26	AKI and CRF	Describe and discuss supportive therapy in CKD including diet, anti hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hypophosphatemia and

			secondary hyperparathyroidism
42	IM 10.27,10.28	AKI and CRF	Describe and discuss the indications for renal dialysis, Describe and discuss the indications for renal replacement therapy
SDL 9	IM 10.29, 10.30,10.31	AKI and CRF	Describe discuss and communicate the ethical and legal issues involved in renal replacement therapy, Recognize the impact of CKD on patient's quality of life, wellbeing , work and family, Incorporate patient preferences in to the care of CKD
43	IM 22.1,22.2, 22.3	Fluid Electrolyte & Acid base Disorder	Enumerate the causes of **hypercalcemia** and distinguish the features of PTH vs non PTH mediated hypercalcemia, Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism, Describe the approach to the management of hypercalcemia
44	IM 22.4	Fluid Electrolyte & Acid base Disorder	Enumerate the components and describe the genetic basis of the **multiple endocrine neoplasia syndrome**
45	IM 22.5,22.6	Fluid Electrolyte & Acid base Disorder	Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management of the patient with **Hyponatremia and hypernatremia**
46	IM 22.7,22.8	Fluid Electrolyte & Acid base Disorder	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with **hypokalemia and hyperkalemia**
47	IM 22.9,22.10, 22.11, 22.12	Fluid Electrolyte & Acid base Disorder	Enumerate the causes and describe the clinical and laboratory features of **metabolic acidosis, metabolic alkalosis, respiratory acidosis, respiratory alkalosis**
SDL 10	IM 24.18,24.19, 24.21	Geriatrics	Describe the impact of the **demographic changes** in ageing on the population, Enumerate and describe the **social problems** in the elderly including isolation, abuse, change in family structure and their impact on health and discuss **ethical issues** in care of elderly.
48	IM 24.1, 24.3, 24.5 to 25.7	Geriatrics	Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly, Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization,

			management and rehabilitation of **acute confusional states, depression, dementia and personality changes in elderly.**
49	IM 24.10	Geriatrics	Describe and discuss the etiopathogenesis causes, clinical presentation, difference in clinical presentation identification, functional changes, acute care, stabilization, management and rehabilitation of **COPD in the elderly.**
50	IM 24.4,24.9	Geriatrics	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of**, vascular events and CVA in the elderly**
51	IM 24.11	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the **elderly undergoing surgery**
52	IM 24.8,24.12, 24.13,24.14	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of **osteoporosis**, **degenerative joint disease, falls, and common fractures in elderly**
53	IM 24.15 to 25.17	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of **vision and visual loss, hearing loss and disabilities in the elderly**
54	IM 24.22	Geriatrics	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of **nutritional disorders in the elderly**
SDL 11	IM 24.20	Geriatrics	Enumerate and describe **social interventions** in the care of elderly including domiciliary discussion services, rehabilitation facilities, old age homes and state interventions
55	IM 26.2, 26.23,26.27, 26.38, 26.39,26.42	The role of the physician in the community	**Professional Development –** Describe and discuss the commitment to lifelong learning as an important part of physician growth, Demonstrate a commitment to continued learning, Demonstrate personal grooming that is adequate and appropriate for health care responsibilities, Demonstrate ability to form and

			function in appropriate professional networks, Demonstrate ability to pursue and seek career advancement, Demonstrate commitment to learning and scholarship.
56	IM 26.3,26.4, 26.5,26.11	The role of the physician in the community	**Bioethics in Clinical Practice -** Describe and discuss the role of beneficence, non-maleficence, autonomy and shared responsibility as guiding principles in patient care
57	IM 26.37,26.36	The role of the physician in the community	**Time management** - Demonstrate ability to manage time appropriately, Demonstrate ability to balance personal and professional priorities
58	IM 26.12, 26.13, 26.25	The role of the physician in the community	**Decision making in health care -** Identify, discuss and defend medico legal, socio-cultural and ethical issues as it pertains to decision making in health care including advanced directives and surrogate decision making, decision making in emergency care including situations where patients do not have the capability or capacity to give consent, Identify, discuss and defend, medico legal, socio-cultural and ethical issues as they pertain to consent for surgical procedures
59	Module 4.1	Pandemic module	**Lessons learnt from Covid 19 pandemic – a Narrative**.
60	Module 4.1	Pandemic module	**Individual responsibilities in Pandemic Situation.**
SDL 12	26.47	The role of the physician in the community	**Euthanasia, current position in India** - Identify, discuss and defend medico legal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support
SDL 13	26.8	The role of the physician in the community	**Organ Donation in India -** Identify discuss medico legal, socioeconomic and ethical issues as it pertains to organ donation
SDL 14	Integrated SDL	Community Medicine	**National programs relevant to physicians**
SDL 15	Integrated SDL	Community Medicine	**Adult Immunization and newer vaccines**
61	1	Revision Lecture	Febrile illness
62	2	Revision Lecture	Infections
63	3	Revision Lecture	HIV

64	4	Revision Lecture	Diarrheal Diseases
65	5	Revision Lecture	Pneumonia
66	6	Revision Lecture	Anemia
67	7	Revision Lecture	GI Bleed
68	8	Revision Lecture	Liver Diseases
69	9	Revision Lecture	Diabetes
70	10	Revision Lecture	Thyroid disorders

MBBS Third part - 2
Tutorials/Seminars/Integrated teachings- 125 hours

Tutorials- ECG- Total 10 hours		
S. No.	**Topics**	**Hours**
1.	Approach to basics of ECG	1 hr
2.	Reading Normal ECG	1 hr
3.	ECG: Chamber enlargement	1 hr
4.	Myocardial Infarction	1 hr
5.	Electrolyte abnormalities on ECG	1 hr
6.	Narrow Complex tacchyarrythmias	1 hr
7.	Bradyarrthmias	1 hr
8.	Valvular Heart diseases	1 hr
9.	Bundle branch blocks	1 hr
10	Miscellaneous	1 hr
X Rays- Total 11 hours		
S. No.	**Topics**	**Hours**
1.	Basics of Chest X Ray	1 hr
2.	Reading Normal X Ray Chest	1 hr
3.	Abnormalities on Chest X Ray – Cardiovascular system	1 hr
4.	Pulmonary venous hypertension vs pulmonary arterial hypertension	1 hr
5.	Chest X ray – Respiratory system	1 hr
6.	Abdominal system(Chest & Abdomen X Ray)	1 hr
7.	Miscelleneous X ray	1 hr
8.	Basics of CT Scan	1 hr
9.	Basics of MRI	2 hr
10.	Basics of PET scan	1 hr
Drugs- Total 21 hours		
S. No.	**Topics**	**Hours**
1.	Anti epileptics	1 hr
2.	Cardiovascular Drugs	1 hr
3.	Anti Tubercular Therapy	1 hr
4.	Anti Retroviral Therapy	1 hr
5.	Emergency Drugs	2 hr
6.	Antiviral Drugs	1 hr
7.	Drugs in respiratory system	1 hr
8.	Glucocorticoids	1 hr
9.	Drugs in Rheumatology	1 hr
10.	Anticoagulants	1 hr
11.	Inotropes and inodilators	2 hr
12.	Anti hypertensives	2 hr
13.	Antidiabetic drugs	2 hr

Interpretation of Lab Charts- Total 14 hours		
S. No.	**Topics**	**Hours**
1.	Interpretation of Ascitic fluid analysis	1 hr
2.	Interpretation of Pleural fluid analysis	1 hr
3.	Interpretation of Cerebrospinal fluid analysis	1 hr
4.	Interpretation of Abnormal LFT	1 hr
5.	Interpretation of Hb, CBC, RBCindices	1 hr
6.	Interpretation of thyroid function test	1 hr
7.	Interpretation of Peripheral blood smear	1 hr
8.	Interpretation of urine analysis	1 hr
9.	Interpretation of Fundus examination	1 hr
10.	Interpretation of renal function tests	1 hr
11.	Interpretation of Bone marrow studies	1 hr
12.	Interpretation of ABG	2 hr
Seminars- Total 50 hours		
S. No.	**Topics**	**Hours**
1.	Clinical approach to Hypertensive emergencies	1 hr
2.	Clinical approach to Acute myocardial infarction	1 hr
3.	Clinical approach to solitary Seizure	1 hr
4.	Clinical approach to ischemic stroke	1 hr
5.	Clinical approach to intracranial bleed	1 hr
6.	Clinical approach to Heart Failure	1 hr
7.	Clinical approach to Acute renal failure	1 hr
8.	Clinical approach to Chronic kidney disease	1 hr
9.	Clinical approach to hyponatremia	1 hr
10	Clinical approach to potassium imbalance disorders	1 hr
11	Clinical approach to disorders of calcium metabolism	1 hr
12	Interpretation of ABG	1 hr
13	Mixed Acid Base disorders	1 hr
14	Emerging Viral Infections	1 hr
15	Clinical approach to Geriatric Syndromes	1 hr
16	Clinical approach to a case of Pulmonary Tuberculosis	1 hr
17	Clinical approach to a case of Extra Pulmonary Tuberculosis	1 hr
18	Clinical Approach to a case of PLHIV	1 hr
19	Clinical approach to opportunistic infections in a case of PLHIV	1 hr
20	Clinical approach to prescription of ART	1 hr
21	Clinical approach to a case of Dengue	1 hr
22	Clinical approach to a case of Complicated malaria	1 hr
23	Recent advances in the diagnosis of tuberculosis	1 hr
24	Vaccines for tuberculosis	1 hr
25	Recent advances in anti retroviral drugs	1 hr
26	Clinical approach to a case of Interstitial lung disease	1 hr
27	Clinical approach to a case of snake bite	1 hr
28	Clinical approach to a case of electric injury	1 hr
29	Clinical approach to a case of acute meningitis	1 hr

30	Clinical approach to a case of Chronic meningitis	1 hr
31	Ageing	1 hr
32	Human Microbiome	1 hr
33	Clinical approach to oncological emergencies	1 hr
34	Clinical approach to a case of Acute Leukemia	1 hr
35	Clinical approach to a case of Chronic leukemia	1 hr
36	Medicolegal, socioeconomic and ethical issues as it pertains to organ donation	1 hr
37	Role of physician in community	1 hr
38	Medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care	1 hr
39	Medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care	1 hr
40	Medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects	1 hr
41	Medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)	1 hr
42	Documentation in health care (including correct use of medical records)	1 hr
43	Use of information technology that permits appropriate patient care and continued learning	1 hr
44	Understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors	1 hr
45	Conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts	1 hr
46	Clinical approach to a case of DIC	1 hr
47	Clinical approach to a case of arthritis	1 hr
48	Clinical approach to a case of multisystem involvement	1 hr
49	Clinical approach to a case of peripheral neuropathy	1 hr
50	Clinical approach to a case of flaccid quadriparesis	1 hr

Integrated teachings -MBBS Third part 2 (Total 19 hours)

S.No.	Subject	Hours	Topics for integration
1.	Care of patients during Pandemics	6 hours	Interactive Discussion- 2 hours Triage practices to be followed Primary care to be given to a patient on reaching hospital Steps t be taken to reduce transmission of infections in emergency area Role Play- 1 hour Visit to hospital with discussion with staff- 2 hour Debriefing and feedback- 1 hour
2.	Emergency Procedures during Pandemics	8 hours	Interactive Discussion – 2 hours 1. Indications for invasive procedures in Pandemics 2. Points to be verified before emergency procedures 3. Steps to be taken to reduce transmission of infections 4. Attitude and Communication Issues related to complicated procedures II. Skill development program – with mannequins e.g. intubation, CPR, ALS, PALS etc - 4 hours (This may be linked with the routine Skill training component as well)

			III. Role Plays for communication skills and documentation - 1 hour IV. Debriefing and Feedback -1hour
3.	Managing Death during Pandemics	2 hours	Interactive discussion – 1 hour a. Confirmation and documentation of death b. Steps to be taken to reduce transmission of infections c. Attitude and Communication Issues related to handling of dead bodies d. Responding to media ii. Role Play for communication skills and documentation with debriefing and feedback - 1 hour
4.	Geriatrics	3 hr	Polypharmacy Falls Incontinence

Maharashtra University of Health Sciences
General Medicine

Fourth professional Part II MBBS

Subject: General Medicine

Clinical Posting (8+4 weeks, 6 days a week, 3 hours per day)

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2)

1. Total Teaching hours : 70+ 125+15 + 144+ 72 = 426
2. A. Lectures(hours): **70** B. Self-directed learning (hours) : **15**
   C. Clinical Postings (hours): 144+72 = 216
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**: 125**

Term I/II

Posting	Clinical skills hours	Procedural Skills hours	Assessment hours	Total hours
Third clinical posting of 8 weeks	**118**	**20**	**06**	**144**
Revision posting of 4 weeks	**72**			

Note - The details of day to day schedule of 144+ 72 hours as per clinical, procedural and attitudinal internal medicine competencies to be taught will be submitted later (please see second professional year clinical posting)

Maharashtra University of Health Sciences

Internal Assessment
General Medicine

Phase	IA – 1 -Exam			IA – 2 -Exam		
	Theory (Gen Med only) **(January)**	**Practical EOP**	**Total Marks**	**Theory** (Gen Med only) **(May)**	Practical of Allied	**Total Marks**
Second MBBS	**50**	**50**	**100**	**50**	**50 (divided into three allied subjects as follows)**	**100**
					DVL = 15 marks	
					Psychiatry = 15 marks	
					Respiratory Medicine = 20 marks	

* The marks for internal assessment – 2 shall be communicated by DVL, Psychiatry and Respiratory Medicine departments to General Medicine department immediately after completion of examination and assessment.

Phase	IA – 3 -Exam			IA – 4 -Exam		
	Theory **(Gen Med and** Allied) **(January)**	Practical **EOP (Including** 10 marks for Journal / Log Book)	**Total Marks**	Theory **(Gen Med and Allied)** (April)	Practical of Allied	**Total Marks**
Third MBBS Part I	**50**	**40+10=50**	**100**	**50**	**50 (divided into two allied subjects as follows)**	**100**
					DVL = 25 marks	
					Psychiatry = 25 marks	

* The marks for internal assessment – 4 shall be communicated by DVL and Psychiatry departments to General Medicine department immediately after completion of examination and assessment.

Phase	IA – 5 -Exam			Prelim Exam		
	Theory **(General Medicine and** Allied) **(May)**	Practical **EOP (Including 10 marks for Journal / Log Book)**	**Total Marks**	Theory **General Medicine and Allied)** (November)	Practical	**Total Marks**
Third MBBS Part II	**100**	**90+10=100**	**200**	**100 x 2 papers = 200**	**200**	**400**

There will be End of Postings Exam at each end of posting. (There will be FORMATIVE ASSESSMENT at the End of four weeks Clinical Posting of General Medicine NOT to be added to INTERNAL ASSESSMENT).

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 6 internal assessment examinations in General Medicine including allied.

2. The suggested pattern of question paper for internal assessment, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.

3. Internal assessment marks for theory and practical will be converted to out of 50 (theory) +50 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	**100**	**100**
Phase III/I	**100**	**100**
Phase III/II	**300**	**300**
Total	**500**	**500**
Conversion out of	**50**	**50**
Conversion formula	**Total marks in 6 IA theory examinations /10**	**Total marks in 6 IA Practical examinations /10**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

4. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	**33**
33.50 to 33.99	**34**

5. Students 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 order to be eligible for appearing at the final University examination of that subject.
6. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

7. <u>Remedial measures</u>

A. <u>Remedial measures for non-eligible students</u>

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically.

ii) Extra classes for such students may be arranged. If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.

iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination (as per final examination pattern)	**200**	**200**
Conversion out of	**50**	**50**
Conversion formula	**Marks in remedial theory examinations /4**	**Marks in remedial Practical examinations /4**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

B. <u>Remedial measures for absent students:</u>

i. If any of the students is absent for any of the 6 IA examinations due to any reasons, following measures shall be taken.
ii. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
iii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
iv. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Internal Assessment Practical Examinations

II MBBS

Internal Assessment - 1

General Medicine

Subject: General Medicine Practical (IA – 1)					
Case	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
10	10	10	10	10	50

 # OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

OSCE DETAILS: 1. History taking of a particular symptom;
2. Demonstration of signs- Pulse/BP/JVP;
3. Identification of General examination findings etc.
4. Communication Skills with patient or relative etc.

Viva on Drugs: Drugs Indication/Contraindication/ Adverse Effects etc.

Viva on emergency : eg. Snake bite, OP poisoning, Status asthmatics etc.

Internal Assessment - 2

DVL, Psychiatry and Respiratory Medicine (to be conducted at the end of respective clinical postings)

Subject: General Medicine Allied Practical (IA – 2) Examination in DVL		
Case	**Viva**	Practical Total
10	5	15
Subject: General Medicine Allied Practical (IA – 2) Examination in Psychiatry		
Case	**Viva**	Practical Total
10	5	15
Subject: General Medicine Allied Practical (IA – 2) Examination in Respiratory Medicine		
Case	**Viva**	Practical Total
15	**5**	**20**

* **The marks for internal assessment – 2 shall be communicated by DVL, Psychiatry and Respiratory Medicine department to General Medicine department immediately after completion of examination and assessment.**

III MBBS Part I

Internal Assessment - 3

General Medicine

Subject: General Medicine Practical (IA – 3)					
Case	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
20	5	5	10	10	50

 # OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

OSCE DETAILS: 1. History taking of a particular symptom;
2. Demonstration of General examination findings;
3. Demonstration of systemic findings
4. AETCOM or Communication Skills with patient or relative.

Internal Assessment - 4

DVL and Psychiatry

Subject: General Medicine Allied Practical (IA – 4) Examination in DVL			
Case	OSCE 1	Viva	Practical Total
10	5	**10**	25

Subject: General Medicine Allied Practical (IA – 4) Examination in Psychiatry			
Case	OSCE 1	Viva	Practical Total
10	5	**10**	25

* **The marks for internal assessment – 4 shall be communicated by DVL / Psychiatry department to General Medicine department immediately after completion of examination and assessment.**

III MBBS Part II

Internal Assessment - 5

General Medicine

Subject: General Medicine Practical (IA – 5)							
Long Case	OSCE1	OSCE2	OSCE 3	OSCE 4	Viva	Journal & log book	Practical Total
50	5	5	5	5	20	10	100

 # OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

OSCE DETAILS-

1. Demonstration of signs – (Deep Tendon Reflex, Tone, Power of Muscle, Palpation of spleen and liver);
2. Demonstration of systemic findings
3. Certifiable procedural skills
4. AETCOM or Communication Skills with patient or relative etc.

Viva – X-ray, ECG, Instruments, Drugs

MUHS final practical examination

General Medicine

Subject: General Medicine Practical					
Long Case	Short Case – 1	Short Case -2	OSCE * 4 Stations (15 x 4)	Viva (Table 1 – Instruments, Drugs, Emergencies Table 2- X-rays, ECGs, Laboratory reports) (2 tables of 20 marks each)	Practical Total
50	25	25	60	40	200

 # OSCE Stations may include General examinations, Local examinations, psychomotor skills, Communication skills, AETCOM etc.

OSCE 1 – Clinical Skills

OSCE 2 – Certifiable procedural skills

OSCE 3 – Certifiable procedural skills

OSCE 4 – AETCOM related skills

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK
Format / Skeleton of question paper for 1st & 2nd internal

Assessment Theory Examinations.

SECTION "A" MCQ

Instructions:

1) *Put ☒ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General Medicine) (1x1=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

1) ***Use blue/black ball point pen only.***
2) ***Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.***
3) ***All questions are compulsory.***
4) ***The number to the right indicates full marks.***
5) ***Draw diagrams wherever necessary.***

2. Long Answer Question (Any 2 out of 3) (General Medicine) (2 x 10 = 20)

a) b) c)

3. **Short answer questions (Any 4 out of 5) (At least2 Clinical reasoning question) (General Medicine) (4 x 5 = 20)**

a) b) c) d) e)

Topics for 1st & 2nd internal assessment are according to the syllabus covered till date of respective Internal Assessment examination.

Format / Skeleton of question paper for 3rd and 4th internal Assessment Theory Examinations (III MBBS Part I)

SECTION "A" MCQ

Instructions:

5) *Put ☒ in the appropriate box below the question number once only.*
6) *Use blue ball point pen only.*
7) *Each question carries **One mark.***
8) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General Medicine) (1x10=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

1) ***Use blue/black ball point pen only.***
2) ***Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.***
3) ***All questions are compulsory.***
4) ***The number to the right indicates full marks.***
5) ***Draw diagrams wherever necessary.***

2. Long Answer Question (Any 2 out of 3) (General Medicine) (2 x 10 = 20)

a) b) c)

3. **Short answer questions (1 from AETCOM) (General Medicine) (2 x 5 = 10)**

a) b)

4. Short answer questions (Any 2 out of 3) (At least 2 Clinical reasoning question) (DVL, Psychiatry & Respiratory Medicine) (2 x 5 = 10)

a) b) c)

Separate answer sheets for question 4 (SAQ from DVL, Psychiatry & Respiratory Medicine) may be used for the ease of evaluation.

Format / Skeleton of question paper 5th internal assessment

Theory Examinations (III MBBS Part II)

SECTION "A" MCQ

Instructions:

9) Put ☒ in the appropriate box below the question number once only.
10) Use blue ball point pen only.
*11) Each question carries **one mark.***
12) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20 MCQ) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

1) Use blue/black ball point pen only.
2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
3) All questions are compulsory.
4) The number to the right indicates full marks.
5) Draw diagrams wherever necessary.

SECTION "B" (60Marks)

2 . Long Answer Questions (Any 2 out of 3) (Structured Case Based) (General Medicine) (2x15=30)

a) b) c)

3.Short Answer Questions (Any 2 out of 3) (Any one should be Clinical reasoning), 1 from AETCOM (General Medicine) (2x5=10)

a) b) c)

4.Short Answer Questions (Any 4 out of 5) (General Medicine) (4 x 5 =20)

a) b) c) d) e)

SECTION "C" –Allied (20Marks)

***5.* Short Answer Questions (allied DVL, Psychiatry & Respiratory Medicine) (4 x 5=20)**

a) b) c) d)

Separate answer sheets for question 4 (SAQ from DVL, Psychiatry & Respiratory Medicine) may be used for the ease of evaluation.

Format / Skeleton of question paper for University Theory Examinations (III MBBS Part II) Paper – I

(Subject names to be removed)

Instructions:

SECTION "A" MCQ

13) *Put ☒ in the appropriate box below the question number once only.*
14) *Use blue ball point pen only.*
15) *Each question carries **One mark.***
16) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each) – (General Medicine) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

1) ***Use blue/black ball point pen only.***
2) ***Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.***
3) ***All questions are compulsory.***
4) ***The number to the right indicates full marks.***
5) ***Draw diagrams wherever necessary.***

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Medicine) (2x15=30)

a) b)

3.Short Answer Questions (Any one should be Clinical reasoning, 1 from AETCOM) (General Medicine) (3x5=15)

a) b) c)

SECTION "C"

4. Long Answer Question (Structured Case Based) (General Medicine) (1 x15=15)

a)

3.Short Answer Questions (General Medicine) (Any 4 out of 5) (4 x5=20)

a) b) c) d) e)

Format / Skeleton of question paper for University Theory Examinations (III MBBS Part II) Paper II

(Subject names to be removed)

SECTION "A" MCQ

Instructions:

17) Put ☒ in the appropriate box below the question number once only.
18) Use blue ball point pen only.
*19) Each question carries **One mark.***
20) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General Medicine , 2 DVL, 2 Respiratory Medicine, 1 Psychiatry) **(1 x20=20)**

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

1) Use blue/black ball point pen only.
2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
3) All questions are compulsory.
4) The number to the right indicates full marks.
5) Draw diagrams wherever necessary.

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Medicine) **(2x15=30)**

a) b)

SECTION "C"

3.Short Answer Questions (any 4 out of 5) (DVL) **(4x5=20)**

a) b) c) d) e)

4.Short Answer Questions (Any 3 out of 4) (Psychiatry) **(3 x5=15)**

a) b) c) d)

5.Short Answer Questions (Any 3 out of 4) (Respiratory Medicine) **(3 x5=15)**

a) b) c) d)

Indian Medical Graduate Training Programme The undergraduate medical education programme is designed with a goal to create an “Indian Medical Graduate” (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant.

COMPETENCY BASED CURRICULUM OF THE INDIAN MEDICAL GRADUATE PROGRAMME Specific Competencies- 1. Preamble 2. Integration 3. Pre-clinical Subjects 4. Second Professional (Para-Clinical) 5. Third Professional (Part I). 6. Third Professional (Part II).

Institutional Goals of Indian Medical Graduate Training Programme:-(Ref. THE GAZETTE OF INDIA : EXTRAORDINARY [PART III—SEC. 4]).

(1) In consonance with the national goals each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should: **(a)** be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations. **(b)** be competent to practice preventive, promotive, curative, palliative and rehabilitative medicine in respect to the commonly encountered health problems. **(c)** appreciate rationale for different therapeutic modalities; be familiar with the administration of “essential medicines” and their common adverse effects. **(d)** be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities. **(e)** possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

(f) be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following: **(i)** Family Welfare and Maternal and Child Health (MCH) **(ii)** Sanitation and water supply **(iii)** Prevention and control of communicable and non-communicable diseases **(iv)** Immunization **(v)** Health Education **(vi)** Indian Public Health Standards (IPHS), at various levels of service delivery **(vii)** Bio-medical waste disposal **(viii)** Organizational and/or institutional arrangements.

(g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, hospital management, inventory skills and

counseling. **(h)** be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures**. (i)** be able to work as a leading partner in health care teams and acquire proficiency in communication skills. **(j)** be competent to work in a variety of health care settings. **(k)** have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

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

Table 9: Learner - Doctor programme (Clinical Clerkship)

Year of Curriculum	Focus of Learner - Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness
Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

Table 5: Second Professional teaching hours

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

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

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

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

Table 1: Time distribution of MBBS Programme & Examination Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
							Foundation Course	I MBBS			
I MBBS								Exam I MBBS	II MBBS		
II MBBS								Exam II MBBS	III MBBS		
III MBBS Part I									Exam III MBBS Part I	Electives & Skills	
III MBBS Part II											
Exam III MBBS Part II		Internship									
Internship											

- One month is provided at the end of every professional year for completion of examination and declaration of results.

Table 8: Clinical postings

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

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

Clinical postings may be adjusted within the time framework.

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

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

[3] This posting includes Physical Medicine and Rehabilitation.

[4] This posting includes Radiotherapy, wherever available.

Table 2: Distribution of subjects by Professional Phase

Phase & year of MBBS training	Subjects & New Teaching Elements	Duration#	University examination
First Professional MBBS	• Foundation Course (1 month) • Human Anatomy, Physiology & Biochemistry, introduction to Community Medicine, Humanities • Early Clinical Exposure	1 + 13 months	I Professional
	• Attitude, Ethics, and Communication Module (AETCOM)		
Second Professional MBBS	• Pathology, Microbiology, Pharmacology, Forensic Medicine and Toxicology, • Introduction to clinical subjects including Community Medicine • Clinical postings • Attitude, Ethics & Communication Module (AETCOM)	12 months	II Professional
Third Professional MBBS Part I	• General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radiodiagnosis & Radiotherapy, Anesthesiology • Clinical subjects /postings • Attitude, Ethics & Communication Module (AETCOM)	13 months	III Professional (Part I)
Electives	• Electives, Skills and assessment*	2 months	
Third Professional MBBS Part II	• General Medicine, Pediatrics, General Surgery, Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties • Clinical postings/subjects • Attitude, Ethics & Communication Module (AETCOM)	13 months	III Professional (Part II)

*Assessment of electives shall be included in Internal Assessment.

Table 6: Third Professional Part I teaching hours

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

** The clinical postings in the third professional part I shall be 18 hours per week (3 hrs per day from Monday to Saturday).*

Table 7: Third Professional Part II teaching hours

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

* 25% of allotted time of third professional shall be utilized for integrated learning with pre- 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).

Distribution of Marks – Total 10 Marks

Sr. No.	Parameter		Marks	Phase
1	Drugs	5 Drugs	1	II (Second year)
		5 Drugs	1	III Part I (Third year)
		5 Drugs	1	III Part II (Fourth year)
2	Cases	CVS case-4	1	III Part I (Third year)
		RS Case-4	1	III Part I (Third year)
		Abdomen case-4	1	III Part I (Third year)
		Neurology case-4	1	III Part II (Fourth year)
3	Emergencies	2 Emergencies	1	II (Second year)
		5 Emergencies	1	III Part I (Third year)
		5 Emergencies	1	III Part II (Fourth year)
	Total-		**10**	

Drugs

Name of Drug-

Class/ Group of Drug-

Mechanism of action-

Dose of drug-

Paste picture of drug here

Indications-

Contraindications-

Adverse effects-

List the emergencies in which this drug is used

Pages 1 to 10 for 10 Drugs

Cases

Respiratory system case Proforma

History

I. *Cardinal symptoms:*Breathlessness, Cough,Expectoration,Hemoptysis,, Wheeze,Chest pain.

II. *History of tuberculosis:* Evening rise of temperature, night sweats, Anorexia and weight loss,Hemoptysis, Pleurisy, meningitis, lymphadenitis in pastor in family, TB contact.

III. *History of Mediastinal compression:* Dysphagia, Hoarse voice, Dyspnea and dry cough, Swelling over face

IV. *Habits:* Alcohol, smoking, tobacco or gutkachewing

V. *Aspiration:* Foreign bodies, vomitus.

VI. *For Industrial diseases:* Occupation, residencenear factories or mills

VII. *Allergy:*. Family history of asthma, hay fever, eczema, Rhinitis and Sinusitis: Nasal discharge, painand tenderness over sinuses, headache,recurrent cold

VIII. *Past history:*. Measles, influenza or whooping cough inchildhood (If bronchiectasis), Diabetes

IX. Past history of admissions in the hospital/ consultation with a doctor

X. Drug history-H/O medication patient is taking or has received in the past

General Examination

I. Built and nutrition

II. Nails and conjunctiva: Pallor, dubbing, cyanosis,icterus

III. lymphadenopathy (especially scalene nodeand cervical nodes), edema of feet, JVP

IV. TPR, BP

V. Spine

VI. *Stigma of tuberculosis:*Phlyctenular conjunctivitis, Scars and sinuses in neck or bones, Thickened spermatic cord, Erythema nodosum, Skin: Cutis vulgaris, scrofuloderma etc.

VII. *Neck:* Thyroid swelling. Tracheal tug

VIII. *Homer's syndrome:* Ptosis, miosis, anhydrosis,enophthalmos and absent ciliospinal reflex

IX. *Upper respiratory tract:* Sinus tenderness, Throat and tonsils, Posterior pharyngeal wall for posterior nasal drip, Alae nasi.

X. Gums and teeth. Exposure to TB, STD, HIV

Respiratory System Examination

I. Inspection:

A. Shape of chest

1. AP and transverse diameters: Barrelshaped chest, etc.
2. Hollowing, bulging, flattening orretraction
3. Sub-costal angle
4. Shoulders
5. Spine
6. Spinoscapular distance on both sides

B. Respiratory Movements

1. Respiratory rate
2. Rhythm
3. Character - Abdominal, thoracic, thoraco-abdominal or abdominothoracic
4. Equality
5. Accessory muscles of respiration
6. Inter-costal retractionI fullness

C. Mediastinum

1. Trailes sign
2. Apex impulse

D. Miscellaneous

1. **I.** Scars, sinuses

2. Pulsations
3. Dilated veins
4. Shinyskinoverlowerchest (Empyema,hepatic amebiasis)

II. Palpation

A. Findings ofinspection confirmed including

Chest Movements

B. Mediastinum

1. **I.** Trachea
2. Apexbeat

C. TACTILE VOCAL FREMITUS: TVF

D. Miscellaneous

Tenderness over lower inter costal spaces.

Other vibrations: Palpable rates, rhonchi,

Rub

Ill. Percussion:

A. Anteriorly

Rig/rt Side Left Side

1. Kronig's isthmus Kronig's isthmus.
2. Clavicular percussion Clavicular percussion
3. Intercostal resonance Intercostal resonance
4. Liver dullness Cardiac dullness
5. Tidal percussion Traube's area
6. Shifting dullness Shifting dullness
7. Percussion myokymia Percussion myokymia
8. Skodaic resonance

B. Posteriorly

1. Supra-scapular
2. Inter-scapular
3. Infra-scapular

C. In Axilla

1. Axillary
2. Infra axillary

IV. Auscultation:

A. ***Breath Sounds***

1. Normal or Diminished
2. Type: Vesicular, bronchial or vesicular

with prolonged expiration

B. Foreign Sounds: Rales, rhonchi or rub

C. Vocal Resonance

D. Miscellaneous

1. Bronchophony
2. Egophony
3. Whisperin g pectoriloquy
4. Succussion splash
5. Coin test
6. Post-tussive suction
7. Post-tussive rales

Differential/ Final Diagnosis

Anatomy (Where is the lesion?) e.g. Right upperlobe

Pathology (What is the lesion?) e.g. pneumonia

Etiology (What is the cause?) e.g. streptococci

Complications e.g. lung abscess

Risk factors e.g. smoking

Cardiovascular system case -Proforma

History

I. *Cardinal Symptoms*:Dyspnea on exertion or Breathlessness -including paroxysmal nocturnal dyspnea, orthopnea, platypnea and trepopnea, Chest Pain, Cough, Expectoration,Hemoptysis, Palpitation, Syncopal attacks

II. *Symptoms of Congestive Cardiac Failure (CCF)* Exertional breathlessness,Edema of feet, puffiness of face, anasarca,Distension of abdomen and pain inright hypochondrium, anorexia, nausea,vomiting

III. *Symptoms of Rheumatic Heart Disease (RHD)*Fever with sore throat,Fleeting joint pains and swelling, Involuntary movements (chorea), Nodules under the skin (rheumatic nodules)

IV. *Symptoms of Infective Endocarditis (SBE)*Pyrexia,Petechial hemorrhages,Pads of finger are tender (Osler nodes),Palpable spleen,Phalangeal dubbing,Prolonged treatment with high doses ofPenicillin,Hemoptysis, Hematuria, Hemiplegia,Phlebothrombosis

V. *Symptoms Suggesting Congenital Heart Disease*- Cyanotic spells,Squatting episodes

VI. *Pressure Symptoms* (Due to Enlarged Left Atriumor Aneurysm of Aorta)- Hoarseness of voice (pressure on therecurrent laryngeal nerve), Ortner'ssyndrome,Dysphagia (pressure on esophagus)

VII. *Miscellaneous*-

Family History: Hypertension, diabetes ,coronary artery disease, hyperlipidemia,congenital heart disease, cardiomyopathies

Past History of hypertension, diabetes ,coronary artery disease, hyperlipidemia,obesity, recurrent lower respiratoryinfection, tuberculosis, syphilis, STD, HIVinfection,

History of hospitalization Number of admissions, Duration of each admission, Investigations done e.g. ECG ,X-ray, Echocardiography, cardiaccatheterization, Diagnosis reached, if known; Drugs given e.g. diuretics, digitalis, Relief obtained or not, Advised surgery/intervention or not, *History of cardiac surgery, angioplasty or Valvuloplasty*

Physical Examination

General Examination

A. Build and nutrition
B. Nails and conjunctiva for pallor, icterus, dubbing, cyanosis.
C. Lymphadenopathy and thyroid swelling
D. Edema

E. Skin for petechial hemorrhages, Osler nodes,rheumatic nodules, xanthelasmas, xanthomas
F. Skeletal system - Kyphoscoliosis, polydactyly, cubitus valgus, etc.
G. TPR, BP
H. Features of Marfan's syndrome - tall, thin personwith long slender fingers, hyper-extensibility of joints, high arched palate, dislocation of lens

Peripheral

A. JVP - pressure and waves
B. Pulse - rate, rhythm, volume, character,equality, upstroke, downstroke, condition of vessel wall, apex pulse deficit and radiofemoral delay, carotid bruit.
C. Blood Pressure - both arms, supine andupright
D. Peripheral signs of wide pulse pressure asin AI, PDA, etc. e.g., pistol shot sounds over the femorals, Duroziez murmur, Corrigan'ssign, de Musset's sign, Quincke's sign,locomotor brachia!.

II. Central

A. Inspection:

1. l. Precordium
2. Apex impulse
3. Other pulsations - Parasternal, epi-gastric, suprasternal, in the neck, in the second left space and on right side
4. Dilated veins
5. 5.Scars, sinuses, etc.

B. Palpation:

1. Apex beat
2. Left parasternal heave
3. Diastolic shock (Palpable S2)
4. Thrills
5. Other pulsations

C. Percussion:

1. Left second and intercostal space dullness

2. Upper border
3. Right border
4. Left border
5. .Lower sternal resonance
6. Liver dullness and Stomach tympany for situs solitus or inversus

D. Auscultation:

1. Heart sounds
2. Murmurs - Systolic, diastolic or continuous.Other sounds e.g. pericardia! rub,opening snap, ejection clicks, etc.

Differential/ Final Diagnosis-

Central Nervous System Proforma

History

I. Name, Age, Sex, Occupation, Right or Lefthanded, Consanguinity

II. Motor symptoms

A. *Power:*

1. Upperlimbs:

a) Proximal: Lifting the arm abovethe head, eating.

b) Distal: Sewing, writing, buttoning,turning a key in a lock, etc.

2. Lower limbs:

a) Proximal: Climbing stair up anddown, squatting and getting upfrom squatting position.

b) Distal: Slippers falling from foot

c) Running, walking with or withoutsupport, standing with outsupport, moving limbs in thebed or complete paralysis.

Truncal : turning in bed.

B. *Nutrition:* Wasting of muscles (proximal

or distal), atrophy, hypertrophy.

C. *Coordination:*

1. Unsteadiness (For cerebellar ataxia).

2. Difficulty in feeling the ground andunsteadiness increasing in the dark.(For sensory ataxia).

3. Difficulty in reaching the target.

D. *Involuntary movements:*Chorea, athetosis, tremors, dystonia, hemiballismus flexor spasms, fasciculations, titubation.

III. Sensory symptoms

A. Tingling, numbness, root pains

B. Feeling hot and cold water during a bath

C. Feeling the ground well or ground feels likecotton wool.

IV. Sphincter disturbances

A.*Bladder:*

1. Feeling the sensation of bladderfullness

2. Initiation of micturition immediatelywhen desired

3. Control of micturition, once the desireto micturate has occurred

4. Complete evacuation of the bladderor a feeling of residual urine

5. Inability to pass urine at all

6. History of catheterization

B.*Bowel:* Constipation / Loose Stools

C.*Impotency:* In males

Cranial nerves

A. *Sensation of smell* **- 1st CN**

B. *Vision* **- acuity and color - 2nd CN**

C. *Diplopia, squint* **- 3rd, 4th, 6th CN**

D. *Sensations* **(Tingling, numbness over the**

face, and difficulty in chewing) - 5th CN

E. *Facial asymmetry, dribbling of saliva fromthe angle of the mouth, stasis off ood in themouth-* **7th CN**

F. *Vertigo, tinnitus, deafness* **- 8th CN**

G. *Hoarse voice, nasal twang, nasalregurgitatiotldysphagia* **- 10th + 9th CN**

H. *Dysarthria* **- 12th CN**

Abdomen case proforma

History

I. Anorexia, nausea, vomiting, dysphagia,flatulence, eructation, retrosternal burning, water brash

II. Diarrhea, constipation, clay stools, worms instools, mucus and blood in stools

III. Abdominal pain, lump, and distension

IV. Hematemesis, melena, bleeding per rectum

V. Jaundice, gynecomastia, loss of libido, loss of hair (for liver cell failure), reversal of normal sleep cycle.

VI. Fever, weight Joss

VII. Alcohol, smoking

VIII. Past history of tuberculosis, malaria, kala-azar, leukemia, hemolytic crisis (sudden pallor and dyspnea) sexual contact, drugs.

General Examination

I. Vital signs - TPR, BP

II. Built and nutrition, BMI (body mass index)

III. Pallor, Clubbing, Nails (chalky-white nails koilonycnia) cyanosis, icterus.

IV. Edema feet, lymphadenopathy, JVP

V. Signs of liver cell failure: Scanty hair, palmar erythema, spider nevi, parotid swelling,gynecomastia, testicular atrophy, Dupuytren'scontractures, flaps (asterixis), paper money skin.

VI. Stigma of tuberculosis: Scars and sinuses in neck,lymphadenopathy, phlyctenular conjunctivitis, thickened spermatic cord, chest signs, etc.

VII. Skin extoriations, ecchymosis or petechiae,cutaneous markers of GI malignancy.

VIII. Eye :Kayser - Fleischer ring on slit lamp

Examination of cornea.

IX. Miscellaneous: Bony tenderness, genitals.

Alimentary System Examination

I. Oral cavity, Teeth,Tongue, Tonsils, Oropharynx

II. Abdomen:

A. Inspection:Skin,Shape of abdomen,Umbilicus,Abdominal movements,Pulsations,Dilated veins,Peristalsis, Scars and sinuses,Hernial orifices.

B. Palpation:

I. Tenderness, guarding and rigidity onsuperficial palpation.

2. Liver, spleen, kidney, gall bladder,colon, or any other lump (Its size,surface, borders, tenderness and

bruit}

3. Fluid thrill

C. Percussion:

I. Horseshoe and shifting dullness.

2. Dullness over any lump, if palpable.

3. Renal angle tenderness (i.e. anglebetween one 12th rib & outer borderof erector spinae) seen in perinephricabscess.

D. Auscultation:

1.Peristalsis2. Rub3. Arterial Bruit or venous hum4. Puddles sign

E. Miscellaneous:

1.Abdominal girth2. PR examination3. Proctoscopy

Emergencies-

1. Basic Life support and Advanced cardiac Life support (BLS & ACLS)
2. Organophosphorous poisoning/ Paraquate poisoning
3. Snake bite
4. Anaphylactic shock
5. Acute myocardial infarction
6. Acute Complications of Acute myocardial infarctions
7. Upper GI Bleed/ Hematemesis
8. Hypertensive emergencies
9. Shock
10. Pulmonary embolism
11. Acute respiratory failure
12. Acute renal failure
13. Status asthamaticus
14. Severe hypokalemia
15. Severe hyperkalemia
16. Status epilepticus
17. Hepatic encephalopathy
18. Diabetic ketoacidosis
19. Hyperosmolar Coma
20. Severe hypoglycaemia

Maharashtra University of Health Sciences

PHASE II to Phase IV MBBS

COMPETENCY BASED CURRICULUM-2019 batch

GENERAL MEDICINE LOG BOOK

NAME OF COLLEGE-

NAME OF STUDENT-

ROLL NUMBER- **BATCH – A/B/C/D/E/F**

CONTENTS

PERSONAL DETAILS

Name of student-

Mobile Number-

Residential Address-

Photo stick here

Father/Guardians contact no.

Email-

Email of Father/Guardian-

Date of admission to MBBS course-

Date of beginning of current phase-

LOGBOOK CERTIFICATE (General Medicine)

This is to certify that the candidate Mr/ Ms ……, Reg No....., admitted in the year 2019-20 in the ---------- Medical College,---------- has satisfactorily completed / has not completed all assignments /requirements mentioned in this logbook for Second to fourth year MBBS course in the subject(s) of General Medicine Foundation Course/ AETCOM during the period from …… to…… . She / He is / Eligible/ not eligible to appear for the summative (University) assessment as on the date given below.

Signature of all Unit In charges-

Signature of Head of the Department

Principal/Dean of the College

Place:
Date:

GENERAL INSTRUCTIONS

1. The logbook is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her logbook.
2. The log book is a record of the academic / nonacademic activities of the student. Each Medical student is responsible for maintaining their logbook.
3. This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II to Phase IV Professional MBBS students in the subject of General Medicine.
4. Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly singed by the supervising faculty.
5. Entries in the logbook will be in accordance with activities done in the departments and has to be scrutinized by the Head of all the concerned departments.
6. The logbook shall be kept as record work of the candidate for that department / specialty & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A clear record of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least 5 years after completion of the examination. Institutions may be asked to provide these details by the University as and when required.

2. The contents in the log book are suggested guidelines. The institutions can make necessary changes as per the needs.

3. The student is responsible for getting the entries in the logbook verified by the Faculty in charge regularly.

4. Entries in the logbook will reflect the activities undertaken in the department & have to be scrutinized by the Head of the concerned department.

5. The logbook is a record of various activities by the student like:- Overall participation & performance, Attendance, Participation in sessions, Record of completion of pre-determined activities., Acquisition of selected competencies.

Record of Attendance for Theory and clinical postings

	Duration	Practical		Theory		Signature of Unit in charge/ HOD
		No of days	Days attended	No of days	Days attended	
Phase II						
First clinical posting	4 weeks					
Second clinical posting	4 weeks					
Phase III Part I	8 weeks					
Phase III Part I	4 weeks					

Dates of completion of clinical postings

Phase	From	To	Absent days	Journal completed	Signature of unit in charges with name and dates
II					
III Part I					
III Part II					

SCHEME OF EXAMINATION - Internal Assessment

Sr. No.	Internal assessment	Date/Month /Year	Marks obtained		Out of 4.5	Signature of student
			Theory out of	Practical out of		
1	First	September				
2	Second	September				
3	Third Part I	October				
4	Third Part II	January				
	Total					
	Round up-					

Duration and details of course

Sr. No.	Phases		Semester	No of Months
1	I	First professional Preclinical phase	Semester 1 & Semester 2	1 + 12 months
2	II	Second professional Paraclinical Phase	Semester 3 & Semester 4	11 Months
3	III Part I	Third professional Clinical Phase	Semester 5 & Semester 6	13 Months
4	Electives, skills and assessment			2 Months
5	III Part II	Third professional Clinical Phase	Semester 7, Semester 8 Semester 9	13 Months

Phase	Hours	Total hrs
First I		
Early clinical exposure	90	
Second II		
Lectures	75	615 hrs
Tutorial/Seminars/Integrated learning	--	-
Self directed learning	--	--
Third Part I		
Lectures	25	65 hrs
Tutorial/Seminars/Integrated learning	35	
Self directed learning	5	
Third Part II		
Lectures	70	210 hrs
Tutorial/Seminars/Integrated learning	125	
Self directed learning	15	

Theory teaching

Learner – Doctor Programme (Clinical clerkship) (Reference- The Gazette of India: Part III-sec.4 pg 74-74)

The learner will function as a part of the health care team with the following responsibilities:

(i) Be part of the unit's outpatient services on admission days,
(ii) Remain with the admission unit until 6 PM except during designated class hours,
(iii) Be assigned patients admitted during each admission day for whom he/she will undertake responsibility, under the supervision of a senior resident or faculty member,
(iv) Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
(v) Follow the patient's progress throughout the hospital stay until discharge,
(vi) Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients (according to responsibilities outlined in table 9),
(vii) Participate in unit rounds on at least one other day of the week excluding the admission day,
(viii) Discuss ethical and other humanitarian issues during unit rounds,
(ix) Attend all scheduled classes and educational activities,
(x) Document his/her observations in a prescribed log book / case record.
(xi) No learner will be given independent charge of the patient.

Year of curriculum	Focus of Learner- Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness

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

Details of internal assessment

Internal Assessment Subject: General Medicine

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onward

Phase	**I-Exam (At the end of first term)**			**II-Exam (At the end of second term)**		
	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks
Second MBBS	50	50	100	50	50	100

Phase	**I-Exam (At the end of first term)**			**II-Exam (At the end of second term)**		
	Theory	Practical (Including 10 Marks each for Journal & Log Book	Total Marks	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks
III/I MBBS	50	50	100	50	50	100

Phase	**I-Exam (at the end of first term)**			**II-Exam Preliminary examination**		
	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks	Theory	Practical (Including 10 Marks each for Journal & Log Book)	Total Marks
III/II	50	50	100	200	200	400

MBBS				(100 x 2 papers)		

1. There will be 5 internal assessment examinations (2 each in 2nd MBBS and 3rd Part I and 1 in 3rd Part II MBBS) in the Subject of General Medicine and 1preliminary examination (3rd Part II MBBS). The structure of the internal assessment theory examinations should be similar to the structure of University examination.
2. It is mandatory for the students to appear for all the internal assessment Examinations in the respective phases. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.
3. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
4. Internal assessment marks for theory and practical will be converted to out of
5. 100. Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University.
6. Conversion Formula for calculation of marks in internal assessment examinations
7. Formula for Theory (out of 450) = Total marks/4.5 Formula for Practical (out of 450) = Total marks/4.5
8. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	**Final rounded marks**
13.01 to 13.49	13
13.50 to 13.99	14

9. Students 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 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.
10. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

11. Preliminary examination (3rd Part II MBBS). The structure of the internal assessment theory examinations should be similar to the structure of University examination.
12. It is mandatory for the students to appear for all the internal assessment Examinations in the respective phases. A student who has not taken minimum required number of tests for Internal Assessment each in theory and practical will not be eligible for University examinations.
13. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It should be taken after preliminary examination and before submission of internal assessment marks to the University.
14. Internal assessment marks for theory and practical will be converted to out of
15. 100. Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University.
16. Conversion Formula for calculation of marks in internal assessment examinations
17. Formula for Theory (out of 450) = Total marks/4.5 Formula for Practical (out of 450) = Total marks/4.5
18. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table

Internal Assessment Marks	**Final rounded marks**
13.01 to 13.49	13
13.50 to 13.99	14

19. Students 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 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.
20. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

Second MBBS Practical Mark's Structure

Internal Assessment Examinations

(Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards)

II MBBS- TERM-I

Seat No.	JOURNAL	LOG BOOK	OSCE-1	OSCE-2	OSCE-3	OSCE-4	CASE	Practical Total
Max. Marks	10	10	5	5	5	5	10	50

- **OSCE DETAILS: 1.** History taking of a particular symptom; **2**. Demonstration of signs- Pulse/BP/JVP; **3.** Identification of General Examination Finding; **4.** Communication Skills with Pt or Relative

II MBBS- TERM-II

Seat No.	JOURNAL	LOG BOOK	OSCE-1	OSCE-2	OSCE-3	OSCE-4	CASE	Practical Total
Max. Marks	10	10	5	5	5	5	10	50

OSCE DETAILS: 1. Demonstration of Syst Exam signs; **2.** Spot Diagnosis - Jaundice, Clubbing, LN etc; **3**. Drugs Indication/Contraindication/ Adverse Effects Etc; **4.** Equipment – Name / Indication/ Contraindications

Paper wise distribution of topics for Internal assessment
Year: Second MBBS
Subject: GENERAL MEDICINE

Internal Assessment	**Section**	**Topics**
I (50 marks)	**Section A** MCQs on all topics (15x1=15 marks) **Section B** SAQ on all topics (4x5=20) **Section C** LAQ on all topics (15x1=15 marks)	Fever & Febrile Syndromes
		HIV
		Diarrhoeal Diseases
		Envenomation
II (50 marks)	**Section A** MCQs on all topics (15x1=15 marks) **Section B** SAQ on all topics (4x5=20) **Section C** LAQ on all topics (15x1=15 marks)	Pneumonia
		Miscellaneous Infections
		Poisoning
		Nutrition & Vitamin Deficiencies

Year: III-I MBBS Subject: GENERAL MEDICINE

Internal Assessment	Section	Topics
I (50 marks)	**Section A** MCQs on all topics (15x1=15 marks)	Hypertension
		Heart failure
	Section B SAQ on all topics (4x5=20)	
		Acute MI/IHD
	Section C LAQ on all topics (15x1=15 marks)	The role of physician in the community
		AET-COM

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Subject: General Medicine

Paper	Section	Topics
I (100 marks)	**Section A** MCQs on all topics of the paper I (20x1=20)	Fever & Febrile Syndromes
		HIV
		Diarrhoeal Diseases
		Pneumonia
		Envenomation
	Section B SAQ on all topics of the paper I (7x5=35)	Miscellaneous Infections
		Poisoning
		Nutrition & Vitamin Deficiencies
		Anaemia
	Section C LAQ on all topics of the paper I (3x15=45)	Obesity
		Hypertension
		Heart failure
		Acute MI/IHD
		The role of physician in the community
		AET-COM
II (100 marks)	**Section A** MCQs on all topics of the paper II (20x1=20)	GI Bleed
		Liver Diseases
		Mineral Fluid Electrolyte and acid base disorder
		Acute kidney injury and chronic renal failure
		Headache
	Section B SAQ on all topics of the paper II (7x5=35)	Cerebrovascular accident
		Movement disorder
		Diabetes
		Thyroid Dysfunction
		Rheumatological Problems
	Section C LAQ on all topics of the paper II (3x15=45)	Common Malignancies
		Geriatrics
		Psychiatry, Dermatology & Leprosy (DVL) and Respiratory Medicine including Tuberculosis
		AET – COM

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NAS

FORMAT / SKELETON OF QUESTION PAPE

1. Course and Year	: **Second/ III-I/ III-II MBBS** *(applicable w.e.f. August 2021 & onwards examinations)*						2. Subject Code	
3. Subject (PSP)	:							
(TT)	:							
4. Paper :	: ***I/II***	5. Total Marks	: _____	6. Total Time	: **3 Hrs.**			
7. Web Pattern	: [ ]	8. Web Skeleton	: [ ]	9. Web Syllabus	: [ ]		10. Web Old QP	

Instructions:

SECTION "A" MCQ

1) *Put ☒ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries* ***One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink o marked.*

SECTION "A" MCQ (_____Marks)

1. Multiple Choice Questions (Total _____ MCQ of One mark each)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

1) *Use* ***blue/black*** *ball point pen only.*
2) ***Do not*** *write anything on the* ***blank portion of the question paper****. If written anything, such type an attempt to resort to unfair means.*
3) ***All*** *questions are* ***compulsory****.*
4) *The number to the* ***right*** *indicates* ***full*** *marks.*
5) *Draw diagrams* ***wherever*** *necessary.*
6) *Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipu paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any ques claim that the Question is out of syllabus. As It is only for the placement sake, the distribution has*
7) *Use a common answerbook for all sections.*

SECTION "B" (_____ Marks)

2 Short Answer Questions (Any _____out of _____)

a) b) c) d) e)

3 Long Answer Questions (Any ____ out of _____)

a) b) c)

SECTION "C" (_____Marks)

4. Short answer questions (Any _____ out of _____)

a) b) c) d) e)

5. Long Answer Questions (Any _____out of _____)

a) b) c)

Assessment of Skill competencies

Assessment of DOAP Sessions

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.12	Pulse examination with demonstration				
	1.13	Measure BP accurately				
	1.14	JVP				
	4.10	Examination of skin, lymph node, chest and abdominal examination				
	2.7	CVS Examination with demonstration				
	3.4 & 3.5	Orientation to history taking, general examination & systemic examination of Respiratory system				
Phase III part II (fourth year)	IM 3.9/ IM 5.15	Demonstrate in a mannequin and interpret results of a pleural fluid Aspiration				
	IM5.15	Assist in the performance and interpret the findings of an ascitic fluid analysis	Mannequins/bedside clinic/Real patient			
	M6.15/ M 17.8 17.9	Demonstrate in a model the correct technique to perform a lumbar Puncture	Mannequins/bedside clinic/ Real patient			
Feedback by Faculty-						
Phase II						
Phase III Part I						
Phase III Part II						

Assessments of Skill acquisition Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.30	Intramuscular injection	Simulator / Mannequin/Small group discussion			
		Ward round • Communication with patient • Patient Education				
Phase III **Part I**	IM4.15	Peripheral blood smear interpretation&Perform and interpret a malarial smear	Small group discussion			
		Ryles tube insertion	Simulation/ Real patient			
	IM4.20	Interpret a PPD (Mantoux)	Small group discussion			
	IM11.19	Demonstrate(and counsel) patients on the correct technique to administer insulin	Real patient			
	IM3.17	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and	Small group discussion			

		indications for ventilation (K)				
	IM11.13	Bedside urine analysisv&vPerform and interpret aurinary ketone estimation with a dipstick	Real patient			
	IM15.2 M15.11	Setting up IV infusion and calculating drip rate	Seminar/ Small group discussion /Casualty real patient			
Phase III part II (fourth year)	IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture	Simulators/manneq uin			
	IM4.19	Assist in the collection of blood	Bed side clinics			
	IM11.12	Perform and interpret a capillary blood glucose test	Real patient			
	IM25.9	Assist in the collection of blood and other specimen cultures	Bed side clinic/real patients			
	IM9.19	Assist in a blood transfusion	Bed side clinic/real patients			
	IM15.13	Observe cross matching and blood / blood component transfusion	Bed side clinic/real patients			
	IM2.22	Perform and demonstrate in a mannequin BLS	DOAP			
	IM2.21	Observe and participate in a controlled environment an ACLS Program	Session in skills lab			
Feedback by Faculty						
Phase III Part I						

Phase III Part II	

Assessments of case presentation Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	20.4 & 20.5	Medical emergency - snake bite – Elicit, present and document an detail history, Perform a systematic examination, document and present a local, appropriate cardiac and neurologic examination	Seminar/ Small Group discussion			
	CT2.20	Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Lecture/ seminar/small group discussion /bedside clinic			
	CT2.22	Demonstrate and counsel patient on the correct use of inhaler	Small group discussion			
Phase III part II (fourth year)	IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter	Seminar / lecture			
	IM11.20	Demonstrate to and counsel patients correct technique on the of self-monitoring of blood glucoses	Seminar/lecture			
	IM15.2	Enumerate, describe and discuss the evaluation and steps involved in	Seminar/lecture/smal			

		stabilizing a patient who presents with acute volume loss and GI Bleed	l 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	Seminar/lecture/small group discussion			
	AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates	Seminar/lecture/small group discussion			
	IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	Seminar/lecture/small group discussion			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of OSCE

Phase	Competency Nos.	Topics & Subtopics	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	IM4.15 IM9.10	Perform and interpret a malarial smear Describe, perform and interpret a peripheral smear			
	IM11.13 BI11.4	Perform and interpret a urinary ketone estimation with a dipstick Perform urine analysis to estimate and determine			

		normal and abnormal constituents			
		Interprete Chest X Ray			
		Interprete blood culture			
		Interprete Hemogram- CBC etc			
		Interprete Liver function tests			
		Interprete CSF analysis			
		Interprete ascitic, pleural fluid			
		Interprete ABG			
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Skill acquisition Vertical integration

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase III	OG35.17	OBGY Demonstrate the correct technique of urinary catheterization in a simulated/ supervised environment	Small group discussion / real patient/ simulation			
	CT2.20	Chest Medicine – Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Seminar/ Group discussion			
	CT2.22	Chest Medicine- Demonstrate and counsel patient on the correct use of inhalers	Small group discussion / Role play/ Real patient			
	AS2.1	Enumerate the indications,	DOAP			

		describe the steps and demonstrate in a simulated environment **basic life support in adults children and neonates**	Session in skills lab			
	AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment **advanced life support in adults and children**	DOAP Session in skills lab			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Integrated teachings-

Phase	Subject	Hours	Competency Nos. Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I		**Total 9 hours (3 hours each for clinical Pharmacology, clinical Pathology and Clinical microbiology)**					
	Clinical Pharmacology	3hours	Clinical pharmacokinetics-1 hr Adverse drug reaction-1 hr Drug-Drug interaction-1 hr				
	Clinical Pathology	3hours	Anaemia and haemoglobinopathies-1 hr Hematological malignancies-1 hr Platelet disorder-1 hr				
	Clinical Microbiology	3hours	Pyrexia of unknown origin -1 hr Antimicrobial resistance -1 hr Viral haemorrhagic fever -1 hr				
III Part II		**Integrated teachings- Total 19 hours**					
	Care of patients during Pandemics	6 hours	Interactive Discussion- 2 hours Triage practices to be followed Primary care to be given to a patient on reaching hospital				

			Steps t be taken to reduce transmission of infections in emergency area Role Play- 1 hour Visit to hospital with discussion with staff- 2 hour Debriefing and feedback- 1 hour				
	Emergency Procedures during Pandemics	8 hours	Interactive Discussion – 2 hours 1. Indications for invasive procedures in Pandemics 2. Points to be verified before emergency procedures 3. Steps to be taken to reduce transmission of infections 4. Attitude and Communication Issues related to complicated procedures II. Skill development program – with mannequins e.g. intubation, CPR, ALS, PALS etc - 4 hours (This may be linked with the routine Skill training component as well) III. Role Plays for communication skills and documentation - 1 hour IV. Debriefing and Feedback - 1hour				
	Managing Death during Pandemics	2 hours	Interactive discussion – 1 hour a. Confirmation and documentation of death b. Steps to be taken to reduce transmission of infections c. Attitude and Communication Issues related to handling of dead bodies d. Responding to media ii. Role Play for communication skills and documentation with debriefing and feedback - 1 hour				
	Geraiatrics	3 hours	Polypharmacy Falls Incontinence				
Feedback by Faculty							
Phase III Part I							
Phase III Part II							

AETCOM

75% Attendance is required for eligibility to appear for final examination in each professional year.

Maharashtra University of Health Sciences General Medicine Task Force for CBME Implementation			
Summary of AETCOM modules for Third and Fourth professional years			
	Third professional Year	**Fourth Professional Year**	Total
Number of Modules	5	9	14
Number of Hours for training	19	28	47
Number of Hours for SDL	06	16	22
Number of hours to be shown in time table of respective departments for AETCOM			
Hours of training by Medicine	10	15	25
Hours of training by Surgery	10	15	25
Hours of training by OBGY	05	09	14
Hours of training by Pediatrics	00	05	05

Assessment of AETCOM -

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
II	26.20	Demonstrate ability to communicate to patients in a respectful, non threatening, non judgemental and empathetic manner	**Small group discussion/Role play**			
	26.21 & 26.22	- Demonstrate respect to patient privacy - Demonstrate ability to maintain confidentiality in patient care	**Lecture/ Small group discussion**			
	26.19 , 26.24 & 26.25	- Demonstrate ability to work in a team of peers and superiors - Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers- Demonstrate responsibility and work ethics while working in the health care team	**Lecture/ self directed learning/Small group discussion**			
	26.35	Demonstrate empathy in patient encounters	**Role play/ Case presentation**			
III Part I	26.29 - 26.31	Role of Physician in Community- Communicate diagnostic and therapeutic options to patient and family in a simulated environment Communicate care options to patient and family with a terminal illness in a simulated environment Demonstrate awareness of limitations and seeks	Lecture/ Small group discussion/Role play			

		help and consultations appropriately				
Module 3.3		Administer informed consent and appropriately address patient queries to a patient undergoing a Surgical/ therapeutic procedure in a simulated environment	Small group discussion/ Real patient/ Role play			
Module 4.4		Communication, Attitude and Ethics **Empathy, Doctor Patient Relationship , Effective Communication in terminally ill**	CBL /video with interactive lecture, role play / small group session with standardized patient in soft skills lab.			
Module 4.5		Ethics and attitude **Doctor Industry relationship- Conflicts of interests in patients care and professional**	Role play/ CBL with interactive lecture			
Module 4.8		Communication, Attitude and Ethics **Empathy, Death declaration, Handling emotions during death, Euthanasia , Breaking Bad News effectively**	CBL /video with interactive lecture, role play / small group session with standardized patient as relative in soft skills lab.			
Phase III Part II						
Module 4.1		**Foundation of Communication 5 Effectively communicating Diagnosis, Prognosis and therapy (Counseling skills)**	**Small group teaching with soft skills lab session related to Counseling skills**			
Module 4.2		Ethics Abortion, MTP, Reproductive rights and ethical conflicts	CBL with interactive lecture (Can be a large class teaching)			

Module 4.9		Ethics Legal aspects of Care, Medical negligence and malpractices	CBL with interactive lecture/ small group discussions			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of Tutorials

Phase	Topic	Hours	**Attempt at activity First (F) Repeat (R) Remedial (Re)**	**Decision of faculty Completed (C) Repeat (R) Remedial (Re)**	**Initial of faculty and date**
III Part I	Medical emergencies	1 hr			
	Valvular heart disease in adults	1 hr			
	Acynotic congenital heart disease in adults (ASD,VSD,PDA)	1 hr			
	Cynotic congenital heart disease in adults (TOF)	1 hr			
	Instruments- Video of procedures/Real/casewise	1 hr			
	Instruments	1 hr			
	X rays	1 hr			
	X rays	1 hr			
	ECG- Approach to basics of ECG	1 hr			
	ECG- How to read ECG?	1 hr			
III Part II	**ECG-**	10 Hours			
	How to interprete ECG?	1 hr			
	ECG-Diagnosing Myocardial infarctions	1 hr			
	ECG: Chamber enlargement	1 hr			
	ECG-Bundle branch blocks	1 hr			
	Electrolyte abnormalities on ECG	1 hr			
	Narrow Complex tacchyarrythmias	1 hr			

	Bradyarrthmias	1 hr			
	Valvular Heart diseases	1 hr			
	ECG Quiz	1 hr			
	Misceleneous	1 hr			
	Radiology-	**11 Hours**			
	Basics of Chest X Ray	1 hr			
	Reading Normal X Ray Chest	1 hr			
	Abnormalities on Chest X Ray – Cardiovascular system	1 hr			
	Pulmonary venous hypertension vs pulmonary arterial hypertension	1 hr			
	Chest X ray – Respiratory system	1 hr			
	Abdominal system(Chest & Abdomen X Ray)	1 hr			
	Miscelleneous X ray	1 hr			
	Basics of CT Scan	1 hr			
	Basics of MRI	2 hr			
	Basics of PET scan	1 hr			
	Drugs- Case based approach	**13 Hours**			
	Anti epileptics	1 hr			
	Cardiovascular Drugs	1 hr			
	Anti Tubercular Therapy	1 hr			
	Anti Retroviral Therapy	1 hr			
	Emergency Drugs	1 hr			
	Antiviral Drugs	1 hr			
	Drugs in respiratory system	1 hr			
	Glucocorticoids	1 hr			
	Drugs in Rheumatology	1 hr			
	Anticoagulants	1 hr			
	Inotropes and inodilators	1 hr			
	Anti hypertensives	1 hr			
	Antidiabetic drugs	1 hr			
	Interpretation of Lab Charts	**12 Hours**			
	Interpretation of Ascitic fluid analysis				
	Interpretation of Pleural fluid analysis				
	Interpretation of Cerebrospinal fluid analysis				

	Interpretation of Abnormal LFT				
	Interpretation of Anemia				
	Interpretation of thyroid function test				
	Interpretation of Peripheral blood smear				
	Interpretation of urine analysis				
	Interpretation of Fundus examination				
	Interpretation of renal function tests				
	Interpretation of Bone marrow studies				
	Interpretation of ABG				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Seminars

Phase	Topic	Hours	**Attempt at activity First (F) Repeat (R) Remedial (Re)**	**Decision of faculty Completed (C) Repeat (R) Remedial (Re)**	**Initial of faculty and date**
III Part I	**Seminars**	**16 Hours**			
	Clinical approach to Ascites				
	Clinical approach to Anaemia				
	Clinical approach to lymphadenopathy				
	Clinical approach to Jaundice				
	Clinical approach to chest pain				
	Clinical approach to headache				
	Clinical approach to bleeding diathesis				
	Clinical approach to Comatose patient				
	Portal hypertension and its complications				
	Pulmonary arterial hypertension				
	Pulmonary function tests				
	Thyroid function tests				
	Grave's disease				
	Micro-vascular complications of DM				
	Macro-vascular complications of DM				

	Insulin and analogues				
III Part II	Seminars	**45 hours**			
	Clinical approach to Hypertensive emergencies				
	Clinical approach to Acute myocardial infarction				
	Clinical approach to solitary Seizure				
	Clinical approach to ischemic stroke				
	Clinical approach to intracranial bleed				
	Clinical approach to Heart Failure				
	Clinical approach to Acute renal failure				
	Clinical approach to Chronic kidney disease				
	Clinical approach to hyponatremia				
	Clinical approach to potassium imbalance disorders				
	Clinical approach to disorders of calcium metabolism				
	Interpretation of ABG				
	Mixed Acid Base disorders				
	Emerging Viral Infections				
	Clinical approach to Geriatric Syndromes				
	Clinical approach to a case of Pulmonary Tuberculosis				
	Clinical approach to a case of Extra Pulmonary Tuberculosis				
	Clinical Approach to a case of PLHIV				
	Clinical approach to opportunistic infections in a case of PLHIV				
	Clinical approach to prescription of ART				
	Clinical approach to a case of Dengue				
	Clinical approach to a case of Complicated malaria				
	Recent advances in the diagnosis of tuberculosis				
	Vaccines for tuberculosis				
	Recent advances in anti retroviral drugs				
	Clinical approach to a case of Interstitial lung disease				
	Clinical approach to a case of snake bite				

	Clinical approach to a case of electric injury				
	Clinical approach to a case of acute meningitis				
	Clinical approach to a case of Chronic meningitis				
	Ageing				
	Human Microbiome				
	Clinical approach to oncological emergencies				
	Clinical approach to a case of Acute Leukemia				
	Clinical approach to a case of Chronic leukemia				
	Medicolegal, socioeconomic and ethical issues as it pertains to organ donation				
	Role of physician in community				
	Medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care				
	Medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care				
	Medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects				
	Medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)				
	Documentation in health care (including correct use of medical records)				
	Use of information technology that permits appropriate patient care and continued learning				
	Understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors				
	Conflicts of interest in patient care and professional				

	relationships and describe the correct response to these conflicts				
	Clinical approach to a case of DIC				
	Clinical approach to a case of arthritis				
	Clinical approach to a case of multisystem involvement				
	Clinical approach to a case of peripheral neuropathy				
	Clinical approach to a case of flaccid quadriparesis				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Theory Competencies

1	2	3	4	5	6	7	8
Competency # addressed	**Name of Activity**	**Date completed: dd-mm-yyyy**	**Attempt at activity** First or Only (F) Repeat (R) Remedial (Re)	**Rating** Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	**Decision of faculty** Completed (C) Repeat (R) Remedial (Re)	**Initial of faculty and date**	**Feedback Received** Initial of learner
Heart Failure							
IM1.10	Elicit, document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including presenting complaints, precipitating and exacerbating factors, risk factors						
IM1.11	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation						
IM1.12	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure						
IM1.13	Measure the blood pressure accurately, recognise and discuss alterations in blood						

	pressure in valvular heart disease and other causes of heart failure and cardiac tamponade						
IM1.14	Demonstrate and measure jugular venous distension						
IM1.15	Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations						
IM1.16	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis						
IM1.17	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures						
IM1.18	Perform and interpret a 12 lead ECG						
IM1.20	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						
IM1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy						
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture						

IM1.23	Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations						
IM1.26	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology						
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient						
Acute Myocardial Infarction/ IHD							
IM2.6	Elicit document and present an appropriate history that includes onset evolution, presentation risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes						
IM2.7	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation						
IM2.8	Generate document and present a differential diagnosis based on the clinical presentation and prioritise based on “cannot miss”, most likely diagnosis and severity						
IM2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the						

	clinical presentation						
IM2.10	Order, perform and interpret an ECG						
IM2.11	Order and interpret a Chest X-ray and markers of acute myocardial infarction						
IM2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context						
IM2.22	Perform and demonstrate in a mannequin BLS						
IM2.24	Counsel and communicate to patients with empathy lifestyle changes in atherosclerosis / post coronary syndromes						
Pneumonia							
IM3.4	Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk						
IM3.5	Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of disease						
IM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						

IM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG						
IM3.8	Demonstrate in a mannequin and interpret results of an arterial blood gas examination						
IM3.9	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration						
IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture						
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing						
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum						
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum.						
IM3.14	Perform and interpret a sputum gram stain and AFB						
IM3.18	Communicate and counsel patient on family on the diagnosis and therapy of						

	pneumonia						
Fever and febrile syndromes							
IM4.9	Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use						
IM4.10	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)						
IM4.11	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine						

	and culture and QBC						
IM4.13	Perform and interpret a sputum gram stain						
IM4.14	Perform and interpret a sputum AFB						
IM4.15	Perform and interpret a malarial smear						
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment						
IM4.19	Assist in the collection of blood and wound cultures						
IM4.20	Interpret a PPD (Mantoux)						
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs						
IM4.24	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						
IM4.25	Communicate to the patient and family the diagnosis and treatment						
IM4.26	Counsel the patient on malarial prevention						
Liver diseases							
IM5.9	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and						

	includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history						
IM5.10	Perform a systematic examination that establishes the diagnosis and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of portosystemic hypertension and hepatic encephalopathy						
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology						
IM5.17	Enumerate the indications, precautions and counsel patients on vaccination for hepatitis						
HIV							
IM6.7	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status						
IM6.8	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom						
IM6.14	Perform and interpret AFB sputum						

IM6.15	Demonstrate in a model the correct technique to perform a lumbar puncture						
IM6.19	Counsel patients on prevention of HIV transmission						
IM6.20	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM6.21	Communicate with patients on the importance of medication adherence						
IM6.22	Demonstrate understanding of ethical and legal issues regarding patient confidentiality and disclosure in patients with HIV						
IM6.23	Demonstrate a non-judgemental attitude to patients with HIV and to their lifestyles						
Rheumatologic problems							
IM7.11	Elicit document and present a medical history that will differentiate the aetiologies of disease						
IM7.12	Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease						
IM7.15	Enumerate the indications for and interpret the results of : CBC, anti- CCP, RA, ANA, DNA and other tests of autoimmunity						
IM7.17	Enumerate the indications and interpret plain radiographs of joints						

IM7.18	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM7.20	Select, prescribe and communicate appropriate medications for relief of joint pain						
IM7.21	Select, prescribe and communicate preventive therapy for crystalline arthropathies						
IM7.22	Select, prescribe and communicate treatment option for systemic rheumatologic conditions						
IM7.24	Communicate and incorporate patient preferences in the choice of therapy						
IM7.25	Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions						
IM7.26	Demonstrate an understanding of the impact of rheumatologic conditions on quality of life, well being, work and family						
Hypertension							
IM8.9	Elicit document and present a medical history that includes: duration and levels, symptoms, comorbidities, lifestyle, risk factors, family history, psychosocial and environmental factors, dietary assessment, previous and concomitant therapy						

IM8.10	Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart						
IM8.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM8.15	Recognise, prioritise and manage hypertensive emergencies						
IM8.16	Develop and communicate to the patient lifestyle modification including weight reduction, moderation of alcohol intake, physical activity and sodium intake						
IM8.17	Perform and interpret a 12 lead ECG						
IM8.18	Incorporate patient preferences in the management of HTN						
IM8.19	Demonstrate understanding of the impact of Hypertension on quality of life, well being, work and family						
Anemia							
IM9.3	Elicit document and present a medical history that includes symptoms, risk factors including GI bleeding, prior history, medications, menstrual history, and family history						

IM9.4	Perform a systematic examination that includes : general examination for pallor, oral examination, DOAP session of hyper dynamic circulation, lymph node and splenic examination						
IM9.5	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM9.6	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM9.9	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate						
IM9.10	Describe, perform and interpret a peripheral smear and stool occult blood						
IM9.13	Prescribe replacement therapy with iron, B12, folate						
IM9.15	Communicate the diagnosis and the treatment appropriately to patients						
IM9.16	Incorporate patient preferences in the management of anemia						
IM9.19	Assist in a blood transfusion						
IM9.20	Communicate and counsel patients with methods to prevent nutritional anemia						
Acute kidney injury and chronic renal failure							

IM10.12	Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes						
IM10.13	Perform a systematic examination that establishes the diagnosis and severity including determination of volume status, presence of edema and heart failure, features of uraemia and associated systemic disease						
IM10.15	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM10.17	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)						
IM10.18	Identify the ECG findings in hyperkalemia						
IM10.20	Describe and discuss the indications to perform arterial blood gas analysis: interpret the data						
IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter						
IM10.22	Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter						

IM10.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
IM10.24	Counsel patients on a renal diet						
Diabetes Mellitus							
IM11.7	Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease						
IM11.8	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)						
IM11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile						
IM11.12	Perform and interpret a capillary blood glucose test						
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick						

IM11.19	Demonstrate and counsel patients on the correct technique to administer insulin						
IM11.20	Demonstrate to and counsel patients on the correct technique of self monitoring of blood glucoses						
Thyroid Dysfunction							
IM12.5	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity						
IM12.6	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings						
IM12.7	Demonstrate the correct technique to palpate the thyroid						
IM12.9	Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan						
IM12.10	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG						
IM12.11	Interpret thyroid function tests in hypo and hyperthyroidism						

IM12.14	Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status						
Common malignancies							
IM13.8	Perform and demonstrate a physical examination that includes an appropriate general and local examination that excludes the diagnosis, extent spread and complications of cancer						
Obesity							
IM14.6	Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history, clues for secondary causes and motivation to lose weight						
IM14.7	Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities						
IM14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM14.9	Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.						

IM14.11	Communicate and counsel patient on behavioural, dietary and lifestyle modifications						
IM14.12	Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgemental way						
GI Bleeding							
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed						
IM15.4	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors						
IM15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination						
IM15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent						
IM15.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely						

	diagnosis						
IM15.9	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test.						
IM15.13	Observe cross matching and blood / blood component transfusion						
IM15.18	Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options						
Diarrheal diseases							
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses						
IM16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination						
IM16.7	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM16.8	Choose and interpret diagnostic tests based on the						

	clinical diagnosis including complete blood count, and stool examination						
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen						
IM16.10	Identify vibrio cholera in a hanging drop specimen						
IM16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis						
Headache							
IM17.2	Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches						
IM17.4	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis						
IM17.5	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						
IM17.6	Choose and interpret diagnostic testing based on the clinical diagnosis including imaging						
IM17.8	Demonstrate in a mannequin or equivalent the correct technique						

	for performing a lumbar puncture						
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis						
IM17.14	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
Cerebrovascular accident							
IM18.3	Elicit and document and present an appropriate history including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident						
IM18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history						
IM18.6	Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion						
IM18.7	Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech						
IM18.10	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)						

IM18.17	Counsel patient and family about the diagnosis and therapy in an empathetic manner						
Movement disorders							
IM19.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the movement disorders						
IM19.4	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales						
IM19.5	Generate document and present a differential diagnosis and prioritise based on the history and physical examination						
IM19.6	Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings						
IM19.7	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders						
Envenomation							
IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient						

	with a snake bite in the field						
IM20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite						
IM20.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination						
IM20.6	Choose and interpret the appropriate diagnostic testing in patients with snake bites						
Poisoning							
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy						
Nutritional and Vitamin deficiencies							
IM23.5	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet						
Geriatrics							
IM24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components						
Miscellaneous infections							
IM25.4	Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the						

	evolution and pattern of symptoms, risk factors, exposure through occupation and travel						
IM25.5	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin, mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)						
IM25.6	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
IM25.7	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC						
IM25.9	Assist in the collection of blood and other specimen cultures						
IM25.11	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						

IM25.12	Communicate to the patient and family the diagnosis and treatment of identified infection						
IM25.13	Counsel the patient and family on prevention of various infections due to environmental issues						
The role of physician in the community							
IM26.19	Demonstrate ability to work in a team of peers and superiors						
IM26.20	Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgemental and empathetic manner						
IM26.21	Demonstrate respect to patient privacy						
IM26.22	Demonstrate ability to maintain confidentiality in patient care						
IM26.23	Demonstrate a commitment to continued learning						
IM26.24	Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers						
IM26.25	Demonstrate responsibility and work ethics while working in the health care team						
IM26.26	Demonstrate ability to maintain required documentation in health care (including correct use of medical records)						
IM26.27	Demonstrate personal grooming that is adequate and appropriate for health care						

	responsibilities						
IM26.28	Demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning						
IM26.29	Communicate diagnostic and therapeutic opitons to patient and family in a simulated environment						
IM26.30	Communicate care opitons to patient and family with a terminal illness in a simulated environment						
IM26.31	Demonstrate awareness of limitations and seeks help and consultations appropriately						
IM26.32	Demonstrate appropriate respect to colleagues in the profession						
IM26.33	Demonstrate an understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors						
IM26.34	Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts						
IM26.35	Demonstrate empathy in patient encounters						
IM26.36	Demonstrate ability to balance personal and professional priorities						

IM26.37	Demonstrate ability to manage time appropriately						
IM26.38	Demonstrate ability to form and function in appropriate professional networks						
IM26.39	Demonstrate ability to pursue and seek career advancement						
IM26.40	Demonstrate ability to follow risk management and medical error reduction practices where appropriate						
IM26.41	Demonstrate ability to work in a mentoring relationship with junior colleagues						
IM26.42	Demonstrate commitment to learning and scholarship						
IM26.48	Demonstrate altruism						
IM26.49	Administer informed consent and approriately adress patient queries to a patient being enrolled in a research protocol in a simulated environment						
Integration Anatomy							
AN20.8 Vertical integration	Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment						
AN20.9 Vertical integration	Identify & demonstrate Palpation of vessels (femoral, popliteal,dorsalis pedis,post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal						

	nerve, great and small saphenous veins						
AN24.2 Vertical integration	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate						
AN25.7 Vertical integration	Identify structures seen on a plain x-ray chest (PA view)						
AN25.8 Vertical integration	Identify and describe in brief a barium swallow						
AN25.9 Vertical integration	Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart						
AN56.1 Vertical integration	Describe & identify various layers of meninges with its extent & modifications						
AN62.2 Vertical integration	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere						
AN62.6 Vertic	Describe & identify formation, branches &						

al integr ation	major areas of distribution of circle of Willis						
PY4.9 Vertical integrati on	Discuss the physiology aspects of: peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease						
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment						
PY5.16	Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment						
PY11.1 4 Vertical integrati on	Demonstrate Basic Life Support in a simulated environment						
PY6.8 Vertical Integrati on	Demonstrate the correct techinque to perform & interpret Spirometry						
BI11.4 Vertical integrati on	Perform urine analysis to estimate and determine normal and abnormal constituents						
BI1.26 Vertical integrati on	Calculate albumin: globulin (AG) ratio and creatinine clearance						
BI1.27 Vertical integrati on	Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet						
PA13.5	Perform, Identify and describe the peripheral						

	blood picture in anemia						
PA14.3 Vertical integration	Identify and describe the peripheral smear in microcytic anemia						
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features						
PA24.3	Describe and identify the microscopic features of peptic ulcer						
PA25.6	Interpret a liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver function tests						
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes						
PA35.3 Vertical integration	Identify the etiology of meningitis based on given CSF parameters						
MI2.3	Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis						
MI2.6	Identify the causative agent of malaria and filariasis						
MI3.2	Identify the common etiologic agents of diarrhea and dysentery						
MI5.3	Identify the microbial agents causing meningitis						

MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)						
MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain).						
PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction						
PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations						
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient						
PH3.3	Perform a critical evaluation of the drug promotional literature						
PH3.5	To prepare and explain a list of P-drugs for a given case/condition						
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use						
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance						
CM5.2	Describe and demonstrate the correct method of performing a nutritional assessment of						

	individuals, families and the community by using the appropriate method						
CM5.4	Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment						
CM6.2	Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data						
CM6.3	Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs						
CM6.4	Enumerate, discuss and demonstrate common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion						
CM7.4	Define, calculate and interpret morbidity and mortality indicators based on given set of data						
CM7.6	Enumerate and evaluate the need of screening tests						
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures.						

FM14.2	Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment						
FM14.3	Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination .						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted diseases						
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)						
DR11.2	Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions						
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions						
DR16.1	Identify and distinguish skin lesions of SLE						

DR16.2	Identify and distinguish Raynaud's phenomenon						
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1 Vertical integration	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment advanced life support in adults and children						
AS3.2 Horizontal integration	Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation						
AS3.3 Horizontal integration	Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery						
AS3.4 Horizontal integration	Choose and interpret appropriate testing for patients undergoing Surgery						
AS3.5 Horizontal integration	Determine the readiness for General Surgery in a patient based on the preoperative evaluation						
PS4.2 Horizontal integration	Elicit, describe and document clinical features of alcohol and substance use disorders						

PS4.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders						
PS10.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS12.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS16.4 Horizontal integration	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PE32.3 Horizontal integration	Interpret normal Karyotype and recognize Trisomy 21						
PE28.20	Counsel the child with asthma on the correct use of inhalers in a simulated environment						
PE34.5	Able to elicit, document and present history of contact with tuberculosis in every patient						

	encounter						
PE34.6	Identify a BCG scar						
PE34.7	Interpret a Mantoux test						
PE34.8	Interpret a Chest Radiograph						
PE34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis						
PE34.11	Perform AFB staining						
PE28.19	Describe the etio-pathogenesis, clinical features, diagnosis, management and prevention of asthma in children						
PM4.5 Horizontal integration	Demonstrate correct assessment of muscle strength and range of movements						
PM6.1 Horizontal integration	Perform and demonstrate a clinical examination of sensory and motor deficits of peripheral nerve						
CT1.5	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations						
CT1.6	Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes a a) general examination, b) examination of						

	the chest and lung including loss of volume, mediastinal shift, percussion and auscultation (including DOAP session of lung sounds and added sounds) c) examination of the lymphatic system and d) relevant CNS examination						
CT1.7	Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test						
CT1.10	Perform and interpret an AFB stain						
CT1.11	Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration						
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and co- morbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)						
CT1.17	Define criteria for the cure of Tuberculosis; describe and recognise the features of drug resistant tuberculosis, prevention and therapeutic regimens						
CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program						
CT1.19	Communicate with patients and family in an empathetic manner about the diagnosis, therapy						

CT2.8	Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants						
CT2.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.11	Describe, discuss and interpret pulmonary function tests						
CT2.12	Perform and interpret peak expiratory flow rate						
CT2.13	Describe the appropriate diagnostic work up based on the presumed aetiology						
CT2.14	Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph						
CT2.15	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.18	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids						
CT2.19	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy						
CT2.21	Describe discuss and counsel patients appropriately on smoking cessation						
CT2.22	Demonstrate and counsel patient on the correct use of inhalers						

CT2.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
CT2.9	Perform a systematic examination that establishes the diagnosis and severity that includes measurement of respiratory rate, level of respiratory distress, effort tolerance, breath sounds, added sounds, identification of signs of consolidation pleural effusion and pneumothorax						
DR5.2	Identify and differentiate scabies from other lesions						
DR6.2	Identify and differentiate pediculosis from other skin lesions						
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate						

	investigations in a patient with mental retardation						
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment						
PM3.4	Demonstrate spasticity, rigidity and dystonia in children with cerebral palsy						
PS1.1	Establish rapport and empathy with patients						
PS1.3	Demonstrate breaking of bad news in a simulated environment						
PS1.4	Describe and demonstrate the importance of confidentiality in patient encounters						
PS3.3	Elicit, present and document a history in patients presenting with a mental disorder						
PS3.4	Describe the importance of establishing rapport with patients						
PS3.5	Perform, demonstrate and document a minimental examination						
PS3.9	Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders						
PS4.2	Elicit, describe and document clinical features of alcohol and substance use disorders						
PS4.3	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse						

	disorders						
PS4.5	Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment						
PS5.2	Enumerate, elicit, describe and document clinical features, positive s						
PS5.4	Demonstrate family education in a patient with schizophrenia in a simulated environment						
PS6.2	Enumerate, elicit, describe and document clinical features in patients with depression						
PS6.3	Enumerate and describe the indications and interpret laboratory and other tests used in depression						
PS6.5	Demonstrate family education in a patient with depression in a simulated environment						
PS7.2	Enumerate, elicit, describe and document clinical features in patients with bipolar disorders						
PS7.3	Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders						
PS7.5	Demonstrate family education in a patient with bipolar disorders in a simulated environment						

PS8.2	Enumerate, elicit, describe and document clinical features in patients with anxiety disorders						
PS8.3	Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders						
PS8.5	Demonstrate family education in a patient with anxiety disorders in a simulated environment						
PS9.2	Enumerate, elicit, describe and document clinical features in patients with stress related disorders						
PS9.3	Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders						
PS9.5	Demonstrate family education in a patient with stress related disorders in a simulated environment						
PS10.2	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS10.5	Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a						

	simulated environment						
PS11.2	Enumerate, elicit, describe and document clinical features in patients with personality disorders						
PS11.3	Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders						
PS11.5	Demonstrate family education in a patient with personality disorders in a simulated environment						
PS12.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS12.5	Demonstrate family education in a patient with psychosomatic disorders in a simulated environment						
PS13.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders						
PS13.3	Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual and gender identity disorders						

PS13.5	Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate investigations in a patient with mental retardation						
PS16.4	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs.						
IM17.14	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
IM24.2	Perform multidimensional geriatric assessment that includes medical,						

	psycho-social and functional components						
DR1.2	Identify and grade the various common types of acne						
DR3.1	Identify and distinguish psoriatic lesions from other causes						
DR3.2	Demonstrate the grattage test						
DR4.1	Identify and distinguish lichen planus lesions from other causes						
DR5.2	Identify and differentiate scabies from other lesions in adults and children						
DR6.2	Identify and differentiate pediculosis from other skin lesions in adults and children						
DR7.2	Identify Candida species in fungal scrapings and KOH mount						
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions						
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions						
DR8.4	Identify and distinguish viral warts from other skin lesions						
DR8.5	Identify and distinguish molluscum contagiosum from other skin lesions						
DR8.6	Enumerate the indications, describe the procedure and perform a Tzanck smear						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an						

	appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.2	Identify spirochete in a dark ground microscopy						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease						

General Medicine

Subject: General Medicine **Third Year MBBS**

Sub Item: Theory lectures/ Clinical postings/Tutorials/seminars/self directed learning/ Electives

Final Summary

Sr. No	Description	Dates		Attendance percentage	Status	Signature of Teacher
		From	To		Complete/ Incomplete	
1	Theory lectures					
2	**Clinical postings**					
3	AETCOM Module					
4.	Electives					
5	Vertical Integraon					

6	Extracurricular activities					
7	Sports /Physical Education					

Maharashtra University of Health Sciences

PHASE II to Phase IV MBBS

COMPETENCY BASED CURRICULUM-2019 batch

GENERAL MEDICINE LOG BOOK

NAME OF COLLEGE-

NAME OF STUDENT-

ROLL NUMBER- **BATCH – A/B/C/D/E/F**

CONTENTS

PERSONAL DETAILS

Name of student-

Mobile Number-

Residential Address-

Photo stick here

Father/Guardians contact no.

Email-

Email of Father/Guardian-

Date of admission to MBBS course-

Date of beginning of current phase-

LOGBOOK CERTIFICATE (General Medicine)

This is to certify that the candidate Mr/ Ms ……, Reg No....., admitted in the year 2019-20 in the ---------- Medical College,---------- has satisfactorily completed / has not completed all assignments /requirements mentioned in this logbook for Second to fourth year MBBS course in the subject(s) of General Medicine Foundation Course/ AETCOM during the period from …… to…… . She / He is / Eligible/ not eligible to appear for the summative (University) assessment as on the date given below.

Signature of all Unit In charges-

Signature of Head of the Department

Principal/Dean of the College

Place:
Date:

GENERAL INSTRUCTIONS

1. The logbook is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her logbook.
2. The log book is a record of the academic / nonacademic activities of the student. Each Medical student is responsible for maintaining their logbook.
3. This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for Phase II to Phase IV Professional MBBS students in the subject of General Medicine.
4. Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly singed by the supervising faculty.
5. Entries in the logbook will be in accordance with activities done in the departments and has to be scrutinized by the Head of all the concerned departments.
6. The logbook shall be kept as record work of the candidate for that department / specialty & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A clear record of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least 5 years after completion of the examination. Institutions may be asked to provide these details by the University as and when required.

2. The contents in the log book are suggested guidelines. The institutions can make necessary changes as per the needs.

3. The student is responsible for getting the entries in the logbook verified by the Faculty in charge regularly.

4. Entries in the logbook will reflect the activities undertaken in the department & have to be scrutinized by the Head of the concerned department.

5. The logbook is a record of various activities by the student like:- Overall participation & performance, Attendance, Participation in sessions, Record of completion of pre-determined activities., Acquisition of selected competencies.

Record of Attendance for Theory and clinical postings

	Duration	Practical		Theory		Signature of Unit in charge/ HOD
		No of days	Days attended	No of days	Days attended	
Phase II						
First clinical posting	4 weeks					
Second clinical posting	4 weeks					
Phase III Part I	8 weeks					
Phase III Part I	4 weeks					

Dates of completion of clinical postings

Phase	From	To	Absent days	Journal completed	Signature of unit in charges with name and dates
II					
III Part I					
III Part II					

SCHEME OF EXAMINATION - Internal Assessment

Sr. No.	Internal assessment	Date/Month /Year	Marks obtained		Out of 4.5	Signature of student
			Theory out of	Practical out of		
1	First	September				
2	Second	September				
3	Third Part I	October				
4	Third Part II	January				
	Total					
	Round up-					

Duration and details of course

Sr. No.	Phases		Semester	No of Months
1	I	First professional Preclinical phase	Semester 1 & Semester 2	1 + 12 months
2	II	Second professional Paraclinical Phase	Semester 3 & Semester 4	11 Months
3	III Part I	Third professional Clinical Phase	Semester 5 & Semester 6	13 Months
4	Electives, skills and assessment			2 Months
5	III Part II	Third professional Clinical Phase	Semester 7, Semester 8 Semester 9	13 Months

Phase	Hours	Total hrs
First I		
Early clinical exposure	90	
Second II		
Lectures	75	615 hrs
Tutorial/Seminars/Integrated learning	--	-
Self directed learning	--	--
Third Part I		
Lectures	25	65 hrs
Tutorial/Seminars/Integrated learning	35	
Self directed learning	5	
Third Part II		
Lectures	70	210 hrs
Tutorial/Seminars/Integrated learning	125	
Self directed learning	15	

Theory teaching

Learner – Doctor Programme (Clinical clerkship) (Reference- The Gazette of India: Part III-sec.4 pg 74-74)

The learner will function as a part of the health care team with the following responsibilities:

(i) Be part of the unit's outpatient services on admission days,
(ii) Remain with the admission unit until 6 PM except during designated class hours,
(iii) Be assigned patients admitted during each admission day for whom he/she will undertake responsibility, under the supervision of a senior resident or faculty member,
(iv) Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
(v) Follow the patient's progress throughout the hospital stay until discharge,
(vi) Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients (according to responsibilities outlined in table 9),
(vii) Participate in unit rounds on at least one other day of the week excluding the admission day,
(viii) Discuss ethical and other humanitarian issues during unit rounds,
(ix) Attend all scheduled classes and educational activities,
(x) Document his/her observations in a prescribed log book / case record.
(xi) No learner will be given independent charge of the patient.

Year of curriculum	Focus of Learner- Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness

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

Assessment of Skill competencies

Assessment of DOAP Sessions

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.12	Pulse examination with demonstration				
	1.13	Measure BP accurately				
	1.14	JVP				
	4.10	Examination of skin, lymph node, chest and abdominal examination				
	2.7	CVS Examination with demonstration				
	3.4 & 3.5	Orientation to history taking, general examination & systemic examination of Respiratory system				
Phase III part II (fourth year)	IM 3.9/ IM 5.15	Demonstrate in a mannequin and interpret results of a pleural fluid Aspiration				
	IM5.15	Assist in the performance and interpret the findings of an ascitic fluid analysis	Mannequins/bedside clinic/Real patient			
	M6.15/ M 17.8 17.9	Demonstrate in a model the correct technique to perform a lumbar Puncture	Mannequins/bedside clinic/ Real patient			
Feedback by Faculty-						
Phase II						
Phase III Part I						
Phase III Part II						

Assessments of Skill acquisition Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	1.30	Intramuscular injection	Simulator / Mannequin/Small group discussion			
		Ward round • Communication with patient • Patient Education				
Phase III **Part I**	IM4.15	Peripheral blood smear interpretation&Perform and interpret a malarial smear	Small group discussion			
		Ryles tube insertion	Simulation/ Real patient			
	IM4.20	Interpret a PPD (Mantoux)	Small group discussion			
	IM11.19	Demonstrate(and counsel) patients on the correct technique to administer insulin	Real patient			
	IM3.17	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and	Small group discussion			

		indications for ventilation (K)				
	IM11.13	Bedside urine analysisv&vPerform and interpret aurinary ketone estimation with a dipstick	Real patient			
	IM15.2 M15.11	Setting up IV infusion and calculating drip rate	Seminar/ Small group discussion /Casualty real patient			
Phase III part II (fourth year)	IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture	Simulators/manneq uin			
	IM4.19	Assist in the collection of blood	Bed side clinics			
	IM11.12	Perform and interpret a capillary blood glucose test	Real patient			
	IM25.9	Assist in the collection of blood and other specimen cultures	Bed side clinic/real patients			
	IM9.19	Assist in a blood transfusion	Bed side clinic/real patients			
	IM15.13	Observe cross matching and blood / blood component transfusion	Bed side clinic/real patients			
	IM2.22	Perform and demonstrate in a mannequin BLS	DOAP			
	IM2.21	Observe and participate in a controlled environment an ACLS Program	Session in skills lab			
Feedback by Faculty						
Phase III Part I						

Phase III Part II	

Assessments of case presentation Sessions

Phase	Competency Nos.	Topics & Subtopics	TL Method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	20.4 & 20.5	Medical emergency - snake bite – Elicit, present and document an detail history, Perform a systematic examination, document and present a local, appropriate cardiac and neurologic examination	Seminar/ Small Group discussion			
	CT2.20	Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Lecture/ seminar/small group discussion /bedside clinic			
	CT2.22	Demonstrate and counsel patient on the correct use of inhaler	Small group discussion			
Phase III part II (fourth year)	IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter	Seminar / lecture			
	IM11.20	Demonstrate to and counsel patients correct technique on the of self-monitoring of blood glucoses	Seminar/lecture			
	IM15.2	Enumerate, describe and discuss the evaluation and steps involved in	Seminar/lecture/smal			

		stabilizing a patient who presents with acute volume loss and GI Bleed	l 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	Seminar/lecture/small group discussion			
	AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates	Seminar/lecture/small group discussion			
	IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	Seminar/lecture/small group discussion			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of OSCE

Phase	Competency Nos.	Topics & Subtopics	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase II	IM4.15 IM9.10	Perform and interpret a malarial smear Describe, perform and interpret a peripheral smear			
	IM11.13 BI11.4	Perform and interpret a urinary ketone estimation with a dipstick Perform urine analysis to estimate and determine			

		normal and abnormal constituents			
		Interprete Chest X Ray			
		Interprete blood culture			
		Interprete Hemogram- CBC etc			
		Interprete Liver function tests			
		Interprete CSF analysis			
		Interprete ascitic, pleural fluid			
		Interprete ABG			
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Skill acquisition Vertical integration

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
Phase III	OG35.17	OBGY Demonstrate the correct technique of urinary catheterization in a simulated/ supervised environment	Small group discussion / real patient/ simulation			
	CT2.20	Chest Medicine – Describe and discuss the principles and use of oxygen therapy in the hospital and at home	Seminar/ Group discussion			
	CT2.22	Chest Medicine- Demonstrate and counsel patient on the correct use of inhalers	Small group discussion / Role play/ Real patient			
	AS2.1	Enumerate the indications,	DOAP			

		describe the steps and demonstrate in a simulated environment **basic life support in adults children and neonates**	Session in skills lab			
	AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment **advanced life support in adults and children**	DOAP Session in skills lab			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Integrated teachings-

Phase	Subject	Hours	Competency Nos. Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
III Part I		**Total 9 hours (3 hours each for clinical Pharmacology, clinical Pathology and Clinical microbiology)**					
	Clinical Pharmacology	3hours	Clinical pharmacokinetics-1 hr Adverse drug reaction-1 hr Drug-Drug interaction-1 hr				
	Clinical Pathology	3hours	Anaemia and haemoglobinopathies-1 hr Hematological malignancies-1 hr Platelet disorder-1 hr				
	Clinical Microbiology	3hours	Pyrexia of unknown origin -1 hr Antimicrobial resistance -1 hr Viral haemorrhagic fever -1 hr				
III Part II		**Integrated teachings- Total 19 hours**					
	Care of patients during Pandemics	6 hours	Interactive Discussion- 2 hours Triage practices to be followed Primary care to be given to a patient on reaching hospital				

			Steps t be taken to reduce transmission of infections in emergency area Role Play- 1 hour Visit to hospital with discussion with staff- 2 hour Debriefing and feedback- 1 hour				
	Emergency Procedures during Pandemics	8 hours	Interactive Discussion – 2 hours 1. Indications for invasive procedures in Pandemics 2. Points to be verified before emergency procedures 3. Steps to be taken to reduce transmission of infections 4. Attitude and Communication Issues related to complicated procedures II. Skill development program – with mannequins e.g. intubation, CPR, ALS, PALS etc - 4 hours (This may be linked with the routine Skill training component as well) III. Role Plays for communication skills and documentation - 1 hour IV. Debriefing and Feedback - 1hour				
	Managing Death during Pandemics	2 hours	Interactive discussion – 1 hour a. Confirmation and documentation of death b. Steps to be taken to reduce transmission of infections c. Attitude and Communication Issues related to handling of dead bodies d. Responding to media ii. Role Play for communication skills and documentation with debriefing and feedback - 1 hour				
	Geraiatrics	3 hours	Polypharmacy Falls Incontinence				
Feedback by Faculty							
Phase III Part I							
Phase III Part II							

AETCOM

75% Attendance is required for eligibility to appear for final examination in each professional year.

Maharashtra University of Health Sciences General Medicine Task Force for CBME Implementation			
Summary of AETCOM modules for Third and Fourth professional years			
	Third professional Year	**Fourth Professional Year**	Total
Number of Modules	5	9	14
Number of Hours for training	19	28	47
Number of Hours for SDL	06	16	22
Number of hours to be shown in time table of respective departments for AETCOM			
Hours of training by Medicine	10	15	25
Hours of training by Surgery	10	15	25
Hours of training by OBGY	05	09	14
Hours of training by Pediatrics	00	05	05

Assessment of AETCOM -

Phase	Competency Nos.	Topics & Subtopics	Teaching & Learning method	Attempt at activity First (F) Repeat (R) Remedial (Re)	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty and date
II	26.20	Demonstrate ability to communicate to patients in a respectful, non threatening, non judgemental and empathetic manner	**Small group discussion/Role play**			
	26.21 & 26.22	- Demonstrate respect to patient privacy - Demonstrate ability to maintain confidentiality in patient care	**Lecture/ Small group discussion**			
	26.19 , 26.24 & 26.25	- Demonstrate ability to work in a team of peers and superiors - Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers- Demonstrate responsibility and work ethics while working in the health care team	**Lecture/ self directed learning/Small group discussion**			
	26.35	Demonstrate empathy in patient encounters	**Role play/ Case presentation**			
III Part I	26.29 - 26.31	Role of Physician in Community- Communicate diagnostic and therapeutic options to patient and family in a simulated environment Communicate care options to patient and family with a terminal illness in a simulated environment Demonstrate awareness of limitations and seeks	Lecture/ Small group discussion/Role play			

		help and consultations appropriately				
Module 3.3		Administer informed consent and appropriately address patient queries to a patient undergoing a Surgical/ therapeutic procedure in a simulated environment	Small group discussion/ Real patient/ Role play			
Module 4.4		Communication, Attitude and Ethics **Empathy, Doctor Patient Relationship , Effective Communication in terminally ill**	CBL /video with interactive lecture, role play / small group session with standardized patient in soft skills lab.			
Module 4.5		Ethics and attitude **Doctor Industry relationship- Conflicts of interests in patients care and professional**	Role play/ CBL with interactive lecture			
Module 4.8		Communication, Attitude and Ethics **Empathy, Death declaration, Handling emotions during death, Euthanasia , Breaking Bad News effectively**	CBL /video with interactive lecture, role play / small group session with standardized patient as relative in soft skills lab.			
Phase III Part II						
Module 4.1		**Foundation of Communication 5 Effectively communicating Diagnosis, Prognosis and therapy (Counseling skills)**	**Small group teaching with soft skills lab session related to Counseling skills**			
Module 4.2		Ethics Abortion, MTP, Reproductive rights and ethical conflicts	CBL with interactive lecture (Can be a large class teaching)			

Module 4.9		Ethics Legal aspects of Care, Medical negligence and malpractices	CBL with interactive lecture/ small group discussions			
Feedback by Faculty						
Phase III Part I						
Phase III Part II						

Assessment of Tutorials

Phase	Topic	Hours	**Attempt at activity First (F) Repeat (R) Remedial (Re)**	**Decision of faculty Completed (C) Repeat (R) Remedial (Re)**	**Initial of faculty and date**
III Part I	Medical emergencies	1 hr			
	Valvular heart disease in adults	1 hr			
	Acynotic congenital heart disease in adults (ASD,VSD,PDA)	1 hr			
	Cynotic congenital heart disease in adults (TOF)	1 hr			
	Instruments- Video of procedures/Real/casewise	1 hr			
	Instruments	1 hr			
	X rays	1 hr			
	X rays	1 hr			
	ECG- Approach to basics of ECG	1 hr			
	ECG- How to read ECG?	1 hr			
III Part II	**ECG-**	10 Hours			
	How to interprete ECG?	1 hr			
	ECG-Diagnosing Myocardial infarctions	1 hr			
	ECG: Chamber enlargement	1 hr			
	ECG-Bundle branch blocks	1 hr			
	Electrolyte abnormalities on ECG	1 hr			
	Narrow Complex tacchyarrythmias	1 hr			

	Bradyarrthmias	1 hr			
	Valvular Heart diseases	1 hr			
	ECG Quiz	1 hr			
	Misceleneous	1 hr			
	Radiology-	**11 Hours**			
	Basics of Chest X Ray	1 hr			
	Reading Normal X Ray Chest	1 hr			
	Abnormalities on Chest X Ray – Cardiovascular system	1 hr			
	Pulmonary venous hypertension vs pulmonary arterial hypertension	1 hr			
	Chest X ray – Respiratory system	1 hr			
	Abdominal system(Chest & Abdomen X Ray)	1 hr			
	Miscelleneous X ray	1 hr			
	Basics of CT Scan	1 hr			
	Basics of MRI	2 hr			
	Basics of PET scan	1 hr			
	Drugs- Case based approach	**13 Hours**			
	Anti epileptics	1 hr			
	Cardiovascular Drugs	1 hr			
	Anti Tubercular Therapy	1 hr			
	Anti Retroviral Therapy	1 hr			
	Emergency Drugs	1 hr			
	Antiviral Drugs	1 hr			
	Drugs in respiratory system	1 hr			
	Glucocorticoids	1 hr			
	Drugs in Rheumatology	1 hr			
	Anticoagulants	1 hr			
	Inotropes and inodilators	1 hr			
	Anti hypertensives	1 hr			
	Antidiabetic drugs	1 hr			
	Interpretation of Lab Charts	**12 Hours**			
	Interpretation of Ascitic fluid analysis				
	Interpretation of Pleural fluid analysis				
	Interpretation of Cerebrospinal fluid analysis				

	Interpretation of Abnormal LFT				
	Interpretation of Anemia				
	Interpretation of thyroid function test				
	Interpretation of Peripheral blood smear				
	Interpretation of urine analysis				
	Interpretation of Fundus examination				
	Interpretation of renal function tests				
	Interpretation of Bone marrow studies				
	Interpretation of ABG				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Seminars

Phase	Topic	Hours	**Attempt at activity First (F) Repeat (R) Remedial (Re)**	**Decision of faculty Completed (C) Repeat (R) Remedial (Re)**	**Initial of faculty and date**
III Part I	**Seminars**	**16 Hours**			
	Clinical approach to Ascites				
	Clinical approach to Anaemia				
	Clinical approach to lymphadenopathy				
	Clinical approach to Jaundice				
	Clinical approach to chest pain				
	Clinical approach to headache				
	Clinical approach to bleeding diathesis				
	Clinical approach to Comatose patient				
	Portal hypertension and its complications				
	Pulmonary arterial hypertension				
	Pulmonary function tests				
	Thyroid function tests				
	Grave's disease				
	Micro-vascular complications of DM				
	Macro-vascular complications of DM				

	Insulin and analogues				
III Part II	Seminars	**45 hours**			
	Clinical approach to Hypertensive emergencies				
	Clinical approach to Acute myocardial infarction				
	Clinical approach to solitary Seizure				
	Clinical approach to ischemic stroke				
	Clinical approach to intracranial bleed				
	Clinical approach to Heart Failure				
	Clinical approach to Acute renal failure				
	Clinical approach to Chronic kidney disease				
	Clinical approach to hyponatremia				
	Clinical approach to potassium imbalance disorders				
	Clinical approach to disorders of calcium metabolism				
	Interpretation of ABG				
	Mixed Acid Base disorders				
	Emerging Viral Infections				
	Clinical approach to Geriatric Syndromes				
	Clinical approach to a case of Pulmonary Tuberculosis				
	Clinical approach to a case of Extra Pulmonary Tuberculosis				
	Clinical Approach to a case of PLHIV				
	Clinical approach to opportunistic infections in a case of PLHIV				
	Clinical approach to prescription of ART				
	Clinical approach to a case of Dengue				
	Clinical approach to a case of Complicated malaria				
	Recent advances in the diagnosis of tuberculosis				
	Vaccines for tuberculosis				
	Recent advances in anti retroviral drugs				
	Clinical approach to a case of Interstitial lung disease				
	Clinical approach to a case of snake bite				

	Clinical approach to a case of electric injury				
	Clinical approach to a case of acute meningitis				
	Clinical approach to a case of Chronic meningitis				
	Ageing				
	Human Microbiome				
	Clinical approach to oncological emergencies				
	Clinical approach to a case of Acute Leukemia				
	Clinical approach to a case of Chronic leukemia				
	Medicolegal, socioeconomic and ethical issues as it pertains to organ donation				
	Role of physician in community				
	Medicolegal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care				
	Medicolegal, socio-cultural and ethical issues as it pertains to confidentiality in patient care				
	Medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects				
	Medicolegal, socio-cultural, professional and ethical issues as it pertains to the physician patient relationship (including fiduciary duty)				
	Documentation in health care (including correct use of medical records)				
	Use of information technology that permits appropriate patient care and continued learning				
	Understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors				
	Conflicts of interest in patient care and professional				

	relationships and describe the correct response to these				
	Clinical approach to a case of				
	Clinical approach to a case of arthritis				
	Clinical approach to a case of multisystem				
	Clinical approach to a case of peripheral neuropathy				
	Clinical approach to a case of flaccid quadriparesis				
Feedback by Faculty					
Phase III Part I					
Phase III Part II					

Assessment of Theory Competencies

1	2	3	4	5	6	7	8
Competency # addressed	**Name of Activity**	**Date completed: dd-mm-yyyy**	**Attempt at activity** First or Only (F) Repeat (R) Remedial (Re)	**Rating** Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	**Decision of faculty** Complete d (C) Repeat (R) Remedial Re)	**Initial of faculty and date**	**Feedback Received** Initial of learner
Heart Failure							
IM1.10	Elicit, document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including presenting complaints, precipitating and exacerbating factors, risk factors						
IM1.11	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation						
IM1.12	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure						
IM1.13	Measure the blood pressure accurately, recognise and discuss alterations in blood						

	pressure in valvular heart disease and other causes of heart failure and cardiac tamponade						
IM1.14	Demonstrate and measure jugular venous distension						
IM1.15	Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations						
IM1.16	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis						
IM1.17	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures						
IM1.18	Perform and interpret a 12 lead ECG						
IM1.20	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						
IM1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy						
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture						

IM1.23	Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations						
IM1.26	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology						
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient						
Acute Myocardial Infarction/ IHD							
IM2.6	Elicit document and present an appropriate history that includes onset evolution, presentation risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes						
IM2.7	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation						
IM2.8	Generate document and present a differential diagnosis based on the clinical presentation and prioritise based on “cannot miss”, most likely diagnosis and severity						
IM2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the						

	clinical presentation						
IM2.10	Order, perform and interpret an ECG						
IM2.11	Order and interpret a Chest X-ray and markers of acute myocardial infarction						
IM2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context						
IM2.22	Perform and demonstrate in a mannequin BLS						
IM2.24	Counsel and communicate to patients with empathy lifestyle changes in atherosclerosis / post coronary syndromes						
Pneumonia							
IM3.4	Elicit document and present an appropriate history including the evolution, risk factors including immune status and occupational risk						
IM3.5	Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of disease						
IM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						

IM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG						
IM3.8	Demonstrate in a mannequin and interpret results of an arterial blood gas examination						
IM3.9	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration						
IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture						
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing						
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum						
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum.						
IM3.14	Perform and interpret a sputum gram stain and AFB						
IM3.18	Communicate and counsel patient on family on the diagnosis and therapy of						

	pneumonia						
Fever and febrile syndromes							
IM4.9	Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use						
IM4.10	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)						
IM4.11	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine						

	and culture and QBC						
IM4.13	Perform and interpret a sputum gram stain						
IM4.14	Perform and interpret a sputum AFB						
IM4.15	Perform and interpret a malarial smear						
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment						
IM4.19	Assist in the collection of blood and wound cultures						
IM4.20	Interpret a PPD (Mantoux)						
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs						
IM4.24	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						
IM4.25	Communicate to the patient and family the diagnosis and treatment						
IM4.26	Counsel the patient on malarial prevention						
Liver diseases							
IM5.9	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and						

	includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history						
IM5.10	Perform a systematic examination that establishes the diagnosis and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of portosystemic hypertension and hepatic encephalopathy						
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology						
IM5.17	Enumerate the indications, precautions and counsel patients on vaccination for hepatitis						
HIV							
IM6.7	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status						
IM6.8	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom						
IM6.14	Perform and interpret AFB sputum						

IM6.15	Demonstrate in a model the correct technique to perform a lumbar puncture						
IM6.19	Counsel patients on prevention of HIV transmission						
IM6.20	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM6.21	Communicate with patients on the importance of medication adherence						
IM6.22	Demonstrate understanding of ethical and legal issues regarding patient confidentiality and disclosure in patients with HIV						
IM6.23	Demonstrate a non-judgemental attitude to patients with HIV and to their lifestyles						
Rheumatologic problems							
IM7.11	Elicit document and present a medical history that will differentiate the aetiologies of disease						
IM7.12	Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease						
IM7.15	Enumerate the indications for and interpret the results of : CBC, anti- CCP, RA, ANA, DNA and other tests of autoimmunity						
IM7.17	Enumerate the indications and interpret plain radiographs of joints						

IM7.18	Communicate diagnosis, treatment plan and subsequent follow up plan to patients						
IM7.20	Select, prescribe and communicate appropriate medications for relief of joint pain						
IM7.21	Select, prescribe and communicate preventive therapy for crystalline arthropathies						
IM7.22	Select, prescribe and communicate treatment option for systemic rheumatologic conditions						
IM7.24	Communicate and incorporate patient preferences in the choice of therapy						
IM7.25	Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions						
IM7.26	Demonstrate an understanding of the impact of rheumatologic conditions on quality of life, well being, work and family						
Hypertension							
IM8.9	Elicit document and present a medical history that includes: duration and levels, symptoms, comorbidities, lifestyle, risk factors, family history, psychosocial and environmental factors, dietary assessment, previous and concomitant therapy						

IM8.10	Perform a systematic examination that includes : an accurate measurement of blood pressure, fundus examination, examination of vasculature and heart						
IM8.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM8.15	Recognise, prioritise and manage hypertensive emergencies						
IM8.16	Develop and communicate to the patient lifestyle modification including weight reduction, moderation of alcohol intake, physical activity and sodium intake						
IM8.17	Perform and interpret a 12 lead ECG						
IM8.18	Incorporate patient preferences in the management of HTN						
IM8.19	Demonstrate understanding of the impact of Hypertension on quality of life, well being, work and family						
Anemia							
IM9.3	Elicit document and present a medical history that includes symptoms, risk factors including GI bleeding, prior history, medications, menstrual history, and family history						

IM9.4	Perform a systematic examination that includes : general examination for pallor, oral examination, DOAP session of hyper dynamic circulation, lymph node and splenic examination						
IM9.5	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
IM9.6	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM9.9	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate						
IM9.10	Describe, perform and interpret a peripheral smear and stool occult blood						
IM9.13	Prescribe replacement therapy with iron, B12, folate						
IM9.15	Communicate the diagnosis and the treatment appropriately to patients						
IM9.16	Incorporate patient preferences in the management of anemia						
IM9.19	Assist in a blood transfusion						
IM9.20	Communicate and counsel patients with methods to prevent nutritional anemia						
Acute kidney injury and chronic renal failure							

IM10.12	Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes						
IM10.13	Perform a systematic examination that establishes the diagnosis and severity including determination of volume status, presence of edema and heart failure, features of uraemia and associated systemic disease						
IM10.15	Describe the appropriate diagnostic work up based on the presumed aetiology						
IM10.17	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)						
IM10.18	Identify the ECG findings in hyperkalemia						
IM10.20	Describe and discuss the indications to perform arterial blood gas analysis: interpret the data						
IM10.21	Describe and discuss the indications for and insert a peripheral intravenous catheter						
IM10.22	Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter						

IM10.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
IM10.24	Counsel patients on a renal diet						
Diabetes Mellitus							
IM11.7	Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease						
IM11.8	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)						
IM11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile						
IM11.12	Perform and interpret a capillary blood glucose test						
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick						

IM11.19	Demonstrate and counsel patients on the correct technique to administer insulin						
IM11.20	Demonstrate to and counsel patients on the correct technique of self monitoring of blood glucoses						
Thyroid Dysfunction							
IM12.5	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity						
IM12.6	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings						
IM12.7	Demonstrate the correct technique to palpate the thyroid						
IM12.9	Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan						
IM12.10	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG						
IM12.11	Interpret thyroid function tests in hypo and hyperthyroidism						

IM12.14	Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status						
Common malignancies							
IM13.8	Perform and demonstrate a physical examination that includes an appropriate general and local examination that excludes the diagnosis, extent spread and complications of cancer						
Obesity							
IM14.6	Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history, clues for secondary causes and motivation to lose weight						
IM14.7	Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities						
IM14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM14.9	Order and interpret diagnostic tests based on the clinical diagnosis including blood glucose, lipids, thyroid function tests etc.						

IM14.11	Communicate and counsel patient on behavioural, dietary and lifestyle modifications						
IM14.12	Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgemental way						
GI Bleeding							
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed						
IM15.4	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors						
IM15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination						
IM15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent						
IM15.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely						

	diagnosis						
IM15.9	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test.						
IM15.13	Observe cross matching and blood / blood component transfusion						
IM15.18	Counsel the family and patient in an empathetic non-judgmental manner on the diagnosis and therapeutic options						
Diarrheal diseases							
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel , sexual history and other concomitant illnesses						
IM16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination						
IM16.7	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis						
IM16.8	Choose and interpret diagnostic tests based on the						

	clinical diagnosis including complete blood count, and stool examination						
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen						
IM16.10	Identify vibrio cholera in a hanging drop specimen						
IM16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis						
Headache							
IM17.2	Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches						
IM17.4	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis						
IM17.5	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation						
IM17.6	Choose and interpret diagnostic testing based on the clinical diagnosis including imaging						
IM17.8	Demonstrate in a mannequin or equivalent the correct technique						

	for performing a lumbar puncture						
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis						
IM17.14	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
Cerebrovascular accident							
IM18.3	Elicit and document and present an appropriate history including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident						
IM18.5	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history						
IM18.6	Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion						
IM18.7	Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech						
IM18.10	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)						

IM18.17	Counsel patient and family about the diagnosis and therapy in an empathetic manner						
Movement disorders							
IM19.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the movement disorders						
IM19.4	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales						
IM19.5	Generate document and present a differential diagnosis and prioritise based on the history and physical examination						
IM19.6	Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings						
IM19.7	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders						
Envenomation							
IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient						

	with a snake bite in the field						
IM20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite						
IM20.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination						
IM20.6	Choose and interpret the appropriate diagnostic testing in patients with snake bites						
Poisoning							
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy						
Nutritional and Vitamin deficiencies							
IM23.5	Counsel and communicate to patients in a simulated environment with illness on an appropriate balanced diet						
Geriatrics							
IM24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components						
Miscellaneous infections							
IM25.4	Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the						

	evolution and pattern of symptoms, risk factors, exposure through occupation and travel						
IM25.5	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin, mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)						
IM25.6	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes						
IM25.7	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC						
IM25.9	Assist in the collection of blood and other specimen cultures						
IM25.11	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis						

IM25.12	Communicate to the patient and family the diagnosis and treatment of identified infection						
IM25.13	Counsel the patient and family on prevention of various infections due to environmental issues						
The role of physician in the community							
IM26.19	Demonstrate ability to work in a team of peers and superiors						
IM26.20	Demonstrate ability to communicate to patients in a patient, respectful, non threatening, non judgemental and empathetic manner						
IM26.21	Demonstrate respect to patient privacy						
IM26.22	Demonstrate ability to maintain confidentiality in patient care						
IM26.23	Demonstrate a commitment to continued learning						
IM26.24	Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers						
IM26.25	Demonstrate responsibility and work ethics while working in the health care team						
IM26.26	Demonstrate ability to maintain required documentation in health care (including correct use of medical records)						
IM26.27	Demonstrate personal grooming that is adequate and appropriate for health care						

	responsibilities						
IM26.28	Demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning						
IM26.29	Communicate diagnostic and therapeutic opitons to patient and family in a simulated environment						
IM26.30	Communicate care opitons to patient and family with a terminal illness in a simulated environment						
IM26.31	Demonstrate awareness of limitations and seeks help and consultations appropriately						
IM26.32	Demonstrate appropriate respect to colleagues in the profession						
IM26.33	Demonstrate an understanding of the implications and the appropriate procedures and response to be followed in the event of medical errors						
IM26.34	Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts						
IM26.35	Demonstrate empathy in patient encounters						
IM26.36	Demonstrate ability to balance personal and professional priorities						

IM26.37	Demonstrate ability to manage time appropriately						
IM26.38	Demonstrate ability to form and function in appropriate professional networks						
IM26.39	Demonstrate ability to pursue and seek career advancement						
IM26.40	Demonstrate ability to follow risk management and medical error reduction practices where appropriate						
IM26.41	Demonstrate ability to work in a mentoring relationship with junior colleagues						
IM26.42	Demonstrate commitment to learning and scholarship						
IM26.48	Demonstrate altruism						
IM26.49	Administer informed consent and approriately adress patient queries to a patient being enrolled in a research protocol in a simulated environment						
Integration Anatomy							
AN20.8 Vertical integration	Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment						
AN20.9 Vertical integration	Identify & demonstrate Palpation of vessels (femoral, popliteal,dorsalis pedis,post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal						

	nerve, great and small saphenous veins						
AN24.2 Vertical integration	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate						
AN25.7 Vertical integration	Identify structures seen on a plain x-ray chest (PA view)						
AN25.8 Vertical integration	Identify and describe in brief a barium swallow						
AN25.9 Vertical integration	Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart						
AN56.1 Vertical integration	Describe & identify various layers of meninges with its extent & modifications						
AN62.2 Vertical integration	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere						
AN62.6 Vertic	Describe & identify formation, branches &						

al integration	major areas of distribution of circle of Willis						
PY4.9 Vertical integration	Discuss the physiology aspects of: peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease						
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment						
PY5.16	Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment						
PY11.14 Vertical integration	Demonstrate Basic Life Support in a simulated environment						
PY6.8 Vertical Integration	Demonstrate the correct techinque to perform & interpret Spirometry						
BI11.4 Vertical integration	Perform urine analysis to estimate and determine normal and abnormal constituents						
BI1.26 Vertical integration	Calculate albumin: globulin (AG) ratio and creatinine clearance						
BI1.27 Vertical integration	Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet						
PA13.5	Perform, Identify and describe the peripheral						

	blood picture in anemia						
PA14.3 Vertical integration	Identify and describe the peripheral smear in microcytic anemia						
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features						
PA24.3	Describe and identify the microscopic features of peptic ulcer						
PA25.6	Interpret a liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver function tests						
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes						
PA35.3 Vertical integration	Identify the etiology of meningitis based on given CSF parameters						
MI2.3	Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis						
MI2.6	Identify the causative agent of malaria and filariasis						
MI3.2	Identify the common etiologic agents of diarrhea and dysentery						
MI5.3	Identify the microbial agents causing meningitis						

MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)						
MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain).						
PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction						
PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations						
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient						
PH3.3	Perform a critical evaluation of the drug promotional literature						
PH3.5	To prepare and explain a list of P-drugs for a given case/condition						
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use						
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance						
CM5.2	Describe and demonstrate the correct method of performing a nutritional assessment of						

	individuals, families and the community by using the appropriate method						
CM5.4	Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment						
CM6.2	Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data						
CM6.3	Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs						
CM6.4	Enumerate, discuss and demonstrate common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion						
CM7.4	Define, calculate and interpret morbidity and mortality indicators based on given set of data						
CM7.6	Enumerate and evaluate the need of screening tests						
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures.						

FM14.2	Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment						
FM14.3	Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination .						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted diseases						
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)						
DR11.2	Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions						
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions						
DR16.1	Identify and distinguish skin lesions of SLE						

DR16.2	Identify and distinguish Raynaud's phenomenon						
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1 Vertical integration	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment advanced life support in adults and children						
AS3.2 Horizontal integration	Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation						
AS3.3 Horizontal integration	Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery						
AS3.4 Horizontal integration	Choose and interpret appropriate testing for patients undergoing Surgery						
AS3.5 Horizontal integration	Determine the readiness for General Surgery in a patient based on the preoperative evaluation						
PS4.2 Horizontal integration	Elicit, describe and document clinical features of alcohol and substance use disorders						

PS4.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse disorders						
PS10.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS12.2 Horizontal integration	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3 Horizontal integration	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS16.4 Horizontal integration	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PE32.3 Horizontal integration	Interpret normal Karyotype and recognize Trisomy 21						
PE28.20	Counsel the child with asthma on the correct use of inhalers in a simulated environment						
PE34.5	Able to elicit, document and present history of contact with tuberculosis in every patient						

	encounter						
PE34.6	Identify a BCG scar						
PE34.7	Interpret a Mantoux test						
PE34.8	Interpret a Chest Radiograph						
PE34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis						
PE34.11	Perform AFB staining						
PE28.19	Describe the etio-pathogenesis, clinical features, diagnosis, management and prevention of asthma in children						
PM4.5 Horizontal integration	Demonstrate correct assessment of muscle strength and range of movements						
PM6.1 Horizontal integration	Perform and demonstrate a clinical examination of sensory and motor deficits of peripheral nerve						
CT1.5	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough and fever CNS and other manifestations						
CT1.6	Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes a a) general examination, b) examination of						

	the chest and lung including loss of volume, mediastinal shift, percussion and auscultation (including DOAP session of lung sounds and added sounds) c) examination of the lymphatic system and d) relevant CNS examination						
CT1.7	Perform and interpret a PPD (mantoux) and describe and discuss the indications and pitfalls of the test						
CT1.10	Perform and interpret an AFB stain						
CT1.11	Assist in the performance, outline the correct tests that require to be performed and interpret the results of a pleural fluid aspiration						
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and co- morbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)						
CT1.17	Define criteria for the cure of Tuberculosis; describe and recognise the features of drug resistant tuberculosis, prevention and therapeutic regimens						
CT1.18	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program						
CT1.19	Communicate with patients and family in an empathetic manner about the diagnosis, therapy						

CT2.8	Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants						
CT2.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.11	Describe, discuss and interpret pulmonary function tests						
CT2.12	Perform and interpret peak expiratory flow rate						
CT2.13	Describe the appropriate diagnostic work up based on the presumed aetiology						
CT2.14	Enumerate the indications for and interpret the results of : pulse oximetry, ABG, Chest Radiograph						
CT2.15	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology						
CT2.18	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids						
CT2.19	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, antimicrobial therapy						
CT2.21	Describe discuss and counsel patients appropriately on smoking cessation						
CT2.22	Demonstrate and counsel patient on the correct use of inhalers						

CT2.23	Communicate diagnosis treatment plan and subsequent follow up plan to patients						
CT2.9	Perform a systematic examination that establishes the diagnosis and severity that includes measurement of respiratory rate, level of respiratory distress, effort tolerance, breath sounds, added sounds, identification of signs of consolidation pleural effusion and pneumothorax						
DR5.2	Identify and differentiate scabies from other lesions						
DR6.2	Identify and differentiate pediculosis from other skin lesions						
DR17.1	Enumerate and identify the cutaneous findings in vitamin A deficiency						
AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment basic life support in adults children and neonates						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate						

	investigations in a patient with mental retardation						
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment						
PM3.4	Demonstrate spasticity, rigidity and dystonia in children with cerebral palsy						
PS1.1	Establish rapport and empathy with patients						
PS1.3	Demonstrate breaking of bad news in a simulated environment						
PS1.4	Describe and demonstrate the importance of confidentiality in patient encounters						
PS3.3	Elicit, present and document a history in patients presenting with a mental disorder						
PS3.4	Describe the importance of establishing rapport with patients						
PS3.5	Perform, demonstrate and document a minimental examination						
PS3.9	Describe the steps and demonstrate in a simulated environment family education in patients with organic psychiatric disorders						
PS4.2	Elicit, describe and document clinical features of alcohol and substance use disorders						
PS4.3	Enumerate and describe the indications and interpret laboratory and other tests used in alcohol and substance abuse						

	disorders						
PS4.5	Demonstrate family education in a patient with alcohol and substance abuse in a simulated environment						
PS5.2	Enumerate, elicit, describe and document clinical features, positive s						
PS5.4	Demonstrate family education in a patient with schizophrenia in a simulated environment						
PS6.2	Enumerate, elicit, describe and document clinical features in patients with depression						
PS6.3	Enumerate and describe the indications and interpret laboratory and other tests used in depression						
PS6.5	Demonstrate family education in a patient with depression in a simulated environment						
PS7.2	Enumerate, elicit, describe and document clinical features in patients with bipolar disorders						
PS7.3	Enumerate and describe the indications and interpret laboratory and other tests used in bipolar disorders						
PS7.5	Demonstrate family education in a patient with bipolar disorders in a simulated environment						

PS8.2	Enumerate, elicit, describe and document clinical features in patients with anxiety disorders						
PS8.3	Enumerate and describe the indications and interpret laboratory and other tests used in anxiety disorders						
PS8.5	Demonstrate family education in a patient with anxiety disorders in a simulated environment						
PS9.2	Enumerate, elicit, describe and document clinical features in patients with stress related disorders						
PS9.3	Enumerate and describe the indications and interpret laboratory and other tests used in stress related disorders						
PS9.5	Demonstrate family education in a patient with stress related disorders in a simulated environment						
PS10.2	Enumerate, elicit, describe and document clinical features in patients with somatoform, dissociative and conversion disorders						
PS10.3	Enumerate and describe the indications and interpret laboratory and other tests used in somatoform, dissociative and conversion disorders						
PS10.5	Demonstrate family education in a patient with somatoform, dissociative and conversion disorders in a						

	simulated environment						
PS11.2	Enumerate, elicit, describe and document clinical features in patients with personality disorders						
PS11.3	Enumerate and describe the indications and interpret laboratory and other tests used in personality disorders						
PS11.5	Demonstrate family education in a patient with personality disorders in a simulated environment						
PS12.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosomatic disorders						
PS12.3	Enumerate and describe the indications and interpret laboratory and other tests of psychosomatic disorders						
PS12.5	Demonstrate family education in a patient with psychosomatic disorders in a simulated environment						
PS13.2	Enumerate, elicit, describe and document clinical features in patients with magnitude and etiology of psychosexual and gender identity disorders						
PS13.3	Enumerate and describe the indications and interpret laboratory and other tests used in psychosexual and gender identity disorders						

PS13.5	Demonstrate family education in a patient with psychosexual and gender identity disorders in a simulated environment						
PS14.2	Enumerate, elicit, describe and document clinical features in patients with psychiatric disorders occurring in childhood and adolescence						
PS14.4	Demonstrate family education in a patient with psychiatric disorders occurring in childhood and adolescence in a simulated environment						
PS15.3	Elicit and document a history and clinical examination and choose appropriate investigations in a patient with mental retardation						
PS16.4	Demonstrate family education in a patient with psychiatric disorders occurring in the elderly in a simulated environment						
PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs.						
IM17.14	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy						
IM24.2	Perform multidimensional geriatric assessment that includes medical,						

	psycho-social and functional components						
DR1.2	Identify and grade the various common types of acne						
DR3.1	Identify and distinguish psoriatic lesions from other causes						
DR3.2	Demonstrate the grattage test						
DR4.1	Identify and distinguish lichen planus lesions from other causes						
DR5.2	Identify and differentiate scabies from other lesions in adults and children						
DR6.2	Identify and differentiate pediculosis from other skin lesions in adults and children						
DR7.2	Identify Candida species in fungal scrapings and KOH mount						
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions						
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions						
DR8.4	Identify and distinguish viral warts from other skin lesions						
DR8.5	Identify and distinguish molluscum contagiosum from other skin lesions						
DR8.6	Enumerate the indications, describe the procedure and perform a Tzanck smear						
DR9.2	Demonstrate (and classify based on) the clinical features of leprosy including an						

	appropriate neurologic examination						
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations						
DR10.2	Identify spirochete in a dark ground microscopy						
DR10.5	Counsel in a non-judgemental and empathetic manner patients on prevention of sexually transmitted disease						

General Medicine

Subject: General Medicine **Third Year MBBS**

Sub Item: Theory lectures/ Clinical postings/Tutorials/seminars/self directed learning/ Electives

Final Summary

Sr. No	Description	Dates		Attendance percentage	Status	Signature of Teacher
		From	To		Complete/ Incomplete	
1	Theory lectures					
2	**Clinical postings**					
3	AETCOM Module					
4.	Electives					
5	Vertical Integraon					

6	Extracurricular activities					
7	Sports /Physical Education					

Subject: General Surgery
Clinical Postings

Learner -Doctor Programme (clinical clerkship)

Phase II

- History taking
- General Examination
- Local Examination with demonstration of signs.
- Psychomotor Skills
- AETCOM of Phase II

Phase III/ I

- All of Phase II plus
- Psychomotor Skills
- Differential diagnosis
- Investigations
- AETCOM of Phase III Part I

Phase III/ II

- All of Phase III Part I plus
- Psychomotor Skills
- Management
- Counselling
- AETCOM Phase III/ Part II

-There shall be end post exam at the end of 1st, 2nd and 3rd clinical posting which will be added to internal assessment for practicals.
-At the end of 4th clinical posting of 4 weeks there will be only formative assessment.

Subject: General Surgery
Lectures

MBBS Phase II-
Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
			Lecture: 1		
1.	**Introductory Lecture**		Welcome History of surgery Introduction to surgery and allied subjects Teaching, Learning & Assessment -CBME		1
2.	**Metabolic Response to Injury**		**Lecture**: 2		
		SU 1.1			1
			Describe basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.	Physiology and Biochemistry	
		SU 1.2	**Lecture**: 3		1
			Describe the factors that affect the metabolic responses to injury.	Biochemistry	
3.	**Shock**				
		SU 2.1	**Lecture**: 4		1
		PA6.3	Describe Pathophysiology of shock, types of shock and principles of resuscitation including fluid replacement and monitoring. Define and describe shock, its pathogenesis and its stages	Pathology and Physiology	
		SU 2.2	**Lecture**: 5		1
			Describe the clinical features of shock and its appropriate treatment		

4.	**Blood and blood components**				
		SU 3.1	**Lecture**: 6		1
		PA22.4	Describe the indications and appropriate use of blood and blood products and complications of blood transfusion. Enumerate blood components and describe their clinical uses	Pathology	
5.	**Burns**				
		SU 4.1	**Lecture**: 7		1
			Describe pathophysiology of burns. Describe clinical features, diagnose type and extent of burns.	Physiology	
		SU 4.2, 4.3	**Lecture**: 8		1
			Plan appropriate treatment of burns. Discuss medicolegal aspect in burns injuries.		
6.	**Wound healing and wound care**				
		SU 5.1	**Lecture**: 9		1
		PA5.1 PA4.1 PA4.2	Describe normal wound healing and factors affecting healing. Define and describe the process of repair and regeneration including wound healing and its types Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events Enumerate and describe the mediators of acute inflammation	Pathology	
		SU 5.3	**Lecture**: 10		1
			Differentiate the various types of wounds, plan and observe management of wounds.		
7.	**Surgical Infections**				
		SU 6.1	**Lecture**: 11		1
			Define and describe the etiology and pathogenesis of surgical infections	Microbiology	

		SU 6.1	**Lecture**: 12		1
			Define and describe the etiology and pathogenesis of surgical infections- HIV-AIDS, Hepatitis, Gas Gangrene etc.	Microbiology	
		SU 6.2	**Lecture**: 13		1
			Enumerate prophylactic and therapeutic antibiotics. Plan appropriate management.		
8.	**Investigations of a surgical patient**				
		SU 9.1	**Lecture**: 14		1
		PA8.1 PA8.2 MI7.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient. Describe the diagnostic role of cytology and its application in clinical care. Describe the basis of exfoliative cytology including the technique, stains used Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	Biochemistry, Microbiology and Pathology	
9.	**Nutrition and fluid therapy**				
		SU 12.1	**Lecture**:15		1
			Enumerate the causes and consequences of malnutrition in the surgical patient.	Physiology	
		SU 12.2	**Lecture**:16		1
			Describe and discuss the methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patients.	Physiology	
		SU 12.3	**Lecture**:17		1

			Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications.	Biochemistry	
10.	**Transplantation**				
		SU 13.1	**Lecture**: 18		1
			Describe the immunological basis of organ transplantation.	Microbiology	
		SU 13.2	**Lecture**: 19		1
			Discuss the principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ transplantation	Microbiology, Pharmacology	
11.	**Basic surgical skills**				
		SU 14.1	**Lecture**: 20		1
		MI1.4 MI1.5	Describe Aseptic techniques, sterilisation and disinfection. Classify and describe the different methods of sterilization and disinfection. Discuss the application of the different methods in the laboratory, in clinical and surgical practice Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice	Microbiology	
12.	**Biohazard disposal**				
		SU 15.1	**Lecture**: 21		1
		MI8.7	Describe classification of hospital waste and appropriate methods of disposal. Demonstrate Infection control practices and use of Personal Protective Equipment (PPE)	Microbiology	
13.	**Trauma**				
		SU 17.1	**Lecture**: 22		1
			Describe the principles of first aid.		
		SU 17.2	**Lecture**: 23		1

			Basic Life Support	Anaesthesiology	
14.	**Skin and Subcutaneous tissue**				
		SU 18.1, SU 18.2, 18.3	**Lecture**: 24		1
			Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections. Describe clinical examination of surgical patient including swelling and discuss investigations for diagnosis and treatment plan. Classify skin tumours. Differentiate different skin tumours and discuss their management.		
15.	**Vascular diseases**				
		SU27.1	**Lecture**: 25		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.		

MBBS Phase III- Part I
Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Metabolic response to injury**				
		SU1.3	**Lecture**: 1		1
			Describe basic concepts of postoperative care.		
2.	**Surgical Audit and Research**				
		SU7.1.7.2	**Lecture**: 2		1
			Describe the planning and conduct of surgical audit Describe the principles and steps of clinical research in General Surgery	Community Medicine	
3.	**Ethics**				
		SU8.1, 8.2	**Lecture**: 3		1
		AS10.3	Describe the principles of Ethics as it pertains to General Surgery and demonstrate professionalism and empathy to the patient undergoing general surgery Describe the role of communication in patient safety	Forensic Medicine, AETCOM	
		SU9.2	**Lecture**: 4		1
			Biological basis for early detection of cancer and multidisciplinary approach in management of cancer		
4.	**Pre, intra and post-operative management**.				
		SU10.1	**Lecture**: 5		1
			Describe the principles of perioperative management of common	AETCOM	
			surgical procedures and Describe the steps and obtain informed consent in a simulated environment		

		IM5.13, IM15.9	Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease. 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.		
5.	**Anaesthesia and pain management**				
		SU11.1, 11.5	**Lecture**: 6		1
		AS3.1, AS5.6	Describe principles of Preoperative assessment. Describe principles of providing post-operative pain relief and management of chronic pain. Describe the principles of preoperative evaluation. Observe and describe the principles and steps/ techniques involved S in common blocks used in Surgery(including brachial plexus blocks)	Anaesthesiology	
		SU11.6	**Lecture**: 7		1
		AS3.2	Describe Principles of safe General Surgery Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation	Anaesthesiology	
6.	**Transplantation**				
		SU13.4	**Lecture**: 9		1
			Counsel patients and relatives on organ donation in a simulated Environment Enumerate the indications for hepatic transplantation	AETCOM	
7.	**Basic Surgical Skills**				
		SU14.2	**Lecture**: 10		1
			Describe Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.		
		SU14.3	**Lecture**: 11		1
			Describe the materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)		

8.	**Trauma**				
		SU17.2	**Lecture**: 12		1
			Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	Anaesthesiology	
9.	**Developmental anomalies of face, mouth and jaws**				
		SU19.1, 19.2	**Lecture**: 13		1
			Describe the etiology and classification of cleft lip and palate. Describe the Principles of reconstruction of cleft lip and palate.	Human Anatomy	
10.	**Oropharyngeal cancer**				
		SU20.1, SU20.2	**Lecture**: 14		1
			Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer. Enumerate the appropriate investigations and discuss the Principles of treatment and reconstructive flap	ENT	
		DE 4.1, DE 4.2, DE 4.3, DE 4.4	**Lecture**: 15		1
			Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity. Discuss the role of etiological factors in the formation of precancerous /cancerous lesions. Identify potential pre-cancerous /cancerous lesions. Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.		
11.	**Disorders of salivary glands**				
		SU21.1	**Lecture**: 16		1
		AN28.9 , AN34.1 ,	Describe surgical anatomy of the salivary glands, pathology clinical presentation of disorders of salivary glands Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct		

			and surgical importance. Describe & demonstrate the morphology, relations and nerve supply		
		SU21.2	**Lecture**: 17		1
			Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands		
12.	**Thyroid and Parathyroid Glands**				
		SU22.1, 22.2	**Lecture**: 18		1
		AN35.2 PA32.1, IM12.13, IM12.15	Describe the applied anatomy and physiology of thyroid. Describe the etiopathogenesis of thyroidal swellings. Describe the etiopathogenesis of thyroidal swellings. Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings, Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs. Describe and discuss the indications of thionamide therapy, radio iodine therapy and Surgery in the management of thyrotoxicosis	Human Anatomy, Pathology	
		SU22.4	**Lecture**: 19		1
			Describe the clinical features, classification and principles of management of thyroid cancer		
		SU22.5	**Lecture**: 20		1
		IM22.2	Describe the applied anatomy of parathyroid. Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism	Human Anatomy	
13.	**Adrenal Glands**				
		SU23.1, 23.2, 23.3	**Lecture**: 21		1

			Describe the applied anatomy of adrenal glands. Describe the etiology, clinical features and principles of management of disorders of adrenal gland. Describe the clinical features, principles of investigation and management of Adrenal tumours	Human Anatomy	
14.	**Breast**				
		SU25.1	**Lecture**: 22		1
		PA31.1	Describe applied anatomy and appropriate investigations for breast disease Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease	Human Anatomy	
		SU25.2	**Lecture**: 23		1
		PA31.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast. Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast		
		SU 25.3	**Lecture**: 24		1
			Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.	Radiodiagnosis	
15.	**Vascular diseases**				
		SU 27.1	**Lecture**: 25		
		AN19.3, AN20.5 AN20.9	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease. Explain the concept of "Peripheral heart. Explain anatomical basis of varicose veins and deep vein thrombosis. Identify & demonstrate palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, great and small saphenous veins		

MBBS Phase III- Part II
Total Teaching hours: 70 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Anaesthesia and Pain Management**				
		SU 11.2	**Lecture**: 1		1
		AS5.6	Enumerate the principles of general, regional and local anaesthesia. Observe and describe the principles and steps/ techniques involved in common blocks used in Surgery (including brachial plexus blocks)	Anaesthesiology	
		SU 11.4	**Lecture**: 2		1
			Enumerate the indications and principles of day care General Surgery.	Anaesthesiology	
		SU 16.1	**Lecture**: 3		1
			Minimal Invasive General Surgery: Describe indications, advantages and disadvantages of Minimally Invasive General Surgery.		
2.	**Trauma**				
		SU 17.4, 17.5, 17.6	**Lecture**: 4		1
			Describe pathophysiology, mechanism of head injuries. Describe clinical features for neurological assessment and GCS in head injuries. Choose appropriate investigations and discuss the principles of management of head injuries.		

		SU 17.7	**Lecture**: 5		1
			Describe the clinical features of soft tissue injuries. Choose appropriate investigations and discuss the principles of management.		
		SU 17.8, 17.9	**Lecture**: 6		1
			Describe pathophysiology of chest injuries. Describe the clinical features and principles of management of chest injuries.		
		SU17.3	**Lecture**: 7		1
			Describe pathophysiology of Abdominal injuries. Describe the clinical features and principles of management of Abdominal injuries.		
3.	**Pancreas**				
		SU 24.1	**Lecture**: 8		1
		AN55.2	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis. Demonstrate the surface projections of: stomach, liver, fundus of gall bladder, spleen, duodenum, pancreas, ileocecal junction, kidneys & root of mesentery	Human Anatomy	
		SU 24.2	**Lecture**: 9		1
			Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumours.		
		SU 24.3	**Lecture**: 10		1
			Describe the principles of investigation and management of pancreatic disorders including pancreatitis and endocrine tumours.		
4.	**Cardio-thoracic General Surgery- Chest- Heart and Lungs**				
		SU 26.1, 26.2	**Lecture**: 11		1

			Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases, diseases of Thorax and Diaphragm		
		SU 26.3	**Lecture**: 12		1
			Describe the clinical features of mediastinal diseases and the principles of management.		
		SU 26.4	**Lecture**: 13		1
			Describe the etiology, pathogenesis, clinical features of tumors of the lung and the principles of management.		
5.	**Vascular Diseases**				
		SU 27.1	**Lecture**: 14		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.		
		SU 27.2, 27.3, 27.4	**Lecture**: 15		1
			Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease. Describe clinical features, investigations and principles of management of vasospastic disorders. Describe the types of gangrene and principles of amputation.		
		SU 27.5, 27.6	**Lecture**: 16		1
		AN20.5	Describe the applied anatomy of the venous system of lower limb. Explain anatomical basis of varicose veins and deep vein thrombosis	Human Anatomy	
		SU 27.7	**Lecture**: 17		1
			Describe pathophysiology, clinical features, Investigations and principles of management of lymph edema, lymphangitis and lymphomas. Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system		
6.	**Abdomen**				

		SU 28.1	**Lecture**: 18		1
		AN44.4 AN44.5	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle. Explain the anatomical basis of inguinal hernia.	Human Anatomy	
		SU 28.1	**Lecture**: 19		1
			Describe pathophysiology, clinical features, Investigations and principles of management of Hernias	Human Anatomy	
		SU 28.1	**Lecture**: 20		1
		AN44.6	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias Describe & demonstrate attachments of muscles of anterior abdominal wall	Human Anatomy	
		SU 28.1	**Lecture**:21		1
		AN44.7	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias Enumerate common Abdominal incisions	Human Anatomy	
		SU 28.3	**Lecture**: 22		1
		AN47.2 AN47.3 AN47.4	Describe causes, clinical features, complications and principles of management of peritonitis and omental pathologies Name & identify various peritoneal folds & pouches with its explanation. Explain anatomical basis of Ascites & Peritonitis Explain anatomical basis of Subphrenic abscess	Human Anatomy	
		SU 28.4	**Lecture**: 23		1
		AN47.4	Describe pathophysiology, clinical features, investigations and K principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors Explain anatomical basis of Subphrenic abscess		
		SU 28.5	**Lecture**: 24		1
		AN23.1	Describe the applied Anatomy and physiology of esophagus Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of	Human Anatomy, Physiology	

			oesophagus		
		SU 28.6	**Lecture**: 25		1
			Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus		
		SU 28.7	**Lecture**: 26		1
		AN47.6 AN47.1	Describe the applied anatomy and physiology of stomach Explain the anatomical basis of Splenic notch, accessory spleens, Kehr's sign, different types of vagotomy, liver biopsy (site of needle puncture), referred pain in cholecystitis, Obstructive jaundice, referred pain around umbilicus, radiating pain of kidney to groin &Lymphatic spread in carcinoma stomach Describe & identify boundaries and recesses of Lesser & Greater sac	Human Anatomy	
		SU 28.8	**Lecture**: 27		1
			Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach		
		SU 28.10	**Lecture**: 28		1
		   AN47.4 AN47.6	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 Explain anatomical basis of Subphrenic abscess Liver biopsy (site of needle puncture), referred pain in cholecystitis, Obstructive jaundice	Human Anatomy	
		SU 28.10	**Lecture**: 29		1
			Describe the applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumours of the liver	Human Anatomy	

		SU 28.10	**Lecture**: 30		1
		AN47.3	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 Explain anatomical basis of Ascites & Peritonitis	Human Anatomy	
		SU 28.11	**Lecture**: 31		1
		AN47.6	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis – prophylaxis Explain the anatomical basis of Splenic notch, accessory spleens, Kehr's sign	Human Anatomy	
		SU 28.12	**Lecture**: 32		1
		AN47.7	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system Mention the clinical importance of Calot's triangle	Human Anatomy	
		SU 28.12	**Lecture**: 33		1
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system	Human Anatomy	
		SU 28.12	**Lecture**: 34		1
		AN47.10 AN47.11	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system Enumerate the sites of portosystemic anastomosis Explain the anatomic basis of hematemesis & caput medusae in portal hypertension	Human Anatomy	

		SU 28.13, 28.14	**Lecture**: 35		1
		AN52.6	Describe the applied anatomy of small and large intestine Describe the development and congenital anomalies of foregut, midgut & hindgut	Human Anatomy	
		SU 28.13, 28.14	**Lecture**: 36		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	**Lecture**: 37		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	**Lecture**: 38		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	**Lecture**: 39		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	**Lecture**: 40		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.13, 28.14	**Lecture**: 41		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	Human Anatomy	
		SU 28.15	**Lecture**: 42		1

			Describe the clinical features, investigations and principles of management of diseases of Appendix including appendicitis and its complications.		
		SU 28.16	**Lecture**: 43		1
		AN49.4	Describe applied anatomy including congenital anomalies of the rectum and anal canal Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa	Human Anatomy	
		SU 28.16	**Lecture**: 44		1
		AN48.8	Describe applied anatomy including congenital anomalies of the rectum and anal canal Mention the structures palpable during vaginal & rectal examination	Human Anatomy	
		SU 28.17	**Lecture**: 45		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
		SU 28.17	**Lecture**: 46		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
7.	**Urinary System**				
		SU 29.1	**Lecture**: 47		1
			Describe the causes, investigations and principles of management of Hematuria		
		SU 29.2	**Lecture**: 48		1
		AN52.7	Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system Describe the development of urinary system	Human Anatomy	
		SU 29.3	**Lecture**: 49		1
		MI7.1	Describe the Clinical features, Investigations and principles of management of urinary tract infections Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	Microbiology	
		SU 29.4	**Lecture**: 50		1

			Describe the clinical features, investigations and principles of management of hydronephrosis		
		SU 29.5	**Lecture**: 51		1
			Describe the clinical features, investigations and principles of management of renal calculi		
		SU 29.5	**Lecture**: 52		1
			Describe the clinical features, investigations and principles of management of renal calculi		
		SU 29.6	**Lecture**: 53		1
			Describe the clinical features, investigations and principles of management of renal tumours		
		SU 29.7	**Lecture**: 54		1
			Describe the principles of management of acute and chronic retention of urine		
		SU 29.8	**Lecture**: 55		1
			Describe the clinical features, investigations and principles of management of bladder cancer		
		SU 29.9	**Lecture**: 56		1
		AN48.7	Describe the clinical features, investigations and principles of management of disorders of prostate Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer	Human Anatomy	
		SU 29.10	**Lecture**: 57		1
			Describe clinical features, investigations and management of urethral strictures and urethral injuries		
8.	**Penis, Testis and scrotum**				
		SU 30.1	**Lecture**: 58		1
		AN46.5	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Explain the anatomical basis of Phimosis & Circumcision	Human Anatomy	
		SU 30.1	**Lecture**: 59		1

			Describe the clinical features, investigations and principles of management of carcinoma penis.		
		SU 30.2, 30.3	**Lecture**: 60		1
		AN46.1	Describe the applied anatomy clinical features, investigations and principles of management of undescended testis. Describe the applied anatomy clinical features, investigations and principles of management of epidydimo-orchitis Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	Human Anatomy	
		SU 30.4, 30.5	**Lecture**: 61		1
		AN46.4	Describe the applied anatomy clinical features, investigations and principles of management of varicocele and hydrocoele Explain the anatomical basis of varicocele	Human Anatomy	
		SU 30.6	**Lecture**: 62		1
			Describe classification, clinical features, investigations and principles of management of benign tumours of testis.		
		SU 30.6	**Lecture**: 63		1
			Describe classification, clinical features, investigations and principles of management of malignant tumours of testis.		
9.			**Lecture**: 64		1
			Revision **Lecture** 1		
10.			**Lecture**: 65		1
			Revision **Lecture** 2		
11.			**Lecture**: 66		1
			Revision **Lecture** 3		
12.			**Lecture**: 67		1
			Revision **Lecture** 4		
13.			**Lecture**: 68		1
			Revision **Lecture**5		

14.			**Lecture**: 69		1
			Revision **Lecture** 6		
15.			**Lecture**: 70		1
			Revision **Lecture** 7		

Subject: General Surgery
Self-Directed Learning

MBBS phase III/I
Total Teaching hours : 5 hours
***These are suggested topics which can be modified at institutional level**

Sr. No.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Ethics**				
		SU8.1	SDL:1		3
			Describe the principles of Ethics as it pertains to General Surgery. Demonstrate Professionalism and empathy to the patient.		
2.	**Transplantation**				
		SU13.3	SDL:2		2
			Discuss the legal and ethical issues concerning organ donation. Counsel patients and relatives on organ donation in a simulated.		

MBBS phase III/II

Total Teaching hours : 15 hours

***These are suggested topics which can be modified at institutional level**

Sr. No	TOPICS	COMPETENCIES	SUBTOPICS	HOURS
1.	**Thyroid**			
		SU 22.2, SU 22.3, SU22.4	SDL:1	4
			Describe the etiopathogenesis of thyroidal swellings. Demonstrate and document the correct clinical examination of thyroid swellings and discus the differential diagnosis and their management. Describe the clinical features, classification and principles of management of thyroid cancer	
2.	**Breast**			
		SU 25.2, SU 25.3	SDL:2	4
			Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast. Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.	
3.	**Oral malignancy**			
		SU 20.1, SU 20.2	SDL:3	3
			Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer. Enumerate the appropriate investigations and discuss the Principles of treatment.	
4.	**Communication skills – Role play**			
		AETCOM	SDL:4	4

Subject: General Surgery
Small Group Discussion

MBBS phase III/I -

Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 35 hours

- Competencies written in red (horizontal) and green (vertical) are of alignment and integration.
- 25 % of allotted time of the third professional shall be utilised for integrated learning with pre- and para-clinical subjects and shall be assessed during the clinical subject's examination.
- This allotted time will be utilised as integrated teaching by para- clinical subjects with clinical subjects (as Applied Anatomy, Clinical Pathology, Clinical Pharmacology, Clinical Microbiology, Radio diagnosis, Instruments, Operative Surgery, Communication skills etc.).

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Metabolic response to injury**				
		SU1.3	SGD: 1		1
		AS3.1, AS9.3, AS9.4	Describe basic concepts of perioperative care- preoperative Describe the principles of preoperative evaluation Describe the principles of fluid therapy in the preoperative period	Anaesthesiology	

			Enumerate blood products and describe the use of blood products in the preoperative period		
		SU1.3	SGD: 2		1
			Describe basic concepts of perioperative care.- intraoperative	Anaesthesiology	
		SU1.3,	SGD: 3		1
		AS6.3	Describe basic concepts of perioperative care- postoperative Describe the common complications encountered by patients in the recovery room, their recognition and principles of management	Anaesthesiology	
2.	**Shock**				
		SU2.1,	SGD: 4		1
		PA6.3	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring. Define and describe shock, its pathogenesis and its stages	Pathology, Physiology	
		SU2.2,	SGD: 5		1
		IM15.3	Describe the clinical features of shock and its appropriate treatment Describe and discuss the physiologic effects of acute blood and volume loss	General Medicine	
3.	**Blood and blood components**				
		SU3.2	SGD: 6		1
		PA22.4	Observe blood transfusions Enumerate blood components and describe their clinical uses	Pathology	
4.	**Burns**				

		SU4.1, SU4.2	SGD: 7		1
			Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns. Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.	Physiology	
		SU4.3	SGD: 8		1
		FM2.25	Discuss the Medicolegal aspects in burn injuries. Describe types of injuries, clinical features, patho-physiology, postmortem findings and medico-legal aspects in cases of burns, scalds, lightening, electrocution and radiations		
					1
				Forensic Medicine	
5.	**Wound healing and wound care**				
		SU5.2, SU5.3	SGD: 9		1
			Elicit, document and present a history in a patient presenting with wounds. Differentiate the various types of wounds, plan and observe management of wounds.		
		SU5.4	SGD:10		1
			Discuss medico legal aspects of wounds		
					1
		FM3.3 , FM3.4	Mechanical injuries and wounds: Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds and their	Forensic Medicine	

		, FM3.6	medico-legal aspects. Mechanical injuries and wounds: define injury, assault & hurt. Describe IPC pertaining to injuries Mechanical injuries and wounds:Describe healing of injury and fracture of bones with its medico-legal importance		
6.	**Surgical infections**				
		SU6.1	SGD:11		1
			Define and describe the aetiology and pathogenesis of surgical	Microbiology	
		MI7.1	Infections Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system		
		SU6.2	SGD:12		1
			Enumerate Prophylactic and therapeutic antibiotics		
			Plan appropriate management		
7.	**Surgical Audit and Research**				
		SU7.1, SU7.2	SGD:13		1
			Describe the Planning and conduct of Surgical audit Describe the principles and steps of clinical research in General Surgery	Community Medicine	
8.	**Ethics**				
		SU8.1 ,SU8.2	SGD:14		1
			Describe the principles of Ethics as it pertains to General Surgery Demonstrate Professionalism and empathy to the patient undergoing general surgery	Forensic Medicine, AETCOM	

9.	**Investigation of surgical patient**				
		SU9.1	SGD:15		1
			Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	Biochemistry,microbiology,pathology	
		SU9.2	SGD 16		
			Biological basis for early detection of cancer and multidisciplinary approach in management of cancer		
10.	**Pre, intra and post-operative management**.				
		SU10.1	SGD:17		1
			Describe the principles of perioperative management of common		
			surgical procedures		
11.	**Nutrition and fluid therapy**				
		SU12.1	SGD:18	Physiology,Biochemistry	1
			Enumerate the causes and consequences of malnutrition in the surgical patient		
		SU12.2	Describe and discuss the methods of estimation and replacement Of the fluid and electrolyte requirements in the surgical patient		

		SU12.3	Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications		
12.	**Transplantation**				
		SU13.3	SGD: 19	AETCOM	1
			Discuss the legal and ethical issues concerning organ donation		
13.	**Basic Surgical Skills**				
		SU14.2	SGD: 20		1
			Describe Surgical approaches, incisions and the use of appropriate instruments in Surgery in general.		
		SU14.3	SGD: 21		1
			Describe the materials and methods used for surgical wound		
			closure and anastomosis (sutures, knots and needles)		
14	**Biohazard Disposal**	SU15.1	SGD 22	Microbiology, Community medicine	1
		MI8.7	Describe **c**lassification of hospital waste and appropriate methods of disposal Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)		
15.	**Trauma**				
		SU17.3	SGD:23		1
			Describe the Principles in management of mass casualties		
16.	**Skin and Subcutaneous Tissue**		SGD 24		1
		SU18.1 SU18.2	Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections. Classify skin tumors		

		SU18.3	Differentiate different skin tumors and discuss their management. Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.		
17.	**Developmental anomalies of face, mouth and jaws**				
		SU19.1, 19.2	SGD:25	Human Anatomy	1
			Describe the etiology and classification of cleft lip and palate. Describe the Principles of reconstruction of cleft lip and palate		
18	**Oropharyngeal carcinoma**		SGD 26	ENT	1
		SU20.1 SU20.2	Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer Enumerate the appropriate investigations and discuss the Principles of treatment		
19.	**Disorders of salivary glands**				
		SU21.1	SGD:27	Human Anatomy	1
		AN34.1 AN28.9	Describe surgical anatomy of the salivary glands, pathology, and clinical presentation of disorders of salivary glands Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion		

			Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance		
		SU21.2	SGD:28		1
			Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands		
20.	**Thyroid and Parathyroid Glands**				
		SU22.1, 22.2	SGD:29	Human anatomy, Pathology	1
		AN35.2	Describe the applied anatomy and physiology of thyroid. Describe the etiopathogenesis of thyroidal swellings. Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland		
		SU22.3	SGD:30		1
		PA32.1	Demonstrate and document the correct clinical examination of thyroid swellings and discus the differential diagnosis and their management Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings		
		SU22.4, SU22.5	SGD:31		1
		AN35.8	Describe the clinical features, classification and principles of management of thyroid cancer		

			Describe the applied anatomy of parathyroid Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management Describe the anatomically relevant clinical features of Thyroid swellings		
21.	**Breast**				
		SU 25.1	SGD:32	Human anatomy, Radiodiagnosis	1
		AN9.2	Describe applied anatomy and appropriate investigations for breast disease Breast-Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast		
		SU 25.2	SGD:33		1
			Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast.		
22.	**Vascular diseases**				
		SU 27.1, 27.2, 27.3, 27.4	SGD:34	Human Anatomy	1
		AN20.9	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease. Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease. Describe clinical features, investigations and principles of management of vasospastic disorders. Describe the types of gangrene and principles of amputation.		

			Identify & demonstrate palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, great and small saphenous veins		
		SU 27.5, 27.6, 27.7	SGD:35		1
		AN6.3 AN23.7	Describe the applied anatomy of venous system of lower limb. Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins. Describe pathophysiology, clinical features, investigations and principles of management of Lymph edema, lymphangitis and Lymphomas. Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system Mention the extent, relations and applied anatomy of lymphatic duct		

MBBS Phase III/II-

Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 125 hours

- Competencies written in red (horizontal) and green (vertical) are of alignment and integration.
- 25 % of allotted time of the third professional shall be utilised for integrated learning with pre- and para-clinical subjects and shall be assessed during the clinical subject's examination.
- This allotted time will be utilised as integrated teaching by para- clinical subjects with clinical subjects (as Applied Anatomy, Clinical Pathology, Clinical Pharmacology, Clinical Microbiology, Radio diagnosis, Instruments, Operative Surgery, Communication skills etc.).

SR. NO.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Shock**				
		SU 2.3	SGD: 1		1
		PA6.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care. Define and describe shock, its pathogenesis and its stages	AETCOM	
2	**Blood and blood components**				
		SU 3.3	SGD: 2		1
		PA22.4	Councell patients and family/friend for blood transfusion and blood donation. Enumerate blood components and describe their clinical uses	Pathology	
3.	**Burns**				
		SU 4.4	SGD: 3		1
			Communicate and counsel patients and families on the outcome and rehabilitating demonstrating empathy and care.		

4.	**Surgical infections**				
		SU 6.1, 6.2,	SGD: 4		1
		OR3.1,OR3.3,OR4.1	Communicate and counsel patients and families on the outcome and rehabilitating demonstrating empathy and care. Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections. Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis. Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy	Orthopaedics	
5.	**Ethics**				
		SU 8.3	SGD: 5		1
			Discuss Medico-legal issues in surgical practice	Forensic Medicine, AETCOM	
6.	**Investigation of surgical patient**				
		SU 9.2	SGD: 6		1

			Biological basis for early detection of cancer and multidisciplinary approach in management of cancer		
		SU 9.3	SGD: 7		1
			Communicate the results of surgical investigations and counsel the patient appropriately.		
7.	**Pre, intra and post operative management.**				
		SU 10.2	SGD: 8		1
		IM24.11	Describe the steps and obtain informed consent in a simulated environment. Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery	AETCOM	
		SU 10.3	SGD: 9		1
			Observe common surgical procedures and assist in minor surgical procedures; observe emergency life saving surgical procedures.		
		SU 10.4	SGD: 10		1
			Perform basic surgical skills such as first aid including suturing and minor surgical procedures in simulated environment.		
8.	**Anaesthesia and Pain Management**				
		SU 11.3	SGD: 11		1
			Demonstrate maintenance of an airway in a mannequin or equivalent.	Anaesthesiology	
		SU 11.1, 11.2	SGD: 12		1

			Describe principles of preoperative assessment. Enumerate the principles of general, regional and local anaesthesia.	Anaesthesiology	
		SU 11.3, 11.4, 11.5	SGD: 13		1
			Enumerate the indications and principles of day care general surgery. Describe principles of providing post-operative pain relief and management of chronic pain. Describe principles of safe General surgery.	Anaesthesiology	
9.	**Nutrition and fluid therapy**				
		SU 12.1, 12.2	SGD: 14		1
			Enumerate the causes and consequnces of malnutrition in the surgical patient. Describe and discuss the methods of estimation and replacement of the fluid and electrolyte requirements in the surgical patient.	Physiology	
		SU 12.3	SGD: 15		1
			Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications.	Biochemistry	
10.	**Transplantation**				
		SU 13.3	SGD: 16		1
			Discuss the legal and ethical issues concerning organ donation.	AETCOM	
11.	**Biohazard disposal**				
		SU 15.1	SGD: 17		1
			Describe classification of hospital waste and appropriate methods of disposal.	Microbiology	
12.	**Minimally invasive General surgery**				

		SU 16.1	SGD: 18		1
			Minimally invasive General surgery: Describe indications advantages and disadvantages of minimally invasive General surgery.		
13.	**Trauma**				
		SU 17.4	SGD: 19		1
			Describe pathophysiology, mechanism of head injuries.		
		SU 17.5	SGD: 20		1
			Describe clinical features for neurological assessment and GCS in head injuries.		
		SU 17.6,	SGD: 21		1
		PM8.1	Choose appropriate investigations and discuss the principles of management of head injuries. Describe the clinical features, evaluation, diagnosis and management of disability following traumatic brain injury	Physical Medicine & Rehabilitation	
		SU 17.7	SGD: 22		1
		OR11.1	Describe the clinical features of soft tissue injuries. Choose appropriate investigations and discuss the principles of management. Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures	Orthopaedics	
		SU 17.8	SGD: 23		1
			Describe pathophysiology of chest injuries.		
		SU 17.9	SGD: 24		1

			Describe the clinical features and principles of management of chest injuries.		
		SU 17.10	SGD: 25		1
			Demonstrate Airway maintenance. Recognise and manage tension pneumothorax, hemothorax and flail chest in simulated environment.	Anaesthesiology	
14.	**Skin and subcutaneous tissue**				
		SU 18.3.	SGD: 26		1
		PM7.9	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan. Enumerate the indications of debridement, and Split thickness skin grafting.	Physical Medicine & Rehabilitation	
15.	**Oropharyngeal cancer**				
		SU 20.1	SGD: 27		1
			Describe etiopathogenesis of oral cancer. Symptoms and signs of oropharyngeal cancer.	ENT	
		SU 20.2	SGD: 28		1
			Enumerate the appropriate investigations for oropharyngeal cancer.		
		SU 20.2	SGD: 29		1
			Enumerate the appropriate investigations for oropharyngeal cancer.		
		SU 20.3	SGD: 30		1
			Enumerate the principles of treatment for oropharyngeal cancer.		
		SU 20.3	SGD: 31		1

			Enumerate the principles of treatment for oropharyngeal cancer.		
16.	**Adrenal Glands**				
		SU 23.1, 23.2	SGD: 32		1
			Describe the applied anatomy of adrenal glands. Describe the etiology, clinical features and principles of management of disorders of adrenal glands.	Human Anatomy,General Medicine	
		SU 23.3	SGD: 33		1
			Describe the clinical features, principles of investigation and management of adrenal tumors.		
17.	**Pancreas**				
		SU 24.1,	SGD: 34		1
		PA32.6	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis. Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	Human Anatomy	
		SU 24.2	SGD: 35		1
			Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumors.		
		SU 24.3	SGD: 36		1
			Describe the principles of investigation and management of pancreatic disorders including pancreatitis and endocrine tumors.		

18.	**Breast**				
		SU 25.3	SGD: 37		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of benign and malignant tumors of breast.	Radiodiagnosis	
		SU 25.3	SGD: 38		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of benign and malignant tumors of breast.	Radiodiagnosis	
		SU 25.4	SGD: 39		1
			Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast.		
		SU 25.5	SGD: 40		1
			Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent.		
19.	**Cardio-thoracic General Surgery-Chest- Heart and Lungs**				
		SU 26.1	SGD: 41		1
			Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases.		
		SU 26.2	SGD: 42		1
			Outline the role of surgery in the management of diseases of Thorax and Diaphragm		
		SU 26.3	SGD: 43		1

			Describe the clinical features of mediasitnal diseases and the principles of management.		
		SU 26.4	SGD: 44		1
			Describe the etiology, pathogenesis, clinical features of tumors of the lung and the principles of management.		
20.	**Vascular Diseases**				
		SU 27.1	SGD: 45		1
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.		
		SU 27.2	SGD: 46		1
			Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease.		
		SU 27.3	SGD: 47		1
			Describe clinical features, investigations and principles of management of vasospastic disorders.		
		SU 27.4	SGD: 48		1
			Describe the types of gangrene and principles of amputation.		
		SU 27.5	SGD: 49		1
			Describe the applied anatomy of the venous system of lower limb.		
		SU 27.6	SGD: 50		1
			Describe pathophysiology , clinical features, investigations and principles of management of DVT and varicose veins.		
		SU 27.7	SGD: 51		1

			Describe pathophysiology, clinical features, Investigations and principles of management of lymph edema, lymphangitis and lymphomas.		
		SU 27.8	SGD: 52		1
			Demonstrate the correct examination of the lymphatic system.		
21.	**Abdomen**				
		SU 28.1 .	SGD: 53 .		1
		AN44.1.	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias . Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen .	Human Anatomy	
		SU 28.1 .	SGD: 54		1
		AN44.4 . AN44.5	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias . Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	Human Anatomy	
		SU 28.1	SGD: 55		1
			Describe pathophysiology, clinical features, Investigations and principles of management of Hernias		
		SU 28.1	SGD: 56		1
		AN44.4 . AN44.5	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias .	Human Anatomy	

			Explain the anatomical basis of inguinal hernia.		
		SU 28.1	SGD: 57		1
		AN15.3	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias . Describe and demonstrate boundaries, floor, roof and contents of femoral triangle	Human Anatomy	
		SU 28.1,AN44.6,	SGD: 58		1
			Describe pathophysiology, clinical features, Investigations and principles of management of Hernias. Describe & demonstrate attachments of muscles of anterior abdominal wall	Human Anatomy	
		SU 28.3	SGD: 59		1
			Describe causes, clinical features, complications and principles of mangament of peritonitis		
		SU 28.3	SGD: 60		1
			Describe causes, clinical features, complications and principles of managament of peritonitis		
		SU 28.3	SGD: 61		1
		AN47.5	Describe causes, clinical features, complications and principles of mangament of omental pathologies. Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)	Human Anatomy	

		SU 28.4	SGD: 62		1
			Describe pathophysiology, clinical features, investigations and K principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors		
		SU 28.5	SGD: 63		1
		IM19.9	Describe the applied Anatomy and physiology of esophagus. Enumerate the indications for use of Surgery and botulinum toxin in the treatment of movement disorders	Human Anatomy, Physiology	
		SU 28.5,	SGD: 64		1
		IM15.4, IM15.6	Describe the applied Anatomy and physiology of esophagus. Elicit document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors. Distinguish between upper and lower gastrointestinal bleeding based on the clinical features	Human Anatomy, Physiology	
		SU 28.6,	SGD: 65		1
			Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus.		
		SU 28.6	SGD: 66		1
			Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus		
		SU 28.7	SGD: 67		1

			Describe the applied anatomy and physiology of stomach	Human Anatomy	
		SU 28.8,	SGD: 68		1
		IM15.15	Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach. Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori		
		SU 28.9	SGD: 69		1
		IM15.2	Demonstrate the correct technique of examination of a patient with disorders of the stomach. Enumerate describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed		
		SU 28.10	SGD: 70		1
		IM5.16	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. Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites, spontaneous, bacterial peritonitis and hepatic encephalopathy	Human Anatomy	
		SU 28.10	SGD: 71		1

			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	Human Anatomy	
		SU 28.10	SGD: 72		1
			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	Human Anatomy	
		SU 28.11	SGD: 73		1
			Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis - prophylaxis	Human Anatomy	
		SU 28.11	SGD: 74		1
		PA24.5	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis – prophylaxis Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine		
		SU 28.12	SGD: 75		1
			Describe the applied anatomy of biliary system. Describe the clinical features,		

			investigations and principles of management of diseases of biliary system		
		SU 28.12	SGD: 76		1
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system		
		SU 28.12	SGD: 77		1
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system		
		SU 28.12	SGD: 78		1
		AN47.2,PA24.6	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system. Discuss Paediatric surgery biliary disorders. Name & identify various peritoneal folds & pouches with its explanation. Describe and etiology and pathogenesis and pathologic and distinguishing features of inflammatory bowel disease	Human Anatomy	
		SU 28.12	SGD: 79		1
		AN47.1	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system. Discuss Choledochal cyst. Describe & identify boundaries and recesses of Lesser & Greater sac	Human Anatomy	

		SU 28.13, 28.14	SGD: 80		1
		PA24.7	Describe the applied anatomy of small and large intestine Describe the etiology and pathogenesis and pathologic and distinguishing features of carcinoma of the colon	Human Anatomy, Physiology	
		SU 28.13, 28.14	SGD: 81		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 82		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 83		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 84		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 85		1

			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 86		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 87		1
		AN55.2	Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome Demonstrate the surface projections of: stomach, liver, fundus of gall bladder, spleen, duodenum, pancreas, ileocaecal junction, kidneys & root of mesentery	Human Anatomy	
		SU 28.13, 28.14	SGD: 88		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome		
		SU 28.13, 28.14	SGD: 89		1
			Describe the clinical features, investigations and principles of management of disorders of small and large intestine including		

			neonatal obstruction and Short gut syndrome		
		SU 28.15	SGD: 90		1
			Describe the clinical features, investigations of diseases of Appendix including appendicitis and its complications.		
		SU 28.15	SGD: 91		1
		AN55.1	Describe the principles of management diseases of Appendix including appendicitis and its complications. Demonstrate the surface marking of regions and planes of abdomen, superficial inguinal ring, deep inguinal ring , McBurney's point, Renal Angle & Murphy's point	Human Anatomy	
		SU 28.16	SGD: 92		1
			Describe applied anatomy including congenital anomalies of the rectum and anal canal	Human Anatomy	
		SU 28.16	SGD: 93		1
			Describe applied anatomy including congenital anomalies of the rectum and anal canal	Human Anatomy	
		SU 28.16	SGD: 94		1
			Describe applied anatomy including congenital anomalies of the rectum and anal canal		
		SU 28.17	SGD: 95		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
		SU 28.17	SGD: 96		1

			Describe the clinical features, investigations and principles of management of common anorectal diseases		
		SU 28.17	SGD: 97		1
			Describe the clinical features, investigations and principles of management of common anorectal diseases		
22.	**Urinary System**				
		SU 29.1	SGD: 98		1
			Describe the causes, investigations and principles of management of Hematuria		
		SU 29.2	SGD: 99		1
			Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system	Human Anatomy	
		SU 29.2	SGD: 100		1
			Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system	Human Anatomy	
		SU 29.3	SGD: 101		1
			Describe the Clinical features, Investigations and principles of management of urinary tract infections	Microbiology	
		SU 29.3	SGD: 102		1
		PA28.10	Describe the Clinical features, Investigations and principles of management of urinary tract infections including renal TB and abscess. Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	Microbiology, Pathology	

		SU 29.4	SGD: 103		1
			Describe the clinical features, investigations and principles of management of hydronephrosis		
		SU 29.4	SGD: 104		1
			Describe the clinical features, investigations and principles of management of hydronephrosis		
		SU 29.5	SGD: 105		1
		PA28.13	Describe the clinical features,investigations and principles of management of renal calculi. Define, classify and describe the etiology, pathogenesis, pathology, laboratory urinary findings, distinguishing features, progression and complications of renal stone disease and obstructive uropathy	Pathology	
		SU 29.5	SGD: 106		1
			Describe the clinical features,investigations and principles of management of renal calculi		
		SU 29.6	SGD: 107		1
			Describe the clinical features, investigations and principles of management of renal tumours		
		SU 29.7	SGD: 108		1
			Describe the principles of management of acute and chronic retention of urine		
		SU 29.7	SGD: 109		1
		PA28.16	Describe the principles of management of acute and chronic retention of urine.	Pathology	

			Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors		
		SU 29.8	SGD: 110		1
			Describe the clinical features, investigations and principles of management of bladder cancer		
		SU 29.8	SGD: 111		1
			Describe the clinical features, investigations and principles of management of bladder cancer		
		SU 29.9	SGD: 112		1
			Describe the clinical features, investigations and principles of management of disorders of prostate		
		SU 29.9	SGD: 113		1
			Describe the clinical features, investigations and principles of management of disorders of prostate		
		SU 29.10	SGD: 114		1
			Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent		
		SU 29.10	SGD: 115		1
			Describe clinical features, investigations and management of urethral strictures		
		SU 29.10	SGD: 116		1
		OG26.2	Describe clinical features, investigations and management of urethral strictures and urethral injuries.	Obstetrics and gynaecology	

			Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae		
23.	**Penis, Testis and scrotum**				
		SU 30.1	SGD: 117		1
		AN46.1	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	Human Anatomy	
		SU 30.1	SGD: 118		1
		PA29.1 PE21.14	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors. Recognize common surgical conditions of 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, hypospadiasis,Torsion testis, hernia Hydrocele, Vulval Synechiae	Pathology	
		SU 30.1,	SGD: 119		1

		PA29.2	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis. Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	Pathology	
		SU 30.1	SGD: 120		1
		PA29.4	Describe the clinical features, investigations and principles of management of carcinoma penis. Describe the pathogenesis, pathology, hormonal dependency, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	Pathology	
		SU 30.2	SGD: 121		1
			Describe the applied anatomy clinical features, investigations and principles of management of undescended testis.	Human Anatomy	
		SU 30.3	SGD: 122		1
			Describe the applied anatomy clinical features, investigations and principles of management of epidydimo-orchitis	Human Anatomy	
		SU 30.4	SGD: 123		1
			Describe the applied anatomy clinical features, investigations and principles of management of varicocele	Human Anatomy	
		SU 30.5	SGD: 124		1
			Describe the applied anatomy clinical features, investigations and principles of management of hydrocoele	Human Anatomy	

		SU 30.4	SGD: 125		1
			Describe classification, clinical features, investigations and principles of management of tumours of testis		

Internal Assessment

Subject: General surgery and allied including Orthopedics

Applicable for batches admitted from 2019 and onwards

Phase	IA – 1 -Exam			IA – 2 -Exam		
	Theory General Surgery Only (January)	**Practical EOP**	Total Marks	**Theory General Surgery Only (May)**	**Practical of Allied EOP**	Total Marks
Second MBBS	50	50	100	50	Orthopedics = 25 Radiodiagnosis = 25	100

Phase	IA – 3 -Exam			IA – 4 -Exam		
	Theory General Surgery + allied) (January)	**Practical EOP**	Total Marks	**Theory General Surgery + allied) (April)**	**Practical of Allied EOP**	Total Marks
III MBBS Part I	50	50	100	50	Orthopaedics =25 Anaesthesia =25	100

Phase	IA – 5 - Exam			Prelim Exam (As per university pattern)		
	Theory Gen Surgery + Allied (May)	**Practical End of** 8 Weeks posting	Total Marks	**Theory (November)**	**Practical (November)**	Total Marks
III MBBS Part II	100	100	200	100 x 2 papers = 200	200	400

(There will be FORMATIVE ASSESSMENT at the End of four weeks Clinical Posting of General Surgery NOT to be added to INTERNAL ASSESSMENT)**.**

Assessment in CBME is **ONGOING PRCESS**,

No Preparatory leave is permitted.

1. There shall be 6 internal assessment examinations in General Surgery including allied.

2. The suggested pattern of question paper for internal assessment internal examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.

3. Internal assessment marks for theory and practical will be converted to out of 50 (theory) +50 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University.

4. **Conversion Formula for calculation of marks in internal assessment examinations**

	Theory	**Practical**
Phase II	100	100
Phase III/I	100	100
Phase III/II	300	300
Total	**500**	**500**
Conversion out of	**50**	**50**
Conversion formula	**Total marks in 6 IA theory examinations /10**	**Total marks in 6 IA Practical examinations /10**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

5. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

6. Students 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 order to be eligible for appearing at the final University examination of that subject.
7. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

8. Remedial measures

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be conducted, if needed.
ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students.
iii) Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
iv) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. Extra classes for such students may be conducted for such students. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination (as per final examination)	**200**	**200**
Conversion out of	**50**	**50**
Conversion formula	**Marks in remedial theory examinations /4**	**Marks in remedial Practical examinations /4**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

B. Remedial measures for absent students:

i. If any of the students is absent for any of the 6 IA examinations due to any reasons, following measures shall be taken.
ii. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
iii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
iv. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator of 500.

Internal Assessment Practical Examinations

II MBBS

Internal Assessment - 1

General Surgery

Clinical A (30)			OSCE & Viva B (20)		
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva (20)		Grand Total A +B= 50
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
20	5	5	10	10	50

Internal Assessment - 2

Orthopaedics and Radiodiagnosis (to be conducted at the end of respective clinical postings)

Subject: General Surgery Allied Practical (IA – 2) Examination in Orthopaedics			
Case	OSCE 1	Viva (Surgical Pathology, Radiology, Instruments and Surgical Procedure, Journal / log book)	Practical Total
10	5	10	25

Subject: General Surgery Allied Practical (IA – 2) Examination in Radiodiagnosis			
X-Ray and other diagnostic modalities - Basics	Viva (Knowledge of legal aspects, radiation protection etc)	Journal / log book	Practical Total
15	5	5	25

* The marks for internal assessment – 2 shall be communicated by orthopedics / Radiology department to General Surgery department immediately after completion of examination and assessment.

III MBBS Part I

Internal Assessment - 3

General Surgery

Clinical A (30)			OSCE & Viva B (20)		
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva		Grand Total A +B= 50
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
20	5	5	10	10	50

Internal Assessment - 4

Orthopaedics and Anaesthesia

Subject: General Surgery Allied Practical (IA – 2) Examination in Orthopaedics			
Case	OSCE 1	Viva (Surgical Pathology, Radiology, Instruments and Surgical Procedure, Journal / log book)	Practical Total
10	5	10	25

Subject: General Surgery Allied Practical (IA – 2) Examination in Anesthesia			
OSCE	Drugs, Instruments	Viva	Practical Total
10	8	7	25

* The marks for internal assessment – 4 shall be communicated by orthopedics / Anaesthesia department to General Surgery department immediately after completion of examination and assessment.

III MBBS Part II

Internal Assessment - 5

General Surgery

Clinical A (60)			OSCE & Viva B (40)		
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva (40)		Grand Total A +B= 100
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
40	10	10	20	20	100

MUHS final practical examination

General Surgery

Seat No.	**Long Case General Surgery including communication skill (60)**		**Short Case 1 General Surgery (30)**		**Short Case 2 Ortho (30)**		**General Surgery (60) OSCE # & Table viva**			**Ortho (20)**	**Grand Total**
	Long case	Communication skills *	Short case	Clinical signs demo	Short case	Clinical signs demo	Instruments +Procedure+ Log book	X rays + Surgical Pathology +Journal	OSCE	OSCE (10) + Table (10)	
	50	10	20	10	20	10	20	20	20	20	200

OSCE Stations may include General examinations, Local examinations, psychomotor skills, Communication skills, AETCOM etc.

*Communication skills to be assessed by Kalamazoo Consensus, clinical signs to be assessed by either GLOBAL Rating Scale or OSCE, Psychomotor Skills to be assessed by OSCE with checklist. If the skills are small, 2 or 3 skills may be combined.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

Format / Skeleton of question paper for 1st & 2nd internal

Assessment Theory Examinations.

Instructions:

SECTION "A" MCQ

1) *Put ☒ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **one mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General surgery) (1x10=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*

2. Long Answer Question (Any 2 out of 3) (General surgery) (2 x 10 = 20)

a) b) c)

3. Short answer questions (Any 4 out of 5) (At least2 Clinical reasoning question) (General surgery) (4 x 5 = 20)

a) b) c) d) e)

Format / Skeleton of question paper for 3rd and 4th internal

Assessment Theory Examinations (III MBBS Part I)

SECTION "A" MCQ

Instructions:

5) *Put ☒ in the appropriate box below the question number once only.*
6) *Use blue ball point pen only.*
7) *Each question carries **One mark.***
8) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General surgery) (1x10=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*

2. Long Answer Question (Any 2 out of 3) (General surgery) (2 x 10 = 20)

b) b) c)

3. Short answer questions (1 from AETCOM) (General surgery) (2 x 5 = 10)

a) b)

4. Short answer questions (Any 2 out of 3) (At least 2 Clinical reasoning question) (Orthopaedics) (2 x 5 = 10)

a) b) c)

Separate answer sheet for question 4 (SAQ from orthopaedics) may be used for the ease of evaluation.

Format / Skeleton of question paper 5th internal assessment

Theory Examinations (III MBBS Part II)

SECTION "A" MCQ

Instructions:

9) Put ☒ in the appropriate box below the question number once only.
10) Use blue ball point pen only.
*11) Each question carries **One mark.***
12) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General surgery , 2 orthopaedics, 1 anesthesia, 1 dentistry and 1 radiology) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)

a) b)

3.Short Answer Questions (Any 3 out of 4) (Any one should be Clinical reasoning), 1 from AETCOM (General Surgery) (3x5=15)

a) b) c) d)

SECTION "C"

4. Short Answer Questions (1 Orthopedics, 1 Anesthesia, 1 Dentistry or Radiodiagnosis) (4 x5=20)

a) b) c) d)

5. Long Answer Question (Structured Case Based) (Orthopedics) (1 x15=15)

a)

Separate answer sheet for question 5 (LAQ from orthopaedics) may be used for the ease of evaluation.

Format / Skeleton of question paper for University Theory Examinations (III MBBS Part II) Paper – I

(Subject names to be removed)

SECTION "A" MCQ

Instructions:

13) Put ☒ in the appropriate box below the question number once only.
14) Use blue ball point pen only.
*15) Each question carries **One mark.***
16) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each) – (General surgery) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)

a) b)

3.Short Answer Questions (Any one should be Clinical reasoning, 1 from AETCOM) (General Surgery) (3x5=15)

a) b) c)

SECTION "C"

4. Long Answer Question (Structured Case Based) (General Surgery) (1 x15=15)

a)

3.Short Answer Questions (General Surgery) (Any 4 out of 5) (4 x5=20)

a) b) c) d) e)

Format / Skeleton of question paper for University Theory Examinations (III MBBS Part II) Paper II

(Subject names to be removed)

SECTION "A" MCQ

Instructions:

17) Put ☒ in the appropriate box below the question number once only.
18) Use blue ball point pen only.
*19) Each question carries **One mark.***
20) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General surgery , 2 orthopedics, 1 anesthesia, 1 dentistry and 1 radiology) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)

a) b)

3.Short Answer Questions (any 5 out of 6) (1 Gen. Surgery, 2 Radiodiagnosis, 2 Anesthesia, 1 Dentistry) (5x5=25)

a) b) c) d) e) f)

SECTION "C"

4. Long Answer Question (Structured Case Based) (Orthopedics) (1 x15=15)

a)

3.Short Answer Questions (Any 2 out of 3) (Orthopedics) (2 x5=10)

a) b) c)

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: **III-II MBBS** Subject: **_General Surgery and allied**

Paper	Section	Topics
I	A	MCQs on all topics of paper I of Surgery
	B	Metabolic response to injury, Shock, Blood and blood components, Burns, Wound healing and wound care, Surgical infections, Surgical Audit and Research, Nutrition and fluid therapy, Transplantation, Biohazard disposal, Trauma, Skin and subcutaneous tissue, Developmental anomalies of face, mouth and jaws, Oropharyngeal cancer, Disorders of salivary glands, Endocrine General Surgery: Thyroid and parathyroid, Adrenal glands, Breast, Vascular diseases, Ethics & AETCOM (module 4.3,4.5,4.6)
	C	Abdomen- including Hernia, Peritoneum, GIT tract including esophagus, stomach, small intestine, colon rectum and anal canal, Liver , Spleen, Pancreas, Biliary tract , Minimally invasive Surgery, Pediatric surgery
II	A	MCQs on all topics of the paper II including orthopaedics, anaesthesia, radiology , radiotherapy and dentistry .
	B	Cardio-thoracic - Chest - Heart and Lungs ,Urinary System- Kidney ureter and urinary bladder , Penis, Testis and scrotum, Plastic surgery, Oncology, Investigation of surgical patient, Pre, intra and post- operative management Radiology, Radiotherapy, Anesthesia and pain management , Dentistry
	C	Orthopedics ,

Name of the Institute

Department of General Surgery

Journal

Name of the Student: _____

Roll Number: _____

Batch: _____

Address: _____

_____

Mobile number: _____

Email id: _____

YOUR OPPORTUNITY

Here, for instance is a poor fellow who has just been through to the hospital, in an ambulance. A string of questions about himself and his family has been fired at him, his valuables and even his clothes, have been taken away from him and he is wheeled into the ward on stretcher miserable, scared, defenseless and in his nakedness, unable to run away. He is lifted into a bed, because conscious of the fact, that he is the center of interest in the ward, wishes that he had stayed at home among friends, and just as he is beginning to take stock, he finds a thermometer being stuck under his tongue. It is all strange and new and he wonders what is going to happen next. This thing that does happen is that a man in a long white coat sits down by his bedside and start to examine him. Do you seewhat an opportunity you have? This foundation of your whole relation with that patient is laid in those first few minutes of contact just as it happens in private practice. Here is a worried lonely, suffering man and if youbegin by approaching him with sympathy, tact, and consideration, you get his confidence and he becomes your patient intimate and visiting physicians may come and go and the hierarchy gives them a precedence; but if you make the most of your opportunities, he will regard you as his personal physician and all theres this more consultants.

Sayings of the great:

To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.

-Sir William Osler

The good physician treats the disease, the great physician treats the patient who has the disease.

-Sir William Osler

Observe, record, tabulate, communicate. Use your five senses. Learn to see, learn to hear, learn to feel, learn to smell and know that by practice alone you can become expert.

-Sir William Osler

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Clinical Posting Completion Certificate

This is to certify that the candidateMr./Ms. _____
Registration no. _____ admitted in the year _____ in the _____
_____ Medical College has satisfactorily completed / hasnotcompleted all assignments /requirements/posting mentioned in
this journal and journal for final MBBS (II/III-I/III-II) in General Surgery during the period from .....to……She / He is / is not eligible to appear for thesummative(University) assessment as on the date given below.

Signature of Head of Department

Date

GENERAL INSTRUCTIONS

1) The journal is a record of the academic / co-curricular activities of the designatedstudent,whowouldberesponsibleformaintaininghis/herjournal.

2) The student is responsible for getting the entries in the journal verified by the Faculty in chargeregularly.

3) Entries in the journal will reflect the activities undertaken in the department& have to be scrutinized by the Head of the concerneddepartment.

4) The journal is a record of various activities by the studentlike:
- Overall participation &performance
- Attendance
- Participation insessions
- Record of completion of pre-determinedactivities.
- Acquisition of selectedcompetencies

5) The journal is the record of work done by the candidate in that department / specialty and should be verified by the college before submitting the application of the students for the Universityexamination.

6)*Proposednumberofcaserecordsshouldbementionedinthejournal-:

Phase 2- 1st clinical posting (4 weeks) = 4 General surgery cases + 2 Follow-up cases + OT record sheet minimum 6 cases (2 major and 4 minor) + Asepsis, Basic bandaging skill performed independently and to get it certified

Phase3- 2ndclinicalposting (4 weeks) = 4Generalsurgerycases+ 2follow-up cases + OT record sheet minimum 6 cases (2 major and 4 minor) + Basic wound care skill performed independently and to get it certified

Casualty posting- To write reflection on 2 cases seen in casualty.

Phase 4- 3rd Clinical Posting (8 weeks) = 10 General Surgery cases + 4 follow-up cases + OT record sheet minimum 8 cases (4 major and 4 minor) + Basic suturing, Incision & drainage of superficial abscess skill to be performed independently and to get it certified.

4th Clinical Posting (4 weeks) = 4 General Surgery cases + 2 follow-up cases + OT record sheet minimum 6 cases (2 major and 4 minor) + Early management of trauma skill to be performed independently and to get it certified + Demonstrates trauma life support

POSTING CERTIFICATE

Name: - Year of Admission: -

Year of appearing for Final M.B.B.S _____

TERM	From	To	Absent days	Case Histories Written	Remark	Signature of Unit Head
Gen Surgery I (4 weeks)						
Gen Surgery II (4 weeks)						
Gen Surgery III (8 weeks)						
Gen Surgery IV (4 weeks)						
Casualty (1week)						

N.B: - 1. Students must get the signature of the Unit In charge when posting is completed.

2. This certificate must be submitted before every Internal assessment & Preliminary. examination.

3. Completed record is mandatory for appearing for the Final Examination.

Template for Clinical Cases and Operative Notes

Name of Patient Age/Sex Ward no.

MRD No Head of the Unit

Occupation

Religion

Address

Date of admission Date of Discharge

Chief complaints

HOPI/ODP

Past H/O

Personal H/O

Family H/O

Menstrual History in females

Obstetrical History in females**General examination**

Built & Nourishment
Level of consciousness
Temperature.
Pulse rate
Respiratory rate
Blood Pressure
Pallor/ cyanosis/clubbing/oedema/Lymphadenopathy/ Icterus

Local examination:

Inspection

Palpation

Percussion

Auscultation

Systemic Examination:

CVS

RS

CNS

PA

Provisional Diagnosis

Differential Diagnosis

Investigations

Hematological

Biochemical

Radiological

Xray -
USG -
CT -
MRI -

Final Diagnosis

Treatment-

Plan

Pre-operative Workup

Template forOperative Notes

Date: -Time: - Surgeon: -

Indication And operation: The working Diagnosis on which the procedure was based and the name of the operation.

Type of Anesthesia: -

Position of patient: - Describe the position and precautions taken to avoid complications.

Incision: - Name the incision, shape and length including any extensile exposure. A drawing may be useful.

Findings: Describe what was found. List structures identified and protected.

Procedure: Report what was exactly done. Describe prosthetics or special instruments used.

Closure: Washout, Hemostasis and drains, Method used for closure and Dressing

Post-operative care: Clear instructions with frequency on (a) general observations, (b) Checks on function, (c) Wound care, (d) removal of drains, (e) Start of mobilization, (f) removal of stitches, (g) discharge, (h) follow up.

Complications: List of potential complications and actions to be taken under a 'What If' list

Specimen sent for Histopathology Examination: Yes/No

Histopathology report:

Daily progress note:

Post-Op Progress Report -

(To be filled everyday in serious cases and every third day in other. Mention observations pertaining to a case, any special investigations done and daily treatment administered)

Day (Post-op)	Gen. condition (Appearance, Pulse, BP, Temp Chest)	Fluid intake	Fluid Output			Complications- If any and their treatment and investigation
			Urine	Suction	Others	

Condition of Patient on discharge: -

Advices on discharge: -

Reflection by students in max. 200 words: -
(Write your overall impression of case at the time of discharge or when you leave the case)

Feedback by Faculty –

Signature by Student and Faculty: -

Operative Notes

Date: - Time: - Surgeon: -

Indication And operation:

Type of Anesthesia: -

Position of patient: -

Incision: -

Findings:

Procedure:

Closure:

Post-operative care

Complications:

Specimen sent for Histopathology Examination: Yes/No

Histopathology report:

Progress Report -

(To be filled everyday in serious cases and every third day in other. Mention observations pertaining to a case, any special investigations done and daily treatment administered)

Day (Post-op)	Gen. condition (Appearance, Pulse, BP, Temp Chest)	Fluid intake	Fluid Output			Complications- If any and their treatment and investigation
			Urine	Suction	Others	

Condition of Patient on discharge: -

Advices on discharge: -

PHASE-II INDEX OF THE CASE HISTORIES OF GENERAL SURGERY CASES AND FOLLOW UP CASES

(minimum 4 General surgery cases + 2 Follow-up cases)

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

INDEX OF THE OPERATIVE PROCEDURES PHASE II

[OT record sheet minimum 6 cases (2 major and 4 minor) +Asepsis, Basic bandaging skill performed independently.]

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

PHASE-III/I INDEX OF THE CASE HISTORIES OF GENERAL SURGERY CASES AND FOLLOW UP CASES

(minimum 4Generalsurgerycases+ 2follow-up cases)

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

INDEX OF THE OPERATIVE PROCEDURES PHASE III/I

[OT record sheet minimum 6 cases (2 major and 4 minor) + Basic wound care skill performed independently]

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

PHASE-III/II INDEX OF THE CASE HISTORIES OF GENERAL SURGERY CASES AND FOLLOW UP CASES

[3rd Clinical Posting minimum 10 General Surgery cases + 4 follow-up cases & 4th Clinical Posting minimum 4 General Surgery cases + 2 follow-up cases]

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						

15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						
24.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

Case 9:

Case 10:

Case 11:

Case 12:

Case 13:

Case 14:

Case 15:

Case 16:

Case 17:

Case 18:

Case 19:

Case 20:

Case 21:

Case 22:

Case 23:

Case 24:

INDEX OF THE OPERATIVE PROCEDURES PHASE III/II

[OT record sheet minimum 14 cases (6 major and 8 minor) + Basic suturing, Incision & drainage of superficial abscess, early management of trauma skills & demonstrates trauma life support]

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

13.						
14.						
15.						
16.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

Case 7:

Case 8:

Case 9:

Case 10:

Case 11:

Case 12:

Case 13:

Case 14:

Case 15:

Case 16:

ANNEXURE 1

Paper wise distribution of topics for Prelim & MUHS Annual Examination
Year: **III-II MBBS** Subject: **_General Surgery and allied**

Paper	Section	Topics
I	A	MCQs on all topics of paper I of Surgery
	B	Metabolic response to injury, Shock, Blood and blood components, Burns, Wound healing and wound care, Surgical infections, Surgical Audit and Research, Nutrition and fluid therapy, Transplantation, Biohazard disposal, Trauma,Skin and subcutaneous tissue, Developmental anomalies of face, mouth and jaws, Oropharyngeal cancer,Disorders of salivary glands, Endocrine General Surgery: Thyroid and parathyroid, Adrenal glands, Breast, Vascular diseases, Ethics &AETCOM(module 4.3,4.5,4.6)
	C	Abdomen- including Hernia, Peritoneum, GIT tract including esophagus, stomach, small intestine, colon rectum and anal canal, Liver , Spleen, Pancreas, Biliary tract ,Minimally invasive Surgery, Pediatric surgery
II	A	MCQs on all topics of the paper II including orthopaedics, anaesthesia, radiology and dentistry .
	B	Cardio-thoracic - Chest - Heart and Lungs,Urinary System- Kidney ureter and urinary bladder , Penis, Testis and scrotum, Plastic surgery, Oncology,Investigation of surgical patient, Pre, intra and post- operative pain management management and Anesthesia, Radiology,
	C	Orthopedics ,

Annexure 2

Recommended books

Year: II/ III-I/ III-II MBBS
Subject: General Surgery

Sr.no.	Author	Title of book/ Material	Publisher
		TEXTBOOK	
1.	Norman S Williams P. Ronan O'Connell Andrew McCasksie	Bailey & Love's Short practice of Surgery 27th Edition 2018	CRC Press
2	Sriram Bhat	SRB's Manual of Surgery 6th Edition 2017	Jaypee Publishers
3	K Rajgopal Shenoy Anitha Shenoy	Manipal Manual of Surgery 5th Edition 2020	CBS Publishers
4	S Das	A Concise Textbook of Surgery 6th Edition 2018	DAS Publications
		CLINICAL SURGERY	
1.	S Das	A Manual on Clinical Surgery 9th Edition 2019	DAS Publications
2.	Sriram Bhat	SRB's Bedside Clinics in Surgery 1st Edition 2009	Jaypee Publishers
3.	Makhan Lal Saha	Bedside Clinics in Surgery 2nd Edition 2013	Jaypee Publishers
4.	J Kyle, JAK Smith, D Johnson	Pye's Surgical Handicraft 22nd Edition 1999	K. M. Vargheese Company (Indian edition)
5.	Margaret Farquharson, James Hollingshead, Brendan Moran	Farquharson's Textbook of Operative General Surgery 10th Edition 2015	CRC Press
6.	John S P Lumley, Anil K D'Cruz, Carol E Scott-Conner	Hamilton Bailey's Demonstration of Physical signs in Clinical Surgery 19th Edition 2014	CRC Press

		REFERENCES	
1.	Courteny Townsend, Daniel Beauchamp, B Mark Evers, Kenneth L Mattox	Sabiston Textbook of Surgery 1st South Asia Edition 2017	Elseiver
2.	F Charles Brunicardi, Mary L Brandt, Dana Anderson, Timothy Billar, David Dunn, John Hunter, Jeffery Matthews, Raphael Polllock	Schwartz's Principles of Surgery 10th Edition 2019	McGraw Hill
		APPLIED ANATOMY	
1.	Lee McGregor GAG Decker, DJ du Plessis	Lee McGregor's Synopsis of Surgical Anatomy 12th Edition 2018	K M Varghese Company
2.	John E Skandalkis, Gene Colborn, Thomas Weidman	Skandalkis Surgical Anatomy 2004	Broken hill Publishers
3.	Chummi S. Sinnatamby	Last's Anatomy Regional and Applied 12th Edition 2011	Churchill Livingstone
		PATHOLOGY	
1.	Kumar, Abbas, Aster	Robbin's Pathologic Basis of Disease 10th Edition, 2020	Elsiever
2.	Harsh Mohan	Textbook Of Pathology 8th Edition, 2018	Jaypee Publishers

		PHYSIOLOGY	
1.	Joh E Hall	Guyton and Hall Textbook of Medical Physiology 14th Edition 2020	Elsevier
2.	Kim E Barrett, Susan M. Barman, Heddwen L. Brooks, Jason Yuan	Ganong's Review of Medical Physiology 24thEdition 2019	Lange

****For Syllabus refer to MUHS Website**

Name of the Institute

LOG BOOK

DEPARTMENT OF GENERAL SURGERY

Sayings of the great:

To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.

-Sir William Osler

The good physician treats the disease, the great physician treats the patient who has the disease.

-Sir William Osler

Observe, record, tabulate, communicate. Use your five senses. Learn to see, learn to hear, learn to feel, learn to smell and know that by practice alone you can become expert.

-Sir William Osler

CONTENTS

LOGBOOK CERTIFICATE

This is to certify that this logbook is the bonafide record of Mr. / Ms. ..... Roll No……..Admission Year ……., of the Department of General Surgery at …….Medical College.

The logbook is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

_____

Head of Department of General Surgery

Signature with Date

BIODATA OF THE CANDIDATE

PHOTO

Name of the student:

Name of the course: MBBS

Date of birth:

Father's / Guardian's name:

Mother's name:

Blood group:

Permanent Address: Temporary Address:

…… ……

…… ……..

Student's contact no:

Father's/ Guardian's contact no:

Student's Email id:

Father's/ Guardian's Email id:

Candidates Signature: …….. Date: .....

GENERAL INSTRUCTIONS

1) The logbook is a record of the academic / non-academic activities of the student. Each Medical student is responsible for maintaining their logbook.

2) This logbook is prepared as per the guidelines of NMC for implementation of Competency Based Curriculum for 4TH Professional MBBS students in the subject of General Surgery.

3) Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly signed by the supervising faculty.

4) Entries in the logbook will be in accordance with activities done in the department & have to be scrutinized by the Head of the department.

5) The logbook assessment will be based on multiple factors like
   - Overall presentation
   - Active participation in the sessions
   - Quality of write up of reflections.
   - Timely completions
   - Attendance

6) The logbook shall be kept as record work of the candidate for the department & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A **clear record** of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least **2 years** after passing of the examination. Institutions may be asked to provide these details by the University as and when required.

The contents in the logbook are suggested guidelines. The institutions can make **necessary changes as per the needs.**

ATTENDANCE

Every candidate should have attendance not less than 75% of the total classes conducted in theory, practical and clinical jointly in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examinations.

For appearing at the University Examination, student should have minimum 75% attendance in each subject.

A candidate lacking in the prescribed attendance in any subject(s) should not be permitted to appear for the examination in that subject(s)

Students cannot appear in part or separately in individual subjects during the first appearance at the Professional examination.

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

Records of Internal Assessment Examinations

Sr. No.	Exam No.	Date	Theory	Date	Practical including Viva	Feedback provided	Signature of student	Signature of teacher
1	*Phase II		/100		/100			
2	*Phase III/I		/100		/100			
3	Phase III/II		/300		/300			
4	Total		/500		/500			
5	Conversion		/100		/100			
6	Final Internal Assessment Marks (to be submitted to University)		/100		/100			

[Orthopedics 25 marks, Anesthesia 10marks, Radiodiagnosis & Radiotherapy 10 marks, Dentistry 5 marks to be submitted to department of general surgery during respective phase of teaching.]

.....

Signature of Head of the Department

Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes, extracurricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase III/I	Phase III/II	Signature of Teacher

Reflection (minimum 200 words) – 1 **Date :**

TOPIC:

Reflection (minimum 200 words) – 2

Date :

TOPIC:

LOGBOOK CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Competency # addressed	**Name of Activity**
SU3.2	Observe blood transfusions.
SU5.2	Elicit, document and present a history in a patient presenting with wounds.
SU18.3	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan
SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discus the differential diagnosis and their management
SU *24.3	Describe the principles of investigation and management of pancreatic disorders including pancreatitis and endocrine tumors
SU 25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent
SU 27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease
SU 27.6 *	Describe pathophysiology, clinical features, investigations and management of DVT and varicose veins.

SU27.8	Demonstrate the correct examination of the lymphatic system
SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.
SU 28.8 & SU28.9	Demonstrate the correct technique of examination of a patwith disorders of the stomach
SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan
SU 29.9*	Describe the clinical features, investigations and management of disorders of prostate
SU 30.1*	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis and carcinoma penis.
SU 30.2*	Describe the applied anatomy, clinical features, investigations and principles of management of undescended testis
SU 30.3*	Describe the applied anatomy, clinical features, investigations and principles of management of epididymo- orchitis
SU 30.4*	Describe the applied anatomy, clinical features, investigations and principles of management of varicocele
SU 30.5*	Describe the applied anatomy, clinical features, investigations and principles of management of hydrocele
SU 30.6*	Describe the applied anatomy, clinical features, investigations and principles of management of tumours of testis

LOGBOOK PSYCHOMOTOR / PERFORMANCE SKILLS:

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

I – independent certification

D- demonstration

LIST OF COMPETENCIES

Competency # addressed	**Name of Activity**
SU10.4**(I)**	Perform basic surgical skill such as First Aid including suturing and minor surgical procedures in simulated environment
(I)	Bandaging (Head bandaging, Ear bandaging, Eye Bandaging, Figure of 8 Bandaging around joints of upper limb and lower limb, Scrotal support, Crepe bandage application over upper limb and lower limb
(I)	Incision and Drainage
(I)	Wound Care (Clean surgical wound care, Wounds after trauma, Diabetic wound care)
SU11.3**(I)**	Demonstrate maintenance of an airway in a mannequin or equivalent
SU14.4**(I)**	Demonstrate the techniques of asepsis and suturing in simulated environment
SU17.2**(D)**	Demonstrate the steps in Basic Life support, Transport of injured patient in a simulated environment
SU17.10**(D)**	Demonstrate Airway maintenance. Recognize and manage tension pneumothorax, hemothorax and flail chest in simulated environment
S29.11	Demonstrate a digital rectal examination of the prostate in a mannequin or equivalent

LOGBOOK FOR AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

LIST OF COMPETENCIES FOR AETCOM

Competency addressed	Name of Activity
SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care.
SU3.3	Counsel patients and family/ friends for blood transfusion and blood donation.
SU4.4	Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.
SU9.2	Biological basis for early detection of cancer and multidisciplinary approach in management of cancer
SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately
SU13.4	Counsel patients and relatives on organ donation in a simulated environment
SU25.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast

PHASE II-clinical (minimum four assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE II-Psychomotor

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
6.										
7.										
8.										
9.										
10.										
11.										
12.										

PHASE II- AetCom (Minimum four assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I -clinical (Minimum four assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I-Psychomotor skill

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
6.										
7.										
8.										
9.										
10.										
11.										
12.										

PHASE III Part I - AetCom (Minimum four assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part II -clinical (minimum four assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part II -Psychomotor skill

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
6.										
7.										
8.										
9.										
10.										
11.										
12.										

PHASE III Part II - AetCom (Minimum five assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										
7.										

REFLECTION ON AETCOM MODULE For PHASE III/IIs

Module 4.3 - Case studies in medico-legal and ethical situations

Competency addressed	Level
Identify and discuss medico-legal, socio-economic and ethical issues as it pertains to organ donation	KH

Reflection (minimum 200 words) -1 Date:

Signature of Teacher-in-charge

REFLECTION ON AETCOM MODULE

Module 4.6 - Case studies in ethics and the doctor-industry relationship

Competency addressed	Level
Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts	SH

Reflection (minimum 200 words)-2 Date:

Signature of Teacher-in-charge

ANNEXURE 1:

RECORDING FORM FOR MINI – CEX

EVALUATOR : DATE :

STUDENT :

YEAR :

PATIENT DIAGNOSIS :

SETTINGS :

AMBULATORY	NEW	COMPLEXITY : LOW
IN PATIENT	FOLLOW UP	MODERATE
ED		HIGH
OTHER :		

PATIENT AGE PATIENT SEX

FOCUS : DATA GATHERING / DIAGNOSIS / THERAPY / COUNSELLING

1. **MEDICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

2. **PHYSICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

3. **HUMANISTIC QUALITIES** / PROFFESIONALISM (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

4. **CLINICAL JUDGEMENT** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

5. **COUNSELLING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

6. **ORGANIZATION / EFFICIENCY** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

7. **OVERALL CLINICAL COMPETENCE** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

MINI CEX TIME : OBSERVING : _____ MINS

PROVIDING FEEDBACK _____ MINS

UNSATISFACTORY 1,2,3

SATISFACTORY 4, 5, 6

SUPERIOR 7, 8, 9

EVALUATOR SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

RESIDENT SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

COMMENTS :

STUDENT SIGNATURE EVALUATOR SIGNATURE

ANNEXURE 2:

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Communication skills rating scale adapted from Kalamazoo consensus statement.

Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

Course Content

Subject: Obstetrics and Gynecology
Lectures

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 3; page nos. 102-129)

Integration: Upto 20% of the topics are to be taken in integration with other subjects as per directives.

Second MBBS phase II (from October 2020)
Total Teaching hours :
A. Lectures: 25 hours

Serial number	Competency Nos.	Integration	Lecture topics & Subtopics	Hours
1.	OG **2.1**	AN 48.8, 49.1, 49.2, FM 3.18	Anatomy of the female reproductive tract,	1
2.	OG 3.1.		Physiology of menstruation	1
3.	OG 3.1	AN 77.3,77.4	Physiology of gametogenesis, Ovulation, conception, implantation , & reproductive endocrinology	1
4.	OG 4.1	AN 80.3 80.5, 80.6	Early development of embryo and fetus, development of Placenta, amniotic fluid, cord	1
5.	OG 2.1	AN 52. 8, 79.4	Embryology and developmental defects of female genital tract	1
6.	OG 6.1	FM3.19, PY 9.10	Diagnosis of pregnancy	1
7.	OG 7.1	PY 9.8	Physiological changes in pregnancy	1
8.	OG 1.1, 1,2	CM10.1, 10.2	Maternal and perinatal mortality	1
9.	OG- 5.1, 5.2 An		Preconceptional counseling	1

Serial number	Competency Nos.	Integration	Lecture topics & Subtopics	Hours
	75.5			
10.	OG 8.1, 8.2(K), 8.3(K)		Antenatal Care, birth planning, and Obstetric examination	1
11.	OG 8.4, 16.3	AN 75.5	Antenatal screening, genetic counselling and antenatal monitoring of fetal well being	
12.	OG 8.7		Vaccines and medications in pregnancy, Teratology	1
13.	OG 14.1	AN 53.2, 53.3	Fetal skull, pelvis	1
14.	OG 13.1		Labor physiology	1
15.	OG 13.1		Labor mechanism	1
16.	OG 13.1		Management of labor 1st stage with, partogram, intrapartum monitoring of fetal well being and labor analgesia	1
17.	OG 13.1		Management of labor 2nd and third stage	1
18.	OG 19.1		Physiological changes in puerperium, Management of puerperium	1
19.	OG 17.1, 17.2	CM10.3	lactation physiology and management	1
20.	OG 9.5		Hyperemesis , vomiting in pregnancy management	1
21.	1.3, 9.1	AN 78.5	Hemorrhage in early pregnancy (abortions)	1
22.	9.3	AN 78.3	Hemorrhage in early pregnancy (ectopic pregnancy	1
23.	9.4		Hemorrhage in early pregnancy (Molar pregnancy)	1
24.			Recurrent pregnancy loss	1
25.	11.1	AN 80.4	Multifetal pregnancy	1

Third MBBS phase III

Total Teaching hours :

A. Lectures: **25 hours**

Serial number	Competency Nos.	Integration	Topics & Subtopics	Hours
1.	OG 12.1		Hypertensive disorders in pregnancy	1
2.	OG 12.1		Hypertensive disorders in pregnancy	1
3.	OG 13.2		Preterm and PROM	1
4.	OG 13.2		Prolonged pregnancy	1
5.	OG 16.3		Intrauterine growth restriction	1
6.			Disorders of amniotic fluid	1
7.			Abnormalities of placenta . cord	1
8.			Intrauterine fetal death	1
9.	OG 10.1		Antepartum hemorrhage 1 Placenta previa	1
10.	OG 10.1		Antepartum hemorrhage 2 Abruption+ vasa previa	1
11.	**OG 12.8**	PA 22.2	Rh negative pregnancy	1
12.	OG 12.2		Anemia (Iron deficiency + Megaloblastic)	1
13.	OG 12.2		Anemia (Others)	1
14.	OG 12.4		Heart disease in pregnancy	1
15.	**OG 12.3**		Diabetes in pregnancy	1
16.	OG 12.5		Infections in pregnancy UTI,(Incl Malaria etc)	1
17.	OG 12.6		Hepatic disorders in pregnancy	1
18.			Thyroid disorders in pregnancy	1
19.			Respiratory disorders in pregnancy including TB, COVID, Flu	1
20.			Viral infections in pregnancy (Viral)	1
21.	OG 12.7 ,27.3		HIV in Obstetrics and Gynecology	1
22.			Gynecological disorders in pregnancy	1
23.			Surgical disorders in pregnancy	1

Serial number	Competency Nos.	Integration	Topics & Subtopics	Hours
24.		CM 10.4	National Health programs-I safemotherhood, reproductive and child health	1
25.			National Health programs-II Respectful maternity care, Laqshya guidelines	1

Third MBBS phase IV

Total Teaching hours :

A. Lectures: **70 hours**

Serial number	Competency Nos.	Integration	Topics & Subtopics	Hours
1.	OG 14.4	FM 3.21	Malpositions: Occipito posterior presentation + DTA	1
2.	OG 14.4		Face, Brow Mechanism of labor in each	1
3.	OG 14.4		Malpresentations Breech	1
4.	OG 14.4		Unstable lie (Transverse/ oblique)	1
5.		AN 79.5,	Congenital anomalies of fetus	1
6.			Shoulder dystocia	1
7.	OG 14.4		Abnormal labor,classification, diagnosis and management.	1
8.	OG 14.1		Types of pelvis, Contracted pelvis, cephalopelvic disproportion	1
9.	OG 14.2		Obstructed labor, Rupture uterus causes, diagnosis and management .	1
10.	OG 15.1		Instrumental vaginal deliveries+ Ref to destructive operations	1
11.	OG 15.1		Cesarean section	1
12.			Pregnancy with previous cesarean section .	1
13.	OG 16.1		Third stage complications PPH	1
14.	OG 16,2		Third stage complications- inversion of uterus, Injuries to birth canal	1

15.	OG 19.1,17.3		Disorders of puerperium	1
16.	OG 13.1		Induction of labor,	1
17.	OG 13.1		Obstetric analgesia	1
18.	23.1		Physiology of Puberty and Abnormal puberty	1
19.	23.2, 23.3		Delayed puberty, precocious puberty	1
20.			Disorders of sexual development	1
21.	OG 23.1		Menstruation and common complaints (Dymenorrhea+ PMDD)	1
22.	OG 24.1, PA 30.9	PA 30.9	Abnormal uterine Bleeding Endometrial polyps , hyperplasia	1
23.	25.1		Amenorhea: Primary/ secondary	1
24.	OG 32.1	PY 9.11	Menopause & management , premature ovarian failure	1
25.	OG 22.1, 22.2	PA 30.6	Leucorrhea , cervical erosion, Cervicitis, vaginitis syndromic management	1
26.	OG 27.1,27.4		PID, Chronic pelvic pain ,	1
27.	27.2		Genital tuberculosis	1
28.	OG 30.1, 30.2		PCOS	1
29.	OG 28.1, 28.2	PY 9.12	Infertilty-Cervical & Uterine & Tubal Factors	1
30.	OG 28.3	PH 1.40	Infertilty- Ovulation Factors, Endocrine Factors, Galactorrhoea, Hirsuitism	1
31.	OG 28.4		ART in infertility	1
32.	OG 28.1		Infertility- Male & Unexplained	1
33.	OG 29.1		Benign tumors: Leiomyoma and polyps	1
34.	Pa 30.7. 30.8, OG 26.1	PA 30.7, 30.8	Endometriosis and adenomyosis	1
35.	OG 31.1		Displacements of uterus	1
36.			Urinary incontinence	1
37.	OG 26.2		Genitourinary fistulae	1

38.	26.2		Old healed perineal tear and rectovaginal fistula	1
39.	OG 33.2		Premalignant lesions of the female genital tract , Cervical intraepithelial neoplasia	1
40.	OG 33.3, 33.4		Screening and early detection of women's cancers including breast cancer	1
41.	OG 33.1	PA 30.1	Invasive cervical cancer	1
42.	OG 32.2		Approach to a patient of Post menopausal bleeding,	1
43.	OG 34.1	PA 30.2, PA 30.3	Uterine cancers	1
44.			Benign and malignant Lesions of vulva and vagina	1
45.	OG 34.3	PA 30.5	Gestational trophoblastic neoplasia	1
46.	OG 34,2		Benign ovarian tumors+ including non neoplastic enlargements of ovary	1
47.	OG 34.2	PA 30.4	Malignant ovarian tumors	1
48.		BI 10.2	Principles of Chemotherapy and Radiotherapy in Gynecology	1
49.	21.1		Contraception: male and female barrier methods	1
50.	21.1	PH 1.39	Hormonal contraception	1
51.	21.2		IUDs, PPIUCD program	1
52.	21.1		Female sterilization, postpartum sterlization	1
53.	21.1		Reversal of sterilization male and female	1
54.	21.1		Contracepton in special populations	1
55.	OG 20.1		MTP:Act, first trimester procedures	1
56.	OG 20.2		MTP second trimester procedures	1
57.	18.1, 18.3		Neonatal Asphyxia , , convulsions in the newborn	1
58.			Neonatal resuscitation	1
59.			Neonatal Jaundice + Birth injuries	1
60.	OG 8.8		Imaging in Obstetrics	1
61.			Imaging in gynecology	1
62.		PH 1.41	Pharmacotherapeutics in obstetrics	1
63.			Principles of gyn-surgical care- (pre op)	1

64.			Principles of gyn surgical care-(post op)	1
65.	OG 10.2		Critical care in Obstetrics , appropriate use of blood and blood products, their complication and management	1
66.	20.3	FM 3.13-17	PC PNDT act	1
67.		FM 3.13-17	Examination of the sexual assault survivor	1
68.			Domestic Violence act and role of gynecologist Gender	1
69.			Medicolegal issues related to Obstetrics and gynecology	1
70.			Adoption acts	1

Course Content

Subject: Obstetrics and gynecology Gyn skills

Clinical Postings: phase II 4 weeks – (Mon-Fri)
phase III-1 4 weeks – (Mon-sat)
phase III-2 12 weeks – (Mon-sat)

Competency Nos.	skill	topic	Suggested Teaching learning method	Hours	Student should complete this skill by end of mentioned phase
Phase II					
OG35.1	Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (per rectal and per-vaginal) K/S SH	History taking in obstetrics	Bed side clinics	15 hours(1 week)	II
OG35.5	Determine gestational age, EDD and obstetric formula K/S SH				
OG35.7	Obtain informed consent for any examination / procedure S SH	Informed consent for examination			
OG35.2.	Arrive at a logical provisional diagnosis after examination K/S SH	obstetric examination and provisional diagnosis	Mannequin/demonstration on patient		
OG36.2	Organise antenatal clinics K/S KH	Antenatal clinic, (set up of OPD) Routine antenatal invesigations, Antenatal care	OPD tour, Demonstration of the set up and how OPD functioning is carried out	3 hrs	II

OG8.6	Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy K/S SH	Nutritional counselling in pregnancy	Case based learning.	3 hrs	II
OG 35.12	History taking in gynecology, demonstrate P/S, P/V examination		Bed side clinic /OPD demonstration, skill lab for PS PV practice	3 hrs	II
OG8.5	Describe and demonstrate pelvic assessment in a model K/S SH	Maternal pelvis Pelvic assessment Fetal skull	Model,	3 hrs	II
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well-being K/S SH	Antepartum monitoring of fetal well being- screening, USG doppler, NST, BPP,	Demonstration	3 hrs	II
OG13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin	Mechanism of labor Management of Labor stage 1 Intrapartum monitoring of fetal well being- Partogram, CTG	Skill lab Models and mannequins Labor room demonstrations	15 hrs	II
OG35.13	Demonstrate the correct technique to perform artificial rupture of membranes in a simulated / supervised environment S SH	ARM			
OG35.14	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment S SH	Management of labor stage 2- Episiotomy			

OG35.16	Diagnose and provide emergency management postpartum hemorrhage in a simulated / guided environment K/S SH	Manage ment of labor stage 3 Emergency management of PPH oxytocics			
	Conduction of 2 exams and feedback			15 hours	
			Phase 2 clinical posting Total	**60 hours(4 weeks mon -fri)**	
Phase III-1					
OG37.6	Observe and assist in the performance of outlet forceps application of vacuum and breech delivery K/S/A/C SH	Forceps and vaccum, breech delivery	Mannequins and models skill lab	3 hrs 3 hrs	III-1
OG36.2	Organise postnatal and well-baby clinics K/S KH	Post natal clinic and well baby clinic. PNC case Normal and abnormal Puerperium,	OPD visit Bed side clinics, case based learning	3 hrs 3 hrs 3 hrs	III-1
OG17.2	Counsel in a simulated environment, care of the breast, importance and the technique of breast feeding S/A/C SH	Breast care, technique of breast feeding	Bed side clinic	3 hrs	III-1
OG35.17	Demonstrate the correct technique of urinary catheterisation in a simulated/ supervised environment S SH	Female urinary catheterizaion	Mannequin/ demonstration, Video demonstration	1 hr	III-1
OG37.4	Observe and assist in the performance of Dilatation & Curettage (D&C) K/S/A/C SH	Dialation and curettage	OT procedure, video	2 hrs	III-1

			demonstration		
OG37.5	Observe and assist in the performance of Endometrial aspiration - endocervical curettage (EA-ECC) K/S/A/C SH	Endometrial and endocervical curettage	OT procedure, video demonstration	3 hrs	III-1
OG36.1	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	Cost effective approach	Case based learning	3 hrs	III-1
OG35.4	Demonstrate interpersonal and communication skills befitting a physician in order to discuss illness and its outcome with patient and family A/C SH	Doctor patient communication	Role play, OPD visit	3 hrs	III-1
OG35.6	Demonstrate ethical behavior in all aspects of medical practice. A/C SH	Ethics in medical practise	Case based learning	3 hrs	III-1
OG35.10	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details. S SH	Referral note	Case based learning	3 hrs	III-1
OG38.4	Assess the need for and issue proper medical certificates to patients for various purposes K/S/A/C KH	Issue Medical certificates	Case based learning	3 hrs	III-1
		Cover 6 cases mentioned in III-2		18 hrs	
	Conduction of 2 exams and feedback			15 hours	
			Phase III-1 clinical posting Total	**72 hours(4 weeks -mon - sat)**	
Phase III-2					
	Revision of all topics in phase II			**45 hrs**	

	Revision of topic 14, 15 from phase III-1			**15 hrs**	
	Obtain history and on basis of examination findings(internal examination excluded) arrive at a logical provisional diagnosis for type of abortion	Abortions	**Case based learning**	**3 hrs**	
OG35.8	Write a complete case record with all necessary details S SH	Case record-…..10 cases over 3 phases, anemia. Drugs used in anemia Preeclampsia, Antihypertensives in prgnancy Eclampsia ,anticonvulsants in pregnancy IUGR,fetal well being tests Multifetal gestation, Breech, prev caesarean, preterm, tocolytics Prolonged labor induction of labor and drugs used in induction	Bed side clinics/ case based learning	3 hrs 3 hrs 3 hrs 3 hrs 3 hrs 3 hrs 3 hrs 3 hrs 6 hrs	III-1, III-2
OG35.16	Diagnose and provide emergency management of antepartum in a simulated / guided environment K/S	placenta previa case	Bed side clinics/ case	6 hrs	III-1/2

	SH	abruptio placentae case Emergency management of APH with placenta previa case	based learning		
OG35.11	Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis and counsel patients S SH	HIV in pregnancy Universal precaution, PPTCT, counselling in HIV	Case based learning Demonstration PPTCT centre visit	3 hrs 3hrs	III-2
OG35.3	Recognize situations, which call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment. K/S SH	Identifying a high risk pregnancy	Case based learning	3 hrs	III-2
OG13.5	Observe and assist the conduct of a normal vaginal delivery S P	Normal vaginal delivery-2 cases in log book	Labor room	6 hrs	III-2
OG37.1	Observe and assist in the performance of a Caesarean section K/S/A/C SH	Caesarean section	OT procedure/ video demonstration	3 hrs	III-2
OG35.9	Write a proper discharge summary with all relevant information S SH	Discharge summary..VD, CS, gyne case	Case based learning	3 hrs	III-2
OG35.12	Obtain a PAP smear in a stimulated environment S SH	PAP smear	Cancer detection OPD/ video demonstration	3 hrs	III-2
OG36.3	Demonstrate the correct technique of punch biopsy of uterus in a simulated/ supervised environment S SH	Cervical biopsy			III-2
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment K/S SH	Cervical cancer screening, VIA, VILI, Colposcopy			III-2
OG35.15	Demonstrate the correct technique to insert and remove	Contraception	Mannequin/	6 hrs	III-2

	an IUD in a simulated/ supervised environment S SH	methods, Intrauterine contraceptive device insertion and removal	video demonstration/ demonstration small group		
OG13.4	counsel on methods of safe abortion.	Counselling for safe abortion		3 hrs	III-2
OG20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy S/A/C SH	Informed consent for MTP, MTP act, forms to be filled	Demonstration OT procedure	3 hrs	III-2
OG37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion K/S/A/C SH	Suction and evacuation(spontaneous abortion , first trimester MTP)			III-2
OG38.3	Lap sterilization K/S/A/C KH	Lap sterilization- 1 case of sterilization	OT procedure/ video demonstration	3 hrs	III-2
OG19.2	Counsel in a simulated environment, contraception and puerperal sterilisation S/A/C SH	Counselling for contraception sterilization. Puerperal sterilization(case based lerning)	Case based learning Family welfare clinic	3 hrs	III-2
OG36.2	Organise family welfare clinics K/S KH	Family welfare clinic			III-2
OG 35.12	History taking in gynecology, Reaching a provisional diagnosis	Gynecology case Vaginitis Fibroid uterus Genital prolapse Infertility	Case based learning	 3 hrs 3 hrs 3 hrs 3 hrs	II

		Adenexal mass Abnormal uterine bleeding(O) Post menopausal bleeding Cancer cervix		3 hrs 3 hrs 3 hrs 3 hrs	
OG37.2	Observe and assist in the performance of Laparotomy K/S/A/C SH	Exploratory laparotomy	OT procedure/ video demonstration	3 hrs	III-2
OG37.3	Observe and assist in the performance of Hysterectomy – abdominal/vaginal K/S/A/C SH	Vaginal hysterectomy, abdominal hysterectomy	OT procedure/ video demonstration	6 hrs	III-2
OG38.1	Laparoscopy K/S/A/C KH	laparoscopy	OT procedure/ video demonstration	3 hrs	III-2
OG38.2	Hysteroscopy K/S/A/C KH	hysteroscopy	OT procedure/ video demonstration	3 hrs	III-2
		Revision drugs in obstetrics and gynecology		3 hrs	

		Revision instruments		3 hrs	
		Revision contraception		3 hrs	
		specimen		3hrs	
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment S SH	Neonatal resuscitation			paeds
		Conduction of exams and feedback And miscellaneous		**24 hrs**	
		Phase III-2 clinical posting Total		**216 hrs(12 weeks mon-sat)**	

Course Content

Subject: Obstetrics and Gynecology

(Based on Indian Gazette on CBME and Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 3; page nos. 102-129)

Self directed learning(SDL)

Medical council directs to dedicate 5 hrs in third phase part 1 and 15 hrs in third phase part2 for self directed learning in OBGY.

University leaves it to the discretion of institute to plan the SDL using various methods in which students should be briefed about topic, guided towards learning resources, curiosity, innovation, motivation, competitiveness should be inculcated.
Life long learning capacity should be built.

The record of these SDL sessions should be included in Logbook as reflections of the session .

Small group teaching/tutorials

Medical council directs to dedicate 35 hrs in third phase part 1 and 125 hrs in third phase part2 for small group teaching/tutorials/ integrated teaching/ seminars in OBGY.

Suggested topics:
Dummy Pelvis 4
Obst specimens 4
Gynec specimens 4
X-rays & HSG 2
NST/ CTG 2
Obst Instruments 3
Gynec Instruments 4
Forceps 1
Vacuum 1
Partograph 2
NST, CTG 2
Drugs in obstetrics 3
Gynec drug 2
Contraception 4
Sterilization 2
Minor procedures 2

Apart from this SGT, can comprise of MCQ solving, group seminars, poster making, skit making,

Guidelines for Electives:

Medical council directs to dedicate 2 months of elective postingbetween third phase part 1 and part2

1. Each college can put up department wise lists of electives depending on facilities n resources available.
2. Electives modules should be designed well in advance with mention on specific learning objectives, daily work record, report amd assessment of the same.
3. Allotment of electives will be merit based on combined marks of previous 3 yrs.
4. Medical college can have MOU with other hospitals or centers for elective courses to student.
5. Student can opt for doing elective in any other hospital, city or abroad, provided facility of subject of interest is not available in his/her college, with prior permission of institute.
6. If opting for elective abroad then one month can be contact program and another month will be online program as for one month of elective student is supposed to attend clinical posting also.
7. Only 10% students will be allowed per subject for outside elective.
8. Student will have to apply to centre where he desires to do elective well in advance, application must go through concerned dept n through institute. The centre where student is doing elective must be government or semi government or teaching institute or center affiliated by university or National association of that subject of country.
9. Responsibility of applying, getting admission, expenses incurred for tuition fees n travel n stay will have to take care of by student.
10. At the end of electives Student should produce certificate of completing elective term from head of the institution or centre.

AETCOM

Medical council directs to dedicate 28 hrs + 16 hrs SDL in third phase part 2 for AETCOM. Out of these each subject gets 7 hours + 4 hrs SDL

As decided by university OBGY department will cover module 4.2 and 4.7 out of 9 modules mentioned in AETCOM booklet for phase III part 2.

Internal Assessment

Obst. & Gynaec.

Applicable w.e.f August 2019 onwards examination for batches admitted from June 2019 onwards

Phase	IA – 1 -Exam			IA – 2 -Exam		
	Theory (January)	Practical EOP	Total Marks	Theory (May)	Practical	Total Marks
Second MBBS	50	50	100	50	50	100

Phase	IA – 3 Exam			IA – 4 - Exam		
	Theory (January)	Practical EOP	Total Marks	Theory (April)	Practical	Total Marks
Third MBBS Part I	50	50	100	50	50	100

Phase	IA – 5 - Exam			Prelim Examination		
	Theory (May)	Practical EOP (after 8 weeks posting)	Total Marks	Theory (November)	Practical	Total Marks
Third MBBS Part I	100	100	200	100 x 2 papers = 200	200	400

Internal Assessment Practical Examinations
II MBBS

Internal Assessment - 1

OBGY

Subject: OBGY Practical (IA – 1)					
Spotting	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
10	10	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

Subject: OBGY Practical (IA – 2)					
Long Case					
History	Examination	Investigation	Treatment	AETCOM	Practical Total
10	10	10	10	10	50

Subject: OBGY Practical (IA – 3)					
Spotting	OSCE 1	OSCE 2	Viva	Journal & log book	Practical Total
10	10	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills.

Subject: OBGY Practical (IA – 4)					
Long Case					
History	Examination	Investigation	Treatment	AETCOM	Practical Total
10	10	10	10	10	50

Subject: OBGY Practical (IA –5)				
Long Case (Obstetrics)	Gynaecology Case	Family Planning	Journal & log book	Practical Total
50	20	20	10	100

Subject: OBGY Practical (Prelim)								
ANC Case	Gynaecology Case	PNC / Post – Op Case	Family Planning Viva	Obstetrics Table Viva	Gynaec Table Viva	Spotting (2 x 10 spots)	Journal & log book	Practical Total
50	25	20	25	20	20	20	20	200

Subject: OBGY Practical (MUHS Final)							
ANC Case	Gynaecology Case (Diagnosis and discussion)	PNC / Post – Op Case (Diagnosis and discussion)	Family Planning Viva	Obstetrics Table Viva	Gynaec Table Viva	Spotting (4 x 10 spots)	Practical Total
50 *	25	20	25	20	20	40	200

* 10 marks each for history, examination, AETCOM, investigation & treatment.

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 6 internal assessment examinations in OBGY.

2. The suggested pattern of question paper for internal assessment, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.

3. Internal assessment marks for theory and practical will be converted to out of 50 (theory) +50 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	**Practical**
Phase II	**100**	**100**
Phase III/I	**100**	**100**
Phase III/II	**300**	**300**
Total	**500**	**500**
Conversion out of	**50**	**50**
Conversion formula	**Total marks in 6 IA theory examinations /10**	**Total marks in 6 IA Practical examinations /10**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

4. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

5. Students 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 order to be eligible for appearing at the final University examination of that subject.
6. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

7. **Remedial measures**

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically.
ii) Extra classes for such students may be arranged. If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	**Practical**
Remedial examination (as per final examination pattern)	**200**	**200**
Conversion out of	**50**	**50**
Conversion formula	**Marks in remedial theory examinations /4**	**Marks in remedial Practical examinations /4**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

B. <u>Remedial measures for absent students:</u>

i. If any of the students is absent for any of the 6 IA examinations due to any reasons, following measures shall be taken.
ii. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
iii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
iv. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Format for Internal Assessment
Theory Examination
IA – 1, IA – 2, IA – 3 & IA - 4

Question No.	Type of Question	No. of Questions (no. To be solved)	Max. Marks
1.	MCQ	10	10 (1 marks each)
2.	SAQ	6 (Any 5 out of 6)	25 (5 marks for each question x 5 questions)
3.	LAQ	1 (Compulsory)	15
		Total	50

Format for Internal Assessment
Theory Examination IA - 5

Question No.	Section	Type of Question	No. of Questions	Max. Marks
1.	A	MCQ	20	20 (1 marks each)
2.	B	LAQ	4 (Any 3 out of 4)	45 (15 marks for each question x 3 LAQ)
3.	C	SAQ	7 (Any 6 out of 7)	30 (5 marks for each question x 6 SAQ)
4.	C	SAQ	1 question from AETCOM	5
			Total	100

Format for MUHS Final Theory Examination
Paper I & II

Question No.	Section	Type of Question	No. of Questions	Max. Marks
1.	A	MCQ	20	20 (1 marks each)
2.	B	LAQ	4 (Any 3 out of 4)	45 (15 marks for each question x 3 LAQ)
3.	C	SAQ	7 (Any 6 out of 7)	30 (5 marks for each question x 6 SAQ)
4.	C	SAQ	1 question from AETCOM	5
			Total	100

Maharashtra University of Health Sciences, Nashik

OBSTETRICS AND GYNECOLOGY

Journal

Name of the College

_____

_____

Admission Year : _____

CERTIFICATE

This is to certify that,

Mr/Ms._____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this journal as per the guidelines prescribed by Medical Council of India, for MBBS Competency Based Curriculum in the subject of Obstetrics and Gynaecology.

Date: ___/___/_____

Place: _____

Teacher -in-Charge **Professor and Head**

Instructions

The journal is a record of the cases seen by the designated student during her/his clinical postings in OBGY and during the labour room posting.

The student is expected to write down the details of:

1. Two normal low risk pregnant patients.
2. Five patients whose normal vaginal delivery the student has witnessed/assisted/conducted.
3. Two instrumental deliveries.
4. Three caeserean sections.
5. Pregnancies with complications.(12 Cases)
6. Three postnatal cases.
7. Eight gynaecology cases
8. Four family planning cases

Index

Record of Attendance

Phase	Duration of posting	Posting from date	Posting to date	Attended days/out of days	Signature of Unit In charge
Phase II	4 weeks				
Phase III part 1	4 weeks				
Phase III part 2	12 weeks				

Teacher -in-Charge **Professor and Head**

Department of Obstetrics and Gynaecology

Antenatal Cases
(Seen and recorded)

Serial number	Case	Page number
1.	Anemia in pregnancy	
2.	Preeclampsia	
3.	Eclampsia	
4.	IUGR	
5.	Multifetal gestation	
6.	Breech	
7.	Previous caesarean	
8.	Preterm	
9.	Placenta praevia	
10.	Abruptio placentae	
11.	Heart disease in pregnancy	
12.	Diabetes in pregnancy	

Antenatal case-1(2+12 similar repetitions)

Name: Age:

Address: Occupation:

Socioeconomic status: Religion: Caste:

Education:

Booked/ registered (number of antenatal visits in pregnancy):

H/O Amenorrhoea

Chief complaints:

History of present pregnancy:

Menstrual history:

PMC:

LMP: EDD:

Obstetric history:

Past medical history:

Family history:

Diet history:

Personal history:

General examination:

Built: Height:

Weight: Nourishment:

General condition:

Temperature:

Pulse: Respiration:

BP:

Pallor:

Icterus, cyanosis, glossitis, angular stomatitis, JVP, Lymphadenopathy, clubbing,goitre

Breasts:

Systemic examination:

CVS

RS

CNS

Obstetric examination:

Inspection:

Palpation: Fundal height.....weeks

Symphysiofundal height:.....cms.Abdominal girth:.....cms

Leopold's 1st manoeuvre

Leopold's 2nd manoeuvre

Leopold's 3rd manoeuvre

Leopold's 4th manoeuvre

Auscultation

Provisional Diagnosis:

Investigations:

Routine:ANC Profile

Blood group, Rh Typing		Hb Platlet	
Blood sugar		HIV	
HBs antigen		VDRL	
Sickling/ Hb electrophoresis		Serum TSH	
Urine albumin Urine sugar		Urine culture senstivity	

USG:

Special investigations:

Final diagnosis:

Management:

Signature of teacher Date:

Labour Cases
(Attended and recorded)

Serial number	Case	Page numbers
1.	Normal Delivery: 5 cases	
2.	Instrumental delivery; 2 cases	
3.	Caesarean section: 3 cases	

Labour and delivery case-1(10 similar pages)

Name: Age:

Address: Occupation:

Socioeconomic status: Religion: Caste:

Education:

Booked/ registered (number of antenatal visits in pregnancy):

H/O Amenorrhoea:

Chief complaints:

History of present pregnancy:

Menstrual history:

PMC:

LMP: EDD:

Obstetric history :

Past medical history:

Family history:

Diet history:

Personal history:

General examination:

Built: Height:

Weight: Nourishment:

General condition:

Temperature:

Pulse: Respiration:

BP:

Pallor,icterus, cyanosis, glossitis, angular stomatitis, thyroid, JVP, Lymphadenopathy, clubbing

Breasts:

Systemic examination:

CVS

RS

CNS

Obstetric examination:

Inspection:

Palpation:

Fundal height Symphysio fundal height

Abdominal girth

Leopold's 1st manoeuvre

Leopold's 2nd manoeuvre

Leopold's 3rd manoeuvre

Leopold's 4th manoeuvre

Auscultation

Provisional Diagnosis:

Investigations:

Routine:

Blood group, Rh Typing		Hb Platelets	
PGBS		HIV	
HBs antigen		VDRL	
Sickling/ Hb electrophoresis		Serum TSH	
Urine albumin Urine sugar		Urine culture senstivity	

USG:

Final diagnosis:Labour :Induced/Spontaneous/Active management

Delivery details: Normal/Low Forceps/Ventouse

Presentation:Vertex/Face/Breech

Episiotomy:Yes/No

AMTSL;Yes/No: Details if yes:

Placental delivery: controlled cord traction/Manual removal of placenta

Delivery/Operations Notes:

Indication for Intervention in case of Instrumental delivery or Caeserean section:

Name of Obstetrician:

Assistant:

Anaesthesia

Anaesthesiologist:

PPH:Yes/No

Placental weight: Placental abnormality:

Cord length

Baby notes:

Date of birth

Sex of baby : Birth weight : Full term/ Preterm/Postterm

Apgar score:1 min 5 min

Congenital malformation

Postnatal period follow up including breast feeding:

Condition at the time of discharge:

Involution of uterus

Perineum

Lochia:

Treatment received:

Mother Baby

Treatment advised at discharge:

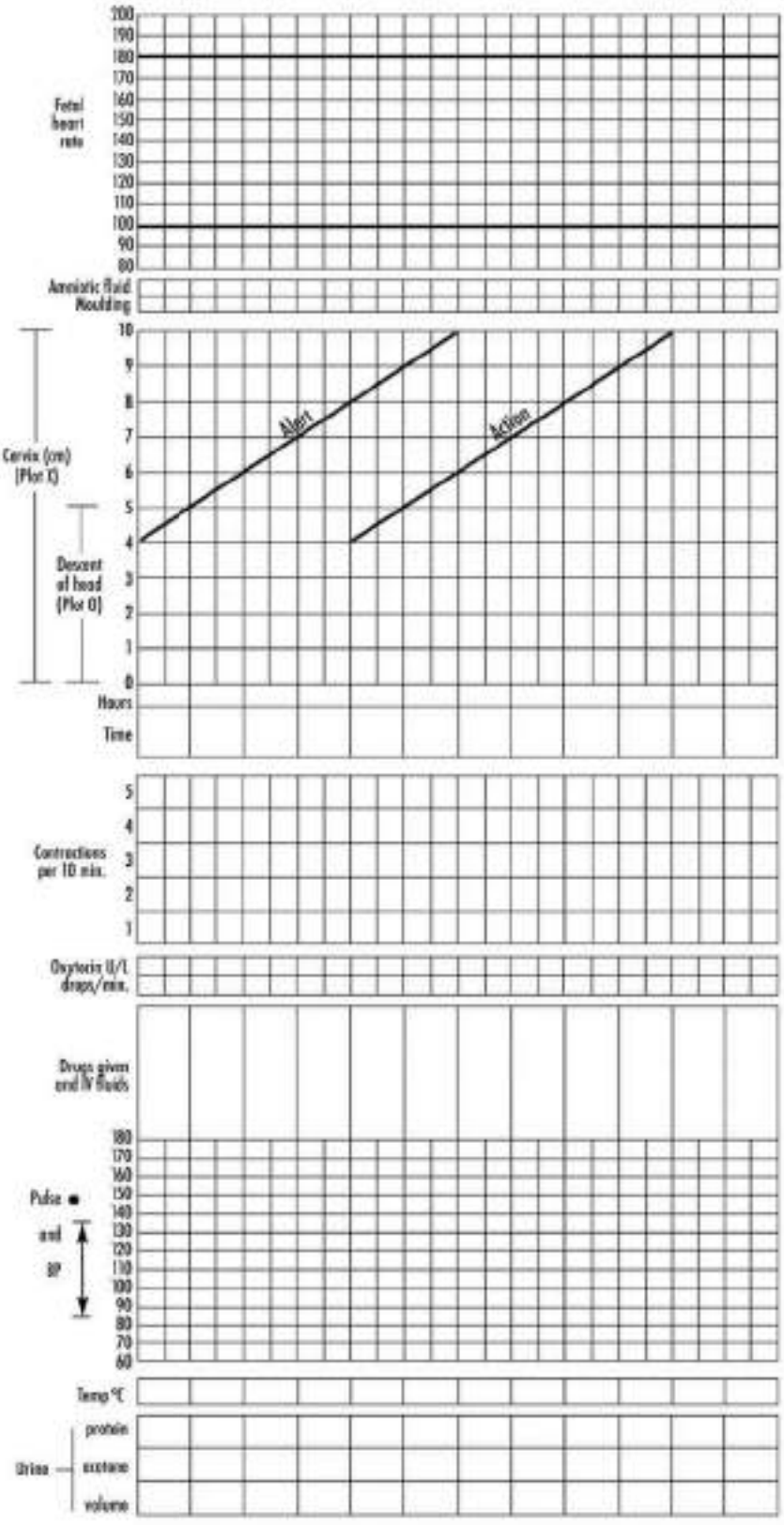
Contraception advised

Signature of teacher:

Date:

Name | Gravida | Para | Hospital number

Date of admission | Time of admission | Ruptured membranes | hours



Postnatal Cases

(Seen and recorded)

Serial number	Case	Page number
1.	Post vaginal delivery 1 case	
2.	Post caesarean section 1 case	
3.	Abnormal puerperium 1 case	

Postnatal case-1(3 similar repetitions)

Name: Age:

Address: Occupation:

Socioeconomic status: Religion: Caste:

Education:

Booked/ registered (number of antenatal visits in pregnancy):

Date and time of delivery:

Gestational age at delivery:

Intranatal history:

Relevant complaints at time of admission:

Examination findings at time of admission:

Duration of labour:

PPH:Yes/No

Any abnormal findings:

Type of delivery:

If caesarean or instrumental delivery: Indication

Condition of baby at birth:

Time of birth, sex of baby, birth weight:

Baby with mother /in NICU:

Postnatal history:

Lochia:

Pain:

Bowel/bladder:

Breast feeding or any problem:

Antenatal history:

Obstetric history :

Past medical history:

Family history:

Diet history:

Personal history:

General examination:

Built: Height:

Weight: Nourishment:

General condition:

Temperature:

Pulse: Respiration:

BP:

Pallor,icterus, cyanosis, glossitis, angular stomatitis, JVP, Lymphadenopathy, clubbing,goitre

Breasts:

Systemic examination:

CVS

RS

CNS

Abdominal examination:

Inspection:

Palpation:

Fundal height:

Involution of uterus:

Bowel sounds in case of caeser:

Abdominal wound/Perineum:

Bleeding PV/Lochia:

Urine Output:

Provisional Diagnosis:

Investigations:

Routine:

Blood group, Rh Typing		Hb	
BS		HIV	
HBs antigen		VDRL	
Sickling/ Hb electrophoresis		Serum TSH	
Urine albumin		Urine culture sensitivity	

Special investigations:

Treatment advised/given to

Mother :

Baby:

Treatment advised at discharge:

Contraception advised:

Signature of teacher:

Date:

Gynaecology Cases
(Seen and recorded)

Serial number	Case	Page number
1.	Vaginitis	
2.	Fibroid uterus	
3.	Genital prolapse	
4.	Infertility	
5.	Adenexal mass/Ovarian mass	
6.	Abnormal uterine bleeding(O)	
7.	Post menopausal bleeding	
8.	Cancer cervix	

Gynaecology case-1(8 similar repetitions)

Name: Age:

Address: Occupation:

Socioeconomic status: Religion: Caste:

Education:

Chief complaints:

History of present illness:

Menstrual history:

Obstetric history:

Past medical history:

Family history:

Diet history:

Personal history:

General examination:

Built: Height:

Weight: Nourishment:

General condition:

Temperature:

Pulse: Respiration:

BP:

Pallor,icterus, cyanosis, glossitis, angular stomatitis, goitre, JVP, Lymphadenopathy, clubbing

Breasts:

Systemic examination:

CVS

RS

CNS

Per Abdomen examination:

Per Speculum findings:

Per vaginum findings:

Provisional Diagnosis:

Investigations as indicated

Blood group, Rh Typing		CBC Hb TLC DLC Platelet	
BS- F, PP		LFT	
KFT		Serum TSH	
Sickling/ Hb electrophoresis		ECG	
Urine albumin		Urine culture senstivity	
ECG			
Pap smear			
USG			
Colposcopy			
Cervical biopsy			
Endometrial,endocervical			

biopsy	
CT/MRI	

Any other investigations:

Final diagnosis:

Operation notes:

Treatment received

Postoperative period

Histopathology:

Condition on discharge:

Treatment advised:

Signature of teacher: Date

Family planning Cases

(Seen and recorded)

Serial number	Case	Page number
1.	Tubectomy-Minilap or laparoscopic	
2.	MTP first trimester (suction and evacuation)	
3.	MTP second trimester	
4.	CuT insertion	

Family planning case-1(4 similar repetitions)

Name: Age:

Address: Occupation:

Socioeconomic status: Religion: Caste:

Education:

Menstrual history:

Obstetric history :

Previous Contraceptive history:

Past medical history:

Family history:

Personal history:

General examination:

Systemic examination:

Per Abdomen examination:

Per Speculum findings:

Per vaginum findings:

Investigations as indicated

Blood group, Rh Typing		Hb	
BS- F, PP		Urine albumin	
USG			

Any other investigations:

Operation notes:

Treatment received

Postoperative period

Condition on discharge:

Advice on discharge;

Signature of teacher:

Date:

Maharashtra University of Health Sciences Nashik

OBSTETRICS AND GYNECOLOGY

LOGBOOK - MBBS

AS PER COMPETENCY BASED CURRICULUM

Name of the College

Admission Year : _____

Index

BIODATA OF THE CANDIDATE

PHOTO

Name of the student:

Name of the course: MBBS

Date of birth:

Father's / Guardian's name:

Mother's name:

Blood group:

Permanent Address: Temporary Address:

…… ……

…… …… .

Student's contact no:

Father's/ Guardian's contact no:

Student's Email id:

Father's/ Guardian' s Email id:

Candidates Signature: …….. Date: .....

LOG BOOK CERTIFICATE

This is to certify that,

Mr/Ms._____ _____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for MBBS Competency Based Curriculum in the subject of Obstetrics and Gynecology.

Date: ___/___/_____

Place: _____

Teacher -in-Charge

Professor and Head

Department of Obstetrics and Gynecology

Instructions

The undergraduate medical education program is designed with a goal to create an “Indian Medical Graduate” (IMG) p ossessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant.

This Logbook gives an opportunity to achieve goals pertaining to skill learning in Obstetrics and Gynecology, so that IMG becomes capable to provide respectful maternity and Gynecology care to the society.

1) Logbook is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her logbook.

2) The student is responsible for getting the entries in the logbook verified by the Faculty in charge regularly. Certifications for competencies to be taken on same day.

3)Refer to university course content for skill to ensure which competencies to be covered in which phase

4) Entries in the logbook will reflect the activities undertaken in the department & have to be scrutinized by the, teacher in c harge of session, Head of the concerned unit and department.

5) The logbook is a record of various activities by the student like:

- Overall participation & performance

- Attendance

- Participation in sessions

- Record of completion of pre-determined activities.

- Acquisition of selected competencies

6) The logbook is the record of work done by the candidate in that department / specialty and should be verified by the college before submitting the application of the students for the University examination.

Record of Attendance

Phase	Duration of posting	Posting from date	Posting to date	Attended days/out of days	Signature of Unit In charge
Phase II	4 weeks				
Phase III	4 weeks				
Phase IV	12 weeks				

.....

Signature of Head of theDepartment

Records of Internal Assessments

-	Exam No.	Date	Theory	Date	Practical including Viva	Signature of teacher
1	Phase II-1st exam		/50		/50	
2	Phase II-2nd exam		/50		/50	
3	Phase III-1st exam		/50		/50	
4	Phase III-2nd exam		/50		/50	
5	Phase IV-1st exam		/100		/100	
6	Prelims		/200		/200	
	Remedial if any					
	Total		/500		/500	
	Conversion= Total/5		/100		/100	

.....

Signature of Head of theDepartment

CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Competency # addressed	Name of Activity
OG5.1	Describe, discuss and identify pre-existing medical disorders and discuss their management; discuss evidence-based intrapartum care
OG5.2	Determine maternal high risk factors and verify immunization status
OG6.1	Describe, discuss and demonstrate the clinical features of pregnancy, derive and discuss its differential diagnosis, elaborate the principles underlying and interpret pregnancy tests.
OG8.2	Elicit, document and present history in a OBGY patient including obstetric and menstrual history, last menstrual period, comorbid conditions and past medical history
OG8.3	Describe, demonstrate, document and perform a general,systemic and abdominal examination includingobstetrical examinations and clinical monitoring of maternal and fetal well-being.
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well-being

OG8.5	Describe and demonstrate pelvic assessment in a model
OG35.1	Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (perrectal and per-vaginal)
OG35.2	Arrive at a logical provisional diagnosis after examination.
OG35.3	Recognize situations, which call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment.
OG35.5	Determine gestational age, EDD and obstetric formula
OG36.1	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.
OG36.2	Organise antenatal, postnatal, well-baby and family welfare clinics
OG38.4	Assess the need for and issue proper medical certificates to patients for various purposes

PSYCHOMOTOR / PERFORMANCE SKILLS:

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

I – independent certification

D - demonstration

LIST OF COMPETENCIES

Competency # addressed	Name of Activity
OG9.2	Describe the steps and observe/ assist in the performance of an MTP evacuation

OG13.3	Observe/ assist in the performance of an artificial rupture of membranes
OG13.4	Demonstrate the stages of normal labor in a simulated environment / mannequin
OG13.5	Observe and assist the conduct of a normal vaginal delivery
OG15.2	Observe and assist in the performance of an episiotomy and demonstrate the correct suturing technique of an episiotomy in a simulated environment. Observe/Assist in operative obstetrics cases – including - CS, Forceps, vacuum extraction, and breech delivery
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment
OG19.3	Observe/ assist in the performance of tubal ligation
OG19.4	Enumerate the indications for, describe the steps in and insert and remove an intrauterine device in a simulated environment
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment
OG34.4	Operative Gynaecology : Understand and describe the technique and complications: Dilatation & Curettage (D&C); EA-ECC, cervical biopsy; abdominal hysterectomy; myomectomy; surgery for ovarian tumours; staging laparotomy; vaginal hysterectomy including pelvic floor repair; Fothergill's operation, Laparoscopy; hysteroscopy; management of postoperative complications
OG35.7	Obtain informed consent for any examination / procedure
OG35.8	Write a complete case record with all necessary details

OG35.9	Write a proper discharge summary with all relevant information
OG35.10.	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details
OG35.11	Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis
OG35.12	Obtain a PAP smear in a stimulated environment
OG35.13	Demonstrate the correct technique to perform artificial rupture of membranes in a simulated / supervised environment
OG35.14	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment
OG35.15	Demonstrate the correct technique to insert and remove an IUD in a simulated/ supervised environment
OG35.16	Diagnose and provide emergency management of antepartum and postpartum hemorrhage in a simulated / guided environment
OG35.17	Demonstrate the correct technique of urinary catheterisation in a simulated/ supervised environment
OG36.3	Demonstrate the correct technique of punch biopsy of uterus in a simulated/ supervised environment
OG37.1	Observe and assist in the performance of a Caesarean section
OG37.2	Observe and assist in the performance of Laparotomy
OG37.3	Observe and assist in the performance of Hysterectomy – abdominal/vaginal

OG37.4	Observe and assist in the performance of Dilatation & Curettage (D&C)
OG37.5	Observe and assist in the performance of Endometrial aspiration - endocervical curettage (EA-ECC)
OG37.6	Observe and assist in the performance of outlet forceps application of vacuum and breech delivery
OG37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion
OG38.1	Laparoscopy :observe
OG38.2	Hysteroscopy ;observe
OG38.3	Lap sterilization: observe

AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

LIST OF COMPETENCIES

Competency addressed	Name of Activity
OG8.6	Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy
OG13.4	Counsel on methods of safe abortion.
OG17.2	Counsel in a simulated environment, care of the breast, importance and the technique of breast feeding
OG19.2	Counsel in a simulated environment, contraception and puerperal sterilisation

OG20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy
OG35.4	Demonstrate interpersonal and communication skills befitting a physician in order to discuss illness and its outcome with patient and family
OG35.6	Demonstrate ethical behavior in all aspects of medical practice.
OG35.11	HIV and hepatitis- counselling patients

Log book record of clinical skills

Sr. no.	Phase	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B)expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.		OG5.1									
2.		OG5.2									
3.		OG6.1									
4.		OG8.2									
5.		OG8.3									
6.		OG8.4									
7.		OG8.5									
8.		OG35.1									
9.		OG35.2									
10.		OG35.3									
11.		OG35.5									
12.		OG36.1									

13.		OG36.2									
14.		OG38.4									

Psychomotor skills

Sr. no.	Phase	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B)expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.		OG9.2									
2.		OG13.3									
3.		OG13.4									
4.		OG13.5									
5.		OG15.2									
6.		OG18.2									
7.		OG19.3									
8.		OG19.4									
9.		OG33.3									

10.		OG34.4									
11.		OG35.7									
12.		OG35.8									
13.		OG35.9									
14.		OG35.10.									
15.		OG35.11									
16.		OG35.12									
17.		OG35.13									
18.		OG35.14									
19.		OG35.15									
20.		OG35.16									
21.		OG35.17									
22.		OG36.3									
23.		OG37.1									
24.		OG37.2									
25.		OG37.3									
26.		OG37.4									
27.		OG37.5									
28.		OG37.6									
29.		OG37.7									

30.		OG38.1									
31.		OG38.2									
32.		OG38.3									

AetCom skills

Sr. no.	Phase	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B)expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.		OG8.6									
2.		OG13.4									
3.		OG17.2									
4.		OG19.2									
5.		OG20.2									
6.		OG35.4									

7.		OG35.6									
8.		OG35.11									

REFLECTION ON AETCOM MODULE For PHASE IV

Module 4.2- Case studies in medico-legal and ethical situations

Competency addressed	Level
Identify and discuss medico-legal, socio-economic and ethical issues as it pertains to abortion/ Medical Termination of pregnancy and reproductive rights	KH

Reflection (minimum 200 words) -1 Date:

Signature of Teacher-in-charge

REFLECTION ON AETCOM MODULE

Module 4.9- Medical Negligence

Competency addressed	Level
1. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues pertaining to medical negligence	KH
2. Identify, discuss and defend medico-legal, socio-cultural, professional and ethical issues pertaining to malpractice	KH

Reflection (minimum 200 words)-2
Date:

Signature of Teacher-in-charge

PAP smear obtaining and filling form for same.
(2 cases so 2 similar repetitions)

Signature of teacher:

Date:

Discharge summary(as per institutional format)

1. Vaginal delivery

Signature of teacher:Date:

Discharge summary

2. Caesarean section

Signature of teacher: Date:

Discharge summary

3. Hysterectomy abdominal

Signature of teacher: Date:

Discharge summary

4. Hysterectomy vaginal

Signature of teacher: Date:

Discharge summary

5. MTP

Signature of teacher:

Date:

Discharge summary

6. Tubal ligation

Signature of teacher:

Date

Referral note for a higher centre for obstetric patient

(this format to be typed in journal)

Signature of teacher:

Date:

Medical certificate(for obstetric or gynaecological condition)

Signature of teacher:

Date:

Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes, extracurricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase	Signature of Teacher

Reflection (minimum200words) – 1 **Date :**

TOPIC:

Reflection (minimum 200 words) – 2
Date :

TOPIC:

ANNEXURE 1:

RECORDING FORM FOR MINI – CEX

EVALUATOR : DATE :

STUDENT :

YEAR :

PATIENT DIAGNOSIS :

SETTINGS : AMBULATORY NEW COMPLEXITY : LOW

IN PATIENT FOLLOW UP MODERATE

ED HIGH

OTHER :

PATIENT AGE PATIENT SEX

FOCUS : DATA GATHERING / DIAGNOSIS / THERAPY / COUNSELLING

1. **MEDICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

2. **PHYSICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

3. **HUMANISTIC QUALITIES** / PROFFESIONALISM (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

4. **CLINICAL JUDGEMENT** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

5. **COUNSELLING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

6. **ORGANIZATION / EFFICIENCY** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

7. **OVERALL CLINICAL COMPETENCE** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

MINI CEX TIME : OBSERVING : _____ MINS

PROVIDING FEEDBACK _____ MINS

UNSATISFACTORY 1,2,3

SATISFACTORY 4, 5, 6

SUPERIOR 7, 8, 9

EVALUATOR SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

RESIDENT SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

COMMENTS :

STUDENT SIGNATURE EVALUATOR SIGNATURE

ANNEXURE 2:

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Communication skills rating scale adapted from Kalamazoo consensus statement.

Rating 3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

MUHS Ophthalmology CBME U.G Curriculum

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

1. Knowledge of common eye problems in the community
2. Recognize, diagnose and manage common eye problems and identify indications for referral,
3. Ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of ophthalmologic problems, their management and correlation with function, rehabilitation and quality of life.

TEACHING METHODS & HOURS

	Large Group Teaching	Small group teaching/Practical /Tutorials	SDL	AETCOM	Total	Clinical/Field Posting
	-	-	-	-	-	-
3rd part I/II	30 hours	60 hours	10 hours	MODULE 3.2	100 hours	PHASE 2 PHASE 3
Total	30 hours	60 hours	10 hours		100 hours	8 weeks

CURRICULUM

UG CURRICULUM FOR LARGE GROUP TEACHING

Topic code	Topic	No. of hours (30)	Integration	Method of Teaching
	Visual Acuity Assessment			
OP1.1	Describe the physiology of vision	1 hr	physiology	LGT
OP1.2	Define, classify and describe the types and methods of correcting refractive errors	2 hrs		LGT
OP1.4	Enumerate the indications and describe the principles of refractive surgery	1 hr		LGT
	Lids and Adnexa, orbit			
OP2.1	Enumerate the causes, describe and discuss the etiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa including	2 hr	Human anatomy	LGT

	Hordeolumexternum / internum, blepharitis, preseptal cellulitis , dacryocystitis , hemangioma, dermoid, ptosis , entropion, lid lag, lagophthalmos			
OP2.6	Enumerate the causes and describe the differentiating features and clinical features of proptosis	1 hr		LGT
	Conjunctiva			
OP3.3	Describe the aetiology , pathophysiology, ocular features, differential diagnosis, complications and management of various causes of conjunctivitis	2hr		LGT
	Corneas			
OP4.1 & OP4.2	Enumerate, describe and discuss the types and causes of corneal ulceration Enumerate and discuss the differential diagnosis of infective Keratitis	3 hr	Human anatomy	LGT
OP4.4	Enumerate the causes and discuss the management of dry eye	1hr		LGT
OP4.5	Enumerate the causes of corneal blindness	1 hr		LGT
OP4.6	Enumerate the indications and types of keratoplasty	1 hr		LGT
OP4.9	Describe and discuss the importance and protocols involved in eye donation and eye banking	1 hr		LGT
	Iris and Anterior Chamber			
OP6.1 OP6.2	Describe clinical signs of intraocular inflammation and enumerate the features that distinguish granulomatous from non granulomatous inflammation. Identify and distinguish acute iridocyclitis from chronic iridocyclitis	2 hrs		LGT
OP6.7	Enumerate and discuss the aetiology, the clinical distinguishing features of shallow and deep anterior chamber . Choose appropriate investigations for patients with above conditions of anterior chamber	4 hr	Human Anatomy	LGT
	Lens			

OP7.2	Describe and discuss the aetio-pathogenesis , stages of maturation and complications of cataract	1 hr	Pathology	LGT
OP7.4	Enumerate the types of cataract surgey and describe the steps intraoperative and postoperative complications of extracapsular cataract extraction surgery	1 hr		LGT
	Retina & Optic Nerve			
OP8.1	Discuss the aetiology , pathology , clinical features and management of vascular occlusion of the retina	1 hr	Human Anatomy , Pathology	LGT
OP8.3	Demonstrate the correct technique of a fundus examination and describe and distinguish the funduscopic features in normal condition and in conditions causing abnormal retinal exam	1 hr		LGT
OP8.5	Describe and discuss the correlative anatomy , aetiology , clinical manifestations, diagnostic tests , imaging and management of diseases of optic nerve and visual pathway	2 hr		LGT
	Miscellaneous			
OP9.2	Classify , enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus	1 hr		LGT
OP9.5	Describe the evaluation and enumerate the steps involved in the stabilization , initial management and indication for referral in a patient with ocular injury	1 hr		LGT

UG CURRICULUM FOR SMALL GROUP TEACHING

Topic code	Topic	No. of hours (60)	Integration	Method of Teaching
	Visual Acuity Assessment			
OP1.5	Define, enumerate the types and the mechanism by which strabismus leads to amblyopia	2 hr		SGT
	Lids and Adnexa, orbit			
OP2.4	Describe the aetiology , clinical presentation, Discuus the complication and management of orbital cellulitis	2 hr		SGT
OP2.5	Describe clinical features on ocular examination and management of a patient with cavernous sinus thrombosis	2 hr		SGT
OP2.6	Enumerate the causes and describe the differentiating features and clinical features and management of proptosis	3 hr		SGT
OP2.7	Classify the various types of orbital tumors . Differentiate the symtoms and signs of the presentations of various types of ocular tumors	4 hr		SGT
OP2.8	List the investigations helpful in diagnosis of orbital tumors. Enumerate the indications of appropriate referral	2 hr		SGT
	Conjunctiva			
OP3.4	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of trachoma	2hr		SGT
OP3.5	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of vernal catarrh	2 hr		SGT
OP3.6	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of pterygium	2 hr		SGT

OP3.7	Describe the etiology, pathophysiology , ocular features, differential diagnosis , complication and management of symblepharon	1 hr		SGT
	Cornea			
OP4.3	Enumerate the causes of corneal edema	2 hr		SGT
OP4.7	Enumerate the indications and describe the methods of tarsorraphy	2 hr		SGT
	Sclera			
OP5.1	Define, enumerate and Describe the etiology, associated systemic conditions , ocular features, indications for referral , complication and management of episcleritis	2 hr		SGT
OP5.2	Define, enumerate and Describe the etiology, associated systemic conditions , ocular features, indications for referral , complication and management of scleritis	2 hr		SGT
	Iris and anterior chamber			
OP6.3	Enumerate systemic conditions that can present as iridocyclitis and describe their ocular manifestations	3 hr		SGT
OP6.4	Describe and distinguish hyphema and hypopyon	3 hr		SGT
OP6.5	Describe and discuss the angle of the anterior chamber and its clinical correlates	3 hr		SGT
OP6.8	Enumerate and choose the appropriate investigations for patients with conditions affecting the uvea	3 hr		SGT
OP6.9	Choose the correct local and systemic therapy for conditions of anterior chamber and enumerate their indications , adverse events and interactions	2 hr		SGT
	Lens			
OP7.1	Describe the surgical anatomy and the metabolism of lens	2 hr	Anatomy & biochemistry	SGT
	Retina and Optic Nerve			SGT

OP8.2	Enumerate the indications for laser therapy in the treatment of retinal disease (including retinal detachment, retinal degeneration , diabetic retinopathy and hypertensive retinopathy)	4 hr		SGT
OP8.8	Enumerate and discuss treatment modalities in management of diseases of retina	5hr		SGT
	Miscellaneous			
OP9.3	Describe the role of refractive error correction in a patient with headache and enumerate the indications of refrral	2 hr		SGT
OP9.4	Enumerate, describe and discuss the causes of avoidable blindness and the national programs for control of blindness (including vision 2020)	3 hr		SGT

UG CURRICULUM FOR CLINICAL DEMONSTRATION/BED SIDE TEACHING / DOAP:

Topic code	Topic	No. of hours (10)	Integration	Method of Teaching
	Visual Acuity Assessment			
OP1.3	Demonstrate the steps in performing the visual acuity assessment for distance vision, near vision, color vision , the pin hole test and the menace and blink reflexes	1 hr	physiology	DOAP
	Lids and Adnexa , Orbit			
OP2.2	Demonstrate the symptoms and clinical signs of conditions enumerated in OP2.1	1 hr	Human Anatomy	DOAP
OP2.3	Demonstrate under supervision clinical procedure performed in the lid including : bells phenomenon, assessment of entropion / ectropion, perform the	1 hr		DOAP

	regurgitation test of lacrimal sac, massage technique in congdacryocystitis and trichiatic cilia removd by epilation			
	Conjunctiva			
OP3.1	Elicit document and present an appropriate history in a patient presenting with a " red eye" including congestion , discharge , pain	1 hr		DOAP
OP3.2	Demonstrate document and present the correct method of examination of a red eye including vision assessment , corneal lustre, pupil abnormality, ciliary tenderness			
OP3.8	Demonstrate the correct technique of removal of foreign body from the eye in a simulated environment	1 hr		DOAP
OP3.9	Demonstrate the correct technique of instillation of eye drops in a simulated environment			
	Cornea			
OP4.8	Demonstrate the correct technique of removal of foreign body in cornea in a simulated environment			
OP4.10	Counsel patient and family about eye donation in a simulated environment	1 hr		DOAP
	Iris and Anterior Chamber			
OP6.6	Identify and demonstrate the clinical features and distinguish and diagnose common clinical conditions affecting the anterior chamber	1 hr		DOAP
OP6.10	Counsel patients with condition of iris and anterior chamber about their diagnosis , therapy and prognosis in an empathetic manner in a simulated environment			
	Lens			
OP7.3	Demonstrate the correct technique of ocular examination ina patient with cataract	1 hr		DOAP
OP7.5	To participate in team for cataract surgery	1 hr		DOAP
OP7.6	Administer informed consent and counsel			DOAP

	patient for cataract surgery in a simulated enviroment			
	Miscellaneous			
OP9.1	Demonstrate the correct technique the examine extraocular movements (uniocular& binocular)	1 hr		DOAP

UG CURRICULUM FOR SDL

TOPIC CODE	TOPIC	TOTAL NO. OF HOURS	INTEGRATION	METHOD OF TEACHING
Competency OP 4.5	Enumerate the causes of corneal blindness Enumerate the indications and types of keratoplasty	1ST Hour – Introduction 2nd Hour – symposium 3rd Hour - feedback Total : 3 hours		SDL
Competency OP 9.4	Enumerate , describe and discuss the causes of avoidable blindness and the NPCB (Including VISION 2020)	1st hour – Horizontal integration with community medicine 2nd hour – orientation 3rd hour- quiz Total : 3 hours	Horizontal integration with community medicine	SDL
Competency OP 6.7	Enumerate and discuss the aetiology, clinical features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above mentioned conditions	1st hour – Introduction/ Orientation 2nd hour – tutorials Total : 2 hours		SDL
Competency OP	Define , enumerate	1st hour –		SDL

1.5	the types and the mechanism by which strabismus leads to amblyopia	introduction 2nd hour – role play Total : 2 hours		

Suggested books :

1. Parson's text book of Ophthalmology
2. Kanski' s clinical Ophthalmology
3. Khurana's text book of Ophthalmology
4. Textbook of Ophthalmology, S.K Mittal (Thieme), 2021 edition

Internal Assessment

Subject – Ophthalmology

Applicable w.e.f batches admitted from 2019 and onwards

Phase		
	Theory	Practical
Second MBBS	-	EOP Practical Examination may be conducted. However, these marks shall not be added to the Internal Assessment.

3rd Year (III MBBS, PART I)						
Phase	**I-Exam (March)**			**II-Exam Prelim (August)**		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/I MBBS	50	50	100	100	100	200

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 2 internal assessment examinations in Ophthalmology including Prelim.

2. The suggested pattern of question paper for internal assessment internal examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.

3. Internal assessment marks for theory and practical will be converted to out of 25 (theory) + 25 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	**-**	**-**
Phase III/I	**150**	**150**
Total	**150**	**150**
Conversion out of	**25**	**25**
Conversion formula	**Total marks in 2 IA theory examinations /6**	**Total marks in 2 IA Practical examinations /6**
Eligibility criteria after conversion	**10**	**10**
	Combined theory + Practical = 25	

1. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

2. Students 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 order to be eligible for appearing at the final University examination of that subject.
3. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

4. Remedial measures

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be arranged.

ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.

iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. The marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	**Practical**
Remedial examination	**100**	**100**
Conversion out of	**25**	**25**
Conversion formula	**Marks in remedial theory examinations /4**	**Marks in remedial Practical examinations /4**
Eligibility criteria after conversion	**10**	**10**
	Combined theory + Practical = 25	

B. <u>Remedial measures for absent students:</u>

If any of the students is absent for any of the 2 IA examinations due to any reasons, following measures shall be taken.

i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.

iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Format for Practical Examinations

Ophthalmology

Internal Assessment Practical

Seat No.	Long case including communication skills	OSCE (2 stations of 5 marks each)	Viva including Dark room instruments, Operative instruments	Log book and Journal viva	Practical Total
Max Marks	20	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills., history taking of a particular symptom.

Prelims and MUHS Final Practical

Seat No.	Long case including communication skills	OSCE (4 stations)	Log book and Journal viva	Dark room instruments	Operative instruments	Practical & Oral
Max. Marks	50	20	10	10	10	100

*Communication skills to be assessed by Kalamazoo Consensus, clinical signs to be assessed by either GLOBAL Rating Scale or OSCE, Psychomotor Skills to be assessed by OSCE with checklist. If the skills are small, 2 or 3 skills may be combined.

Internal Assessment Theory Examination (I)

Ophthalmology

Instructions:

SECTION "A" MCQ

1) *Put ☒ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10 Marks)

1. Multiple Choice Questions (Total 10 MCQ of One mark each) (1x10=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Use a common answer book for all sections.*

SECTION "B" (40 Marks)

2. Long Answer Questions structured clinical questions (15 x1=15)

a)

3.Short Answer Questions (Any 5 out of 6),(including 1 on AETCOM) (5 x 5=25)

a) b) c) d) e) f)

MUHS Final Theory Examination

Ophthalmology

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

SECTION "A" MCQ

Instructions:

5) Put ☒ in the appropriate box below the question number once only.
6) Use blue ball point pen only.
*7) Each question carries **One mark.***
8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (1x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*
6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions (Any 2 out of 3) structured clinical questions (15 x 2=30)

a) b) c)

3.Short Answer Questions (All 3),(including 1 on AETCOM) (5 x 3=15)

a) b) c)

SECTION C (40 Marks)

4 Long answer questions (15x1=15)

a)

5 Short answer questions(any 4 out of 5) (Clinical Reasoning) (5x4=20)

a) b) c) d) e)

College Logo

Name of the Institute

MUHS Logo

LOG BOOK

DEPARTMENT OF OPHTHALMOLOGY

CONTENTS

LOGBOOK CERTIFICATE

This is to certify that this log book is the bonafide record of Mr. / Ms ..... Roll No……..Admission Year ……., of the Department of Ophthalmology at …….Medical College.

The log book is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

_____

Head of Department of Ophthalmology

Signature with Date

BIODATA OF THE CANDIDATE

PHOTO

Name of the student:

Name of the course: MBBS

Date of birth:

Father's / Guardian's name:

Mother's name:

Blood group:

Permanent Address:

……

…….

Temporary Address:

……

…….

Student's contact no:

Father's/guardian's contact no:

Student's mail id:

Father's/guardian's mail id:

Candidates Signature: …….. Date: .....

GENERAL INSTRUCTIONS

1) The log book is a record of the academic / nonacademic activities of the student. Each Medical student is responsible for maintaining their logbook.

2) This logbook is prepared as per the guidelines of NMC for implementation of Competency based curriculum for 3 RD Professional MBBS students in the subject of Ophthalmology.

3) Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly singed by the supervising faculty.

4) Entries in the logbook will be in accordance with activities done in the department & have to be scrutinized by the Head of the department.

5) The logbook assessment will be based on multiple factors like
   - Overall presentation
   - Active participation in the sessions
   - Quality of write up of reflections
   - Timely completions
   - Attendance

6) The logbook shall be kept as record work of the candidate for the department & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A **clear record** of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least **2 years** after passing of the examination. Institutions may be asked to provide these details by the University as and when required.

The contents in the log book are suggested guidelines. The institutions can make **necessary changes as per the needs**

ATTENDANCE

Every candidate should have attendance not less than 75% of the total classes conducted in theory, practical and clinical jointly in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examinations.

For appearing at the University Examination, student should have minimum 75% attendance in each subject.

A candidate lacking in the prescribed attendance in any subject(s) should not be permitted to appear for the examination in that subject(s)

Students cannot appear in part or separately in individual subjects during the first appearance at the Professional examination.

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

Records of Internal Assessment Examinations

Sr. No.	Exam No.	Date	Theory	Date	Practical including Viva	Feedback provided	Signature of student	Signature of teacher
1	I Internal Assessment		----/50		----/50			
2	II Internal Assessment		----/50		----/50			
3	III Internal Assessment		----/100		----/100			
4	Calculation of Internal Assessment Marks		200/4		200/4			
5	Final Internal Assessment Marks (to be submitted to University)		50		50			

	Theory	**Practical**
Phase II	**50**	**50**
Phase III/I	**50**	**50**
Phase III/II	**100**	**100**
Total	**200**	**200**
Conversion	**50**	**50**

.....

Signature of Head of the Department

Self Directed Learning, Seminars, Tutorials, Projects, Quizzes, extracurricular activities

Sr. No.	Self Directed Learning, Seminars,Tutorials, Projects, Quizzes, extracurricular activities	Date	Phase III/I	Phase III/II	Signature of Teacher

Reflection (minimum 200 words) - 1

TOPIC : **DATE :**

Reflection (minimum 200 words) - 2

TOPIC : **DATE :**

LOGBOOK CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, Simulated patients as per the institutional preference.

RECORDING FORM FOR MINI – CEX

EVALUATOR : DATE :

STUDENT :

YEAR :

PATIENT DIAGNOSIS :

SETTINGS : AMBULATORY NEW COMPLEXITY : LOW

IN PATIENT FOLLOW UP MODERATE

ED HIGH

OTHER :

PATIENT AGE PATIENT SEX

FOCUS : DATA GATHERING / DIAGNOSIS / THERAPY / COUNSELLING

1. **MEDICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

2. **PHYSICAL INTERVIEWING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

3. **HUMANISTIC QUALITIES** / PROFFESIONALISM (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

4. **CLINICAL JUDGEMENT** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

5. **COUNSELLING SKILLS** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

6. **ORGANIZATION / EFFICIENCY** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

7. **OVERALL CLINICAL COMPETENCE** (OBSERVED / NOT OBSERVED)

1 2 3 / 4 5 6 / 7 8 9

MINI CEX TIME : OBSERVING : _____ MINS

PROVIDING FEEDBACK _____ MINS

UNSATISFACTORY 1,2,3

SATISFACTORY 4, 5, 6

SUPERIOR 7, 8, 9

EVALUATOR SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

RESIDENT SATISFACTION WITH MINI CEX

LOW 1 2 3 4 4 5 6 7 8 9 HIGH

COMMENTS :

STUDENT SIGNATURE EVALUATOR SIGNATURE

Competency # addressed	Name of Activity
OP1.2	Demonstrate the steps in performing the visual acuity assessment for distance vision,near vision,colour vision,the pin hole test ,the menace and blink reflexes
OP2.2	Demonstrate the symptoms and signs of lid conditions including hordeolum externum, blephritis,preseptal cellulitis,,dacryocystitis,dermoid ,ptosis, entropion,lid lag ,lagophthalmos
OP2.3	Demonstrate under supervision clinical procedures performed in the lid including Bell s phenomena assessment of entropion/ectrpion, regurgitation test, Creigler s massage, cilia removal by epilation
OP3.1	Elicit, document and present an appropriate history in a patient with a “red eye”including congestion,discharge and pain.
OP3.2	Demonstrate document and present the correct method of examination of a “red eye”incuding vision assessment ,corneal lustre, pupil abnormality, ciliary tenderness
OP3.8	Demonstrate the correct technique of removal of foreign body from the eye in a simulated environment
OP3.9	Demonstrate the correct technique of instillation of eye drops in a simulated environment
OP4.8	Demonstrate technique of removal of foreign body in the cornea in a simulated environment
OP6.6	Identify and Demonstrate the clinical features and distinguished diagnose common clinical conditions affecting the anterior chamber

OP7.3	Demonstrate the correct technique of ocular examination in a patient with a cataract
OP7.5	To participate in the team for cataract surgery
OP8.3	Demonstrate the correct technique of a fundus examination and describe and distinguish the funduscopic features in a normal condition and in conditions causing an abnormal retinal exam

LOGBOOK PSYCHOMOTOR / PERFORMANCE SKILLS :

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

I – independent certification

D- demonstration

LIST OF COMPETENCIES

Competency # addressed	**Name of Activity**
	Perform basic surgical skill such as First Aid including suturing and minor surgical procedures in simulated environment
(I)	Eye patching (correct technique), Eye Bandaging (post-surgery)
(I)	Incision and Drainage

LOGBOOK FOR
AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Communication skills rating scale adapted from Kalamazoo consensus statement

Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

LIST OF COMPETENCIES-For AETCOM

Competency # addressed	Name of Activity
OP4.10	Counsel patients and families about the eye donation in a simulated environment
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
OP 7.6	Administer informed consent and counsel patients for cataract surgery in a simulated environment

PHASE II-Clinical (minimum four assessment)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd, casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE II-Psychomotor

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										

PHASE II- AetCom

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										

PHASE III Part I -Clinical (minimum four assessments)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										

6.										

PHASE III Part I-Psychomotor skill

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										

5.										

PHASE III Part I - AetCom (Minimum Four assessments)

SR. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										

REFLECTION ON AETCOM MODULE

Reflection (minimum 200 words)-2 Date:

Module 4.6 - Case studies in ethics and the doctor-industry relationship

Competency addressed	Level	Assessment
Identify conflicts of interest in patient care and professional relationships and describe the correct response to these conflicts	SH	Participation in SDL and discussion

Signature of Teacher-in-charge

Pediatrics

Course Content

(Based on Medical Council of India,
Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / ~~3~~; page nos. 150-201)

1. Total Teaching hours: 105 hours (Lectures + Tutorials);
   15 hours (Self-directed learning);
   174 hours Clinical posting
2. A. Lectures(hours): 40(20 hours each in III MBBS Part I & Part II)
   B. Self-directed learning (hours): 15 (5 hours in III MBBS Part I & 10 hours in III MBBS Part II)

   C. Clinical Postings (hours): 174 (2 weeks/ 4 weeks/ 4 weeks)
   D. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**:**
   65 hours (30 hours in III MBBS Part I and 35 hours in III MBBS Part II)

- 8 symposia will be conducted from theory topics in
  - 15 hours of Self-directed Learning (3 in III MBBS (Part I) and
  - 5 in III MBBS (Part II))
- Two (02) Full day workshops
  - IMNCI
  - NRP
- Module 4.7 AETCOM Module will be covered in III MBBS (Part II) (05 hours)

Tutorials/ Small Group Discussions III (Part I) MBBS (30 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1	Normal Growth and Development	01	Developmental milestones (PE 1.5, 1.6)	1. Definition of Development 2. Principals of development 3. Factors affecting Development 4. Domains of Development 5. Milestones in various domains	Psychiatry

				6. Developmental assessment	
2	Common problems related to growth	02	Failure to thrive (PE 2.1, 2.4)	1.Definition 2. Etiology 1. Clinical Features 2. Evaluation of a child with Failure to thrive 3. Management	
			Short stature (PE 2.6)	1. Definition 2. Etiology 3. Clinical Features 4. Evaluation of a child with Short stature 5. Management	
3.	Care of the Normal Newborn, and High-risk Newborn	02	Care of normal newborn (PE 20.1, 20.2, 20.6,)	1. Define the common neonatal nomenclatures including the classification 2. Describe the characteristics of a Normal Term Neonate and High-Risk Neonates. 3. Explain the care of a normal neonate	Obs & Gynae
			Temperature regulation and Neonatal hypothermia (PE 20.12)	1. Temperature regulation in neonates 2. Disorders of temperature regulation 3. Definition of hypothermia 4. Prevention of hypothermia 5. Clinical features of hypothermia 6. Management of hypothermia	
4.	To promote and support optimal Breast feeding for infants	01	Breast Feeding (PE 7.1, 7.2, 7.3, 7.4, 7.6)	1. Awareness on the cultural beliefs and practices of breast feeding. 2. Enumerate advantages of breast feeding 3. Explain the physiology of lactation. 4. Technique of breast feeding 5. Problems in breast feeding 6. Enumerate the baby friendly hospital initiatives 7. Describe the composition and types of breast milk 8. Discuss the differences between cow's milk and Human milk. 9. Discuss the advantages of breast milk. 10. Overview about expressed breast milk	Obs & Gynae
5.	Complementary Feeding	01	Complementary feeding and	1. Define the term Complementary Feeding. 2. Discuss the principles, the initiation,	

			IYCF (PE 8.1, 8.2, 8.3)	attributes, frequency, techniques and hygiene related to Complementary Feeding 3. IYCF 4. Enumerate the common complimentary foods	
6.	Provide nutritional support, assessment and monitoring for common nutritional problems	01	Protein Energy Malnutrition (PE 10.1, 10.2, 10.4, 10.6)	1. Define malnutrition 2. Classify malnutrition including WHO classification, 3. Describe the etio-pathogenesis, clinical features, complication of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM). 4. Differentiate between kwashiorkor and marasmus 5. Outline the clinical approach to a child with SAM and MAM. 6. Management of a child with SAM and MAM. 7. Enumerate the role of locally prepared therapeutic diets and ready to use therapeutic diets. 8. Strategies to prevent malnutrition	
7.	Obesity in Children	01	Obesity (PE 11.1, 11.2, 11.6)	1. Define obesity 2. Describe the common etiology, clinical features and management of obesity in children. 3. Discuss the risk approach for obesity and criteria for referral 4. Discuss the prevention strategies	
8.	Micronutrients in health and disease 1: (Vitamins A,D,E,K, B Complex and C) Micronutrients in health and disease 2: Iron, Iodine,	04	Vitamin A Vitamin E, K (PE 12.1, 12.2, 12.4, 12.5, 12.11, 12.12, 12.13, 12.14)	**Vitamin A** 1. RDA, dietary sources of Vitamin A and their role in Health and disease. 2. Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin A. 3. Discuss the Vitamin A prophylaxis program and their recommendations **Vitamin E** 1. Discuss the RDA, dietary sources of Vitamin E and their role in health and disease.	

	Calcium and Magnesium			2. Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin E. **Vitamin K** 1. Discuss the RDA, dietary sources of Vitamin K and their role in health and disease. 2. Describe the causes, clinical features, diagnosis management and prevention of deficiency of Vitamin K	
			Vitamin B, C and Iodine deficiency disorders (PE 12.15, 12.16, 12.18, 12.19, 12.20, 13.7, 13.8, 13.10, 13.10)	**Vitamin B** 1. Discuss the RDA, dietary sources of Vitamin B and their role in health and disease 2. Describe the causes, clinical features, diagnosis and management of deficiency of B complex Vitamins. **Vitamin C** 1. Discuss the RDA , dietary sources of Vitamin C and their role in Health and disease 2. Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin C (scurvy) **Iodine deficiency Disorder** 1. Discuss the RDA, dietary sources of Iodine and their role in Health and disease. 2. Describe the causes, clinical features, diagnosis and management of deficiency of Iodine. 3. Discuss the National Goiter Control program and their recommendations.	
			Iron deficiency anemia (PE 13.1, 13.2, 13.5, 13.6)	1. Discuss the RDA, dietary sources of Iron and their role in health and disease' 2. Describe the causes, clinical features,diagnosis and management of Fe deficiency 3. Discuss the National Anemia control program and its recommendations.	
			Vitamin D and Calcium & Magnesium deficiency (PE 12.6, 12.7,	**Vitamin D/Ca/Mg** 1. Discuss the RDA, dietary sources of Vitamin D and their role in health and disease. 2. Describe the causes, clinical features,	

			12.9, 12.10, 13.11, 13.12, 13.13, 13.14)	diagnosis and management of Deficiency / excess of Vitamin D (Rickets and Hypervitaminosis D). 3. Discuss the role of screening for Vitamin D deficiency 4. Discuss the RDA, dietary sources of Calcium and their role in health and disease 5. Describe the causes, clinical features, diagnosis and management of Ca Deficiency 6. Discuss the RDA, dietary sources of Magnesium and their role in health and disease**.** 7. Describe the causes, clinical features, diagnosis and management of Magnesium Deficiency	
29.	Anemia and other Hemato-oncologic disorders in children	02	Anemia (PE 29.1)	1. Definition 2. Etiopathogenesis 3. Classification 4. Approach to a child with anemia	
			Nutritional anemia (PE 29.2, 29.3, 29.5)	**Iron def anemia/ Megaloblastic anemia** 1. Etiopathogenesis 2. Clinical features 3. Lab investigations 4. Management 5. Discuss the National Anemia Control Program	
9.	Fluid and electrolyte balance	01	Fluid and electrolytes (PE 15.1, 15.2)	1. Composition of body fluids 2. Water balance and Osmolality 3. Normal maintenance fluid and electrolyte requirements 4. Sodium balance and its disorders 5. Potassium balance and its disorders 6. Overview of Acid-Base disorders	
10.	National Programs, RCH – Universal Immunizations program	02	Vaccines in children (PE 19.1, 19.2, 19.3, 19.4)	1. Components of the Universal Immunization Program and the National Immunization Program. 2. Epidemiology of Vaccine preventable diseases 3. Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and	

				contraindications. (BCG, OPV, IPV Hep B, DPT, Hib, MMR) 4. Define cold chain and discuss the methods of safe storage and handling of vaccines	
			Immunization in special situations and newer vaccines (PE 19.5, 19.16)	1. Immunization in special situations – HIV positive children, immunodeficiency, pre-term, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travelers. 2. Enumerate available newer vaccines and their indications including pentavalent pneumococcal, rotavirus, JE, typhoid IPV & HPV. 3. Combination vaccines 4. AEFI	
11	Respiratory system	02	RTI GEM – I (PE 28.1, 28.2, 28.3, 28.4, 28.5, 28.6, 28.7, 28.8))	**Naso pharyngitis/ Pharyngo Tonsillitis/ Acute Otitis Media (AOM)** 1. Etio-pathogenesis 2. Clinical features 3. Management 4. Complications	
				Stridor/Epiglottitis/Acute laryngotracheobronchitis/Foreign Body Aspiration 1. Etiopathogenesis 2. Clinical features 3. Management	
			RTI GEM -II (PE 28.18)	**Bronchiolitis and wheeze associated LRTI/ Empyema/Lung Abscess** 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management 5. Prevention	
12.	Vaccine preventable Diseases& Tuberculosis	02	Fever &Exanthematous Fever (PE 34.14, 34.15)	1. Enumerate the common causes of fever 2. Etiopathogenesis 3. Clinical features 4. Complications 5. Management 6. Approach to a child with Exanthematous Fever	
			Measles, Mumps, Rubella &	1. Etiopathogenesis 2. Clinical features 3. Complications	

			Chicken pox (PE 34.15)	4. Management 5. Prevention 6. Measles, Mumps, Rubella & Chicken pox vaccines	
13.	Chromosomal Abnormalities	01	Down syndrome, Turner &Klinefelter syndrome (PE 32.1, 32.3, 32.4, 32.5, 32.6, 32.8, 32.9, 32.10, 32.11, 32.13)	1. Genetic basis 2. Risk factors 3. Clinical features 4. Complications 5. Prenatal diagnosis 6. Management 7. Genetic counselling.	General Medicine – PE 32.3, 32.9 Obs& Gynae – PE 32.9
14.	Diarrheal diseases and Dehydration	01	Diarrheal diseases & dehydration incl Persistent diarrhea, Chronic diarrhea and dysentery (PE 24.1, 24.2, 24.3, 24.4, 24.5, 24.6, 24.7, 24.8, 24.14)	1. Etio-pathogenesis 2. Classification 3. Clinical presentation 4. Management 5. Physiological basis of ORT 6. Types of ORS 7. Composition of various types of ORS 8. Classification and clinical presentation of various types of diarrheal dehydration 9. Types of fluid used in Pediatric diarrheal diseases and their composition 10. Role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti-emetics in acute diarrheal diseases	
15.	Pediatric Emergencies – Common Pediatric Emergencies	02	Poisoning (PE 27.8, 14.1, 14.2, 14.3, 14.4)	1. Clinical approach to a child with suspected poisoning 2. **Common poisonings – Hydrocarbon/OP/PCM/Lead/Envenomation** 3. Etiopathogenesis 4. Clinical features 5. Lab investigations 6. Management	General Medicine
			Child abuse (PE 27.29)	1. Causes 2. Clinical presentation Medico-legal implications	
16.	Allergic Rhinitis, Atopic Dermatitis,	01	Allergy in children (PE 31.1, 31.3, 31.12)	**Allergic Rhinitis/Atopic Dermatitis/Urticaria Angioedema** 1. Etiology 2. Clinical features	

	Bronchial Asthma , Urticaria Angioedema			3. Management 4. Complications 5. Prevention	
17.	Adolescent health and common problems related to Adolescent Health.	01	Adolescence & Puberty (PE 6.10, 6.11)	1. Visit to the Adolescent Clinic. Discuss the objectives and functions of AFHS (Adolescent Friendly Health Services) and the referral criteria.	Psychiatry
18.	Common problems related to Development-1 (Developmental delay, Cerebral palsy)	01	Developmental delay (PE 3.5, 3.6, 3.7)	1. Visit a Child Developmental Unit and observe its functioning. Discuss the role of the child developmental unit in management of developmental delay. Discuss the referral criteria for children with developmental delay	
19.	Common problems related to Development-2 (Scholastic backwardness, Learning disabilities, Autism ADHD)	01	Scholastic backwardness and Learning Disabilities (LD) (PE 4.5, 4.6, 5.10,5.11)	1. Visit to child guidance clinic. Discuss the role of Child Guidance clinic in children with Developmental problems& Behavioral problems.	
TOTAL		**30**			

Theory III (Part I) MBBS (20 hours)

S. No	Topic	Hours	Lectures (Competency No)	SLO	Horizontal Integration
1.	Normal Growth and Development	01	Growth & Development (PE 1.1, 1.2, 1.3, 1.5)	1. Definition of Growth 2. Definition of Development 3. Physiology of Growth & Development 4. Normal Growth – Somatic and physical 5. Assessment of Growth	Psychiatry

				parameters; Growth charts 6. Factors affecting Growth & Development 7. Overview of disorders related to Growth & Development	
2.	Common problems related to Development-1 (Developmental delay, Cerebral palsy)	02	Developmental delay (PE 3.1, 3.2, 30.10)	1. Definition 2. Developmental delay vs Intellectual disability 3. Etiology 4. Clinical Features 5. Approach to developmental delay and ID 6. Prevention and management	
			Cerebral palsy (PE 3.8, 30.11)	1. Definition 2. Etiopathogenesis 3. Types of CP 4. Evaluation of a child with CP 5. Prevention and management	Physical Medicine & Rehabilitation
3.	Common problems related to Development-2 (Scholastic backwardness, Learning disabilities, Autism ADHD)	02	Scholastic backwardness and Learning Disabilities (LD) (PE 4.1, 4.2)	1. Causes of Scholastic backwardness 2. Approach to a child with Scholastic backwardness 3. Definition of LD 4. Types of LD and clinical features 5. Etiology 6. Approach to a child with LD and management	
			ADHD and Autism (PE 4.3, 4.4)	1. Etiology of ADHD 2. Clinical features of ADHD 3. Diagnosis and management of ADHD 4. Etiology of Autism 5. Clinical features of Autism 6. Diagnosis and management of Autism	
4.	Common problems related to behavior	01	Behavioral problems of children incl Enuresis & Encopresis (PE 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9)	1. Describe the clinical features, diagnosis and management of common behavioral problems like • Thumb sucking, • Feeding problems, • Nail biting • Breath Holding spells, • Pica,	Psychiatry

				• Fussy infant. 2. Definition of enuresis and encopresis 3. Differentiate between primary and secondary enuresis 4. Maturation of bowel and bladder control 5. Etiology of Enuresis and Encopresis 6. Clinical features of Enuresis and Encopresis 7. Management of Enuresis and Encopresis	
5.	Adolescent health and common problems related to Adolescent Health.	01	Adolescence & Puberty (PE 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.12, 6.13)	1. Define Adolescence 2. Stages of adolescence and SMR 3. Describe the physical, physiological and psychological changes during adolescence and Puberty. 4. Outline the general health problems during adolescence. 5. Describe adolescent sexuality and common problems related to it. 6. Explain the Adolescent Nutrition and common nutritional problems. 7. Outline the common Adolescent eating disorders (Anorexia Nervosa, Bulimia). 8. Describe the common mental health problems during adolescence. 9. Enumerate the importance of obesity and other NCD in adolescents. 10. Enumerate the prevalence and the importance of recognition of sexual drug abuse in adolescents and children.	Psychiatry
6.	Normal nutrition, assessment and monitoring.	01	Normal Nutrition (PE 9.1, 9.2, 9.3, 9.7)	1. Describe the age-related nutritional needs of infants, children and adolescents including micronutrients and	

				vitamins 2. Concept of RDA and balanced diet. 3. Describe the tools and methods for assessment and classification of nutritional status of infants, children and adolescents. 4. Explains the Calorific value of common Indian foods	
7.	Vaccine preventable Diseases& Tuberculosis	8	Tuberculosis in children (PE 34.1, 34.2, 34.12, 34.13)	1. Epidemiology 2. Clinical features and clinical types 3. Complications of Tuberculosis 4. Diagnostic tools for childhood tuberculosis. 5. Indications and discuss the limitations of methods of culturing M. Tuberculosis. 6. Newer diagnostic tools for Tuberculosis including BACTEC CBNAAT and their indications	Respiratory Medicine
			Management of tuberculosis (PE 34.3, 34.4)	1. Various regimens for management of Tuberculosis as per National Guidelines. 2. Preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Programme	Respiratory Medicine
			Diphtheria, Pertussis, Tetanus (PE 34.16)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Diphtheria, Pertussis, Tetanus vaccines	
			Enteric fever (PE 34.17)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Typhoid vaccines	
			Rickettsial diseases (PE 34.20)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention	
			Parasitic infections	**Common Parasitic infections - leishmaniasis, filariasis, helminthic**	

			(PE 34.19)	**infestations, amebiasis, giardiasis** 1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention	
			Malaria (PE 34.19)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention **6.** National Malaria Eradication Programme	
			Dengue Fever (PE 34.18)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Overview of Chikungunya	
8.	Systemic Pediatrics-Central Nervous system	01	Acute Flaccid Paralysis (AFP) and Poliomyelitis (PE 30.13)	1. Etiology 2. Approach to a child with AFP 3. Evaluation 4. Management 5. AFP Surveillance	
9.	Endocrinology	03	Hypothyroidism (PE 33.1)	1. Physiology of thyroid gland 2. Thyroid function test 3. Etiology 4. Congenital vs Acquired 5. Clinical features 6. Evaluation 7. Management 8. New-born Screening	
			Diabetes mellitus in children and DKA (PE 33.4)	1. Etiopathogenesis 2. Diagnostic criteria 3. Classification 4. Clinical features 5. Management 6. Complications incl DKA	
			Disorders of puberty (PE 33.8)	**Precocious and delayed Puberty** 1. Definition 2. Etiology 3. Clinical Features 4. Evaluation 5. Management	
TOTAL		**20**			

Self-Directed Learning III (Part I) MBBS (05 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	The National Health Programs, NHM The National Health Programs, RCH	02	National programs pertaining to maternal & child health, child survival & safe motherhood (PE 17.1, 17.2, 18.1, 18.2)	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 RMNCH A+, RBSK, RKSK, JSSK mission Indra Dhanush and ICDS. 2. List and explain the components, plan, outcome of Reproductive Child Health (RCH) program and appraise its monitoring and evaluation 3. Explain preventive interventions for child survival and safe motherhood	Obs & Gynae
TOTAL		**02**			

Tutorials/ Small Group Discussions III (Part II) MBBS (35 hours)

S. No	Topic	Hours	Domain (Competency No.)	SLO	Horizontal Integration
1	Group Discussions	01	Fluids & Electrolytes, Nutrition (PE 15.3, 15.4, 15.5, 9.5)	1. Calculate fluid and electrolyte imbalance, Interpret electrolyte report, 2. Calculate the fluid and electrolyte requirement in health 3. Plan an appropriate diet in health & disease	
		01	Cardiac Failure (PE 23.11, 23.16, 23.17, 23.18)	1. Develop a treatment plan and prescribe appropriate drugs including fluids in cardiac diseases, anti -failure drugs, and inotropic agents. 2. Discuss the indications and limitations of Cardiac catheterization. 3. Enumerate some common cardiac surgeries like BT shunt, Potts and Waterston's and corrective surgeries 4. Demonstrate empathy while dealing with cardiac disease.	
		01	Oxygen Therapy (PE 27.9, 27.10, 14.5)	1. Discuss oxygen therapy in Pediatric emergencies and modes of administration. 2. Observe the various methods of administering Oxygen. 3. Discuss oxygen toxicity and free radical injury	
		01	Counselling (PE 2.3, 3.4, 8.5, 27.32, 27.33, 28.20)	1. Counselling a parent with failing to thrive child 2. Counselling a parent with developmental delay 3. Counsel & educate mothers on the best practices in complimentary feeding 4. Obtain Informed Consent.	

				5. Counsel parents of dangerously ill/terminally ill child to break bad news 6. Counsel the child with asthma on the correct use of inhalers in a simulated environment	
		01	Hemat (PE 29.18, 29.20)	1. Enumerate the referral criteria for Hematological conditions. 2. Enumerate the indications for splenectomy and precautions	
2.	Radiology	01	X-Ray/USG/Neuroimaging (PE 21.12, 21.13, 23.12, 26.9, 28.17, 30.21, 30.22, 31.9, 34.8)	1. Interpret report of Plain X Ray of KUB 2. Enumerate the indications for and Interpret the written report of Ultra sonogram of KUB 3. Interpret a chest X ray and recognize Cardiomegaly 4. Interpret Liver USG 5. Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case of management 6. Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in pediatric chest X-rays 7. Enumerate the indication and limitations &Interpret the reports of CT, MRI Brain & Spine 8. Interpret CX Ray in Asthma 9. Interpret a Chest Radiograph in pediatric TB	
3.	Cards (Case Scenario based)	01	(PE 21.11, 23.13, 23.14. 24.13, 26.9, 26.11, 28.16, 29.14, 19.15, 29.16, 30.20, 30.21, 30.22, 33.3, 33.6, 33.9, 34.9, 34.10)	1. Interpret Hemogram and Iron Panel 2. interpret the common analytes in a Urine examination 3. Interpret Pediatric ECG 4. Choose and Interpret blood reports in Cardiac illness 5. Interpret RFT and electrolyte report 6. Interpret Liver Function Tests,	

				viral markers. 7. Enumerate indications of UGI Endoscopy 8. Interpret blood tests relevant to upper respiratory problems. 9. Interpret CBC, LFT in anemia 10. Perform and interpret peripheral smear 11. Discuss the indications for Hemoglobin electrophoresis and interpret report 12. Interpret and explain the findings in a CSF analysis 13. Interpret and explain neonatal thyroid screening report 14. Perform and interpret Urine Dip Stick for Sugar. Interpret Blood sugar reports and explain the diagnostic criteria for Type 1 Diabetes 15. Interpret the reports of EEG 16. Perform Sexual Maturity Rating (SMR) and interpret 17. Interpret blood tests in the context of laboratory evidence for tuberculosis. Discuss the various samples for demonstrating the organism e.g. Gastric Aspirate, Sputum, CSF, FNAC.	
4.	Skills Lab	02	(PE 15.6, 15.7, 19.9, 19.13, 20.3, 24.15, 24.16, 24.17, 26.10, 27.20, 29.17, 30.23)	1. Demonstrate the steps of inserting an IV cannula in a model 2. Demonstrate the steps of inserting an interosseous line in a mannequin 3. Demonstrate the correct administration of different vaccines in a mannequin. 4. Describe the components of safe vaccine practice – Patient education/ counselling; adverse events following immunization, safe injection practices, documentation and Medico-legal implications 5. Perform Neonatal resuscitation	AETCOM – PE 19.9

				in a manikin 6. Perform NG tube insertion in a manikin 7. Perform IV cannulation in a model 8. Demonstrate the technique of liver biopsy or perform Liver Biopsy in a simulated environment. 9. Demonstrate performance of bone marrow aspiration in manikin 10. Perform in a mannequin lumbar puncture. Discuss the indications, contraindication of the procedure	
5.	Genito-Urinary system	02	Hypertension in children (PE 21.17)	1. Definition 2. Etiopathogenesis 3. Grading 4. Clinical features 5. Management 6. Complications 7. Acute severe hypertension	
			Voiding Disorders (PE 21.15)	1. Discuss & Enumerate the referral criteria for children with genitourinary disorder 2. Counsel & educate patients regarding referral	
6.	Cardiovascular system: Heart disease	04	Congestive cardiac failure in infants and children (PE 23.3)	1. Etiology 2. Pathogenesis 3. Clinical presentation 4. Management	
			Acyanotic congenital heart diseases (PE 23.1)	**VSD, ASD and PDA** 1. Etiology 2. Hemodynamic changes 3. Clinical features 4. Investigations 5. Management	
			Cyanotic congenital heart diseases (PE 23.2)	1. Classify Cyanotic congenital heart disease **Fallot's Physiology** 2. Etiology 3. Hemodynamic changes 4. Clinical features 5. Investigations	

				6. Management	
			Acquired Heart Disease (PE 23.4, 23.5, 23.6)	I**nfective endocarditis** 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management **Acute rheumatic fever** 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management and prevention 5. Complications	
7.	Pediatric Emergencies – Common Pediatric Emergencies	03	Shock in children (PE 27.5)	1. Definition 2. BP regulation 3. Pathophysiology 4. Classification 5. Monitoring 6. Management	
			Status epilepticus (PE 27.6, 30.9)	1. Definition 2. Etiology 3. Approach to a child with status epilepticus 4. Evaluation 5. Management	
			Unconscious child and Coma (PE 27.8)	1. Definition 2. Etiopathogenesis 3. Evaluation 4. Management 5. Brain death	
8.	Care of the Normal Newborn, and High-risk Newborn	04	Care of low birth weight (LBW) babies (PE 20.11)	1. Definition 2. Etiology 3. Explain the terminologies – IUGR/SGA 4. Clinical features 5. Issues in LBW care 6. Feeding in LBW babies 7. Management of LBW babies 8. Growth monitoring of LBW babies	
			Neonatal hypoglycemia & hypocalcemia (PE 20.13, 20.14)	**Hypoglycemia and hypocalcemia** 1. Definition 2. Etiology 3. Clinical features 4. Management	
			Neonatal Seizures (PE 20.15)	1. Etiology 2. Clinical features 3. Management	

			Perinatal infections (PE 20.17)	TORCH/Tuberculosis/Hep B/Varicella 1. Etiology 2. Transmission 3. Clinical features 4. Management	
9.	Anemia and other Hemato-oncologic disorders in children	02	Hemolytic anemia (PE 29.4)	1. Etiology 2. Classification 3. Approach to a child with hemolytic anemia 4. Management 5. Overview of HS, AIHA and HUS	
			Thalassemia and Sickle Cell Anemia (PE 29.4)	1. Etiology 2. Clinical features 3. Lab investigations 4. Management incl Iron Chelation therapy 5. Complications	
10.	Acute and chronic liver disorders	02	Acute liver disease & Fulminant hepatic failure (PE 26.1, 26.2)	**Acute hepatitis in children – Viral (Hep A,B,C), Autoimmune and Wilsons disease** 1. Etio-pathogenesis 2. Clinical features 3. Management **Fulminant Hepatic Failure in children** 1. Etio-pathogenesis 2. Clinical features 3. Management	
			Chronic liver disease & Portal hypertension (PE 26.3, 26.4, 26.11, 26.12)	**Chronic liver diseases in children** 1. Etio-pathogenesis 2. Clinical features 3. Evaluation 4. Complications – hepatic encephalopathy and ascites 5. management **Portal Hypertension in children** 1. Etio-pathogenesis 2. Clinical features 3. Management 4. Complications	
11.	Respiratory system	01	Pneumonia and ARDS (PE 27.3, 27.4)	1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management	

				5. Prevention	
4.	Malabsorption	01	Malabsorption (PE 25.1)	1. Etio-pathogenesis 2. Clinical presentation 3. Management 4. Overview of celiac disease	
TOTAL		**28**			

Theory III (Part II) MBBS (20 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	Care of the Normal Newborn, and High-risk Newborn	05	Birth asphyxia (PE 20.7)	1. Definition 2. Etiology 3. Clinical features 4. Management **5.** Prevention	
			Respiratory distress in newborn (PE 20.8)	**RDS/TTNB/MAS** 1. Etiology 2. Clinical features incl scoring systems 3. Management	
			Birth injuries &Hemorrhagic disease of newborn (HDN) (PE 20.9, 20.10)	**Birth Injuries** 1. Etiology 2. Clinical features 3. Management **HDN** 1. Definition and classification 2. Etiology 3. Clinical features 4. Management 5. Prevention	
			Neonatal Sepsis (PE 20.16)	1. Classification 2. Etiology 3. Clinical features 4. Investigations **5.** Management	
			Surgical conditions in newborn (PE 20.20)	TEF, esophageal atresia, anal atresia, cleft lip and palate, congenital diaphragmatic hernia 1. Etiology 2. Clinical presentation 3. Management 4. Causes of acute abdomen in	

				neonates	
2.	Genito-Urinary system	03	UTI (PE 21.1)	1. Etiology and predisposing factors 2. Clinical features 3. Diagnosis 4. Management 5. VUR	
			Approach to hematuria& Acute glomerulonephritis (PE 21.2, 21.4)	Hematuria 1. Definition 2. Diagnostic evaluation 3. Referral criteria Acute Glomerulonephritis 1. Definition 2. Etiology 3. Clinical features of PSGN 4. Management of PSGN 5. Complications	
			Acute kidney injury (AKI) and Chronic kidney disease (CKD) (PE 21.5, 21.6)	1. Definition and classification 2. Etiology and pathophysiology 3. Approach to a child with AKI 4. Management 5. Complications 6. Renal replacement therapy	
3.	Approach to and recognition of a child with possible rheumatologic problem	02	Approach to Rheumatological Problems incl JIA and SLE (PE 22.1)	1. Enumerate the common Rheumatological problems in children. 2. Approach to a child with arthritis 3. Referral criteria for a child with possible rheumatologic problem **JIA/SLE** 1. Definition 2. Etiopathogenesis 3. Clinical subtypes/Clinical features 4. Diagnosis 5. Management	
			Vasculitic disorders in children (PE 22.3)	Enumerate common Vasculitic disorders in children and its classification **Kawasaki disease/HSP** 1. Etiology 2. Clinical features 3. Diagnosis 4. Management	
4.	Anemia and other Hemato-	02	Thrombocytopenia and Hemophilia (PE 29.6, 29.7)	**Thrombocytopenia** **1.** Causes of thrombocytopenia **2.** Etiology of ITP	

	oncologic disorders in children			**3.** Clinical features and management of ITP **Hemophilia** **1.** Approach to a child with bleeding disorder **2.** Etiology and types of hemophilia 3. Clinical features and management of hemophilia	
			Leukemia, Lymphomas and Solid Tumors in children (PE 29.8, 29.9, 21.17)	**ALL/Lymphoma/Wilm'sTumor** 1. Etiology 2. Clinical features **3.** Management	
5.	Systemic Pediatrics-Central Nervous system	08	Meningitis in children (PE 30.1, 30.2)	1. Etio pathogenesis 2. Clinical features 3. Lab investigations 4. Management 5. Prevention 6. Differentiate between Bacterial, Viral and TB Meningitis **7.** Approach to a child with acute febrile encephalopathy	
			Hydrocephalus (PE 30.3)	1. Etio pathogenesis 2. Clinical features 3. Investigations 4. Complications 5. Management 6. Overview of IIH	
			Microcephaly and Neural tube defects (PE 30.4, 30.5)	1. Etio pathogenesis 2. Classification/Types 3. Clinical features 4. Complications 5. Management	
			Infantile hemiplegia/ Stroke (PE 30.6)	1. Etio pathogenesis 2. Clinical features 3. Investigations 4. Management	
			Epilepsy in children (PE 30.8)	1. Definition 2. Pathogenesis 3. Types of Epilepsy 4. Clinical presentation 5. Management 6. Overview of status epilepticus	
			Muscular	**DMD/BMD**	

			dystrophy (PE 30.14)	1. Etiology 2. Clinical features 3. Differential diagnosis 4. Evaluation 5. Management	
			Ataxia in children (PE 30.15)	1. Definition 2. Etiology 3. Clinical features 4. Differential Diagnosis 5. Management	
			Approach to headache in children (PE 30.16)	1. Pathophysiology of headache 2. Approach to a child with headache 3. Types of Headache 4. Management	
TOTAL		**20**			

Self-Directed Learning III (Part II) MBBS (10 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	Systemic Pediatrics-Central Nervous system	04	Floppy infant (PE 30.12)	1. Etiology 2. Clinical features 3. Differential diagnosis 4. Evaluation **5.** Management	
			Febrile seizures (PE 30.7)	1. Definition 2. Types 3. Etio pathogenesis 4. Clinical features 5. Investigations 6. Complications 7. Management	
2.	Care of the Normal Newborn, and High-risk Newborn	02	Neonatal hyperbilirubinemia (PE 20.19)	1. Physiological vs pathological jaundice 2. Etiology 3. Clinical features 4. Approach to a neonate with jaundice 5. Management 6. Follow-up	
3.	Genito-Urinary system	02	Approach to Proteinuria &Nephrotic	Proteinuria 1. Definition 2. Diagnostic evaluation	

			syndrome (PE 21.3)	3. Referral criteria Nephrotic Syndrome 1. Definition 2. Etiology 3. Terminologies – Remission/Relapse/Steroid dependence/Steroid resistance 4. Clinical features 5. Management 6. Complications 7. SDNS/SRNS/Congenital nephrotic syndrome	
4.	Respiratory system	02	Asthma in children (PE 28.19, 28.20, 31.5, 31.7, 31.8, 31.10)	1. Pathophysiology incl Triggers 2. Clinical features 3. Diagnosis and differential diagnosis 4. Management 5. Inhalational therapy 6. Monitoring and modification of treatment 8. Management of acute exacerbation of bronchial asthma	
TOTAL		**10**			

Internal Assessment

Subject – Pediatrics

Applicable w.e.f October 2020 onwards examination for batches admitted from June 2019 onwards

Phase		
	Theory	Practical
Second MBBS	-	EOP Practical Examination may be conducted. However, these marks shall not be added to the Internal Assessment.

3rd Year (III MBBS, PART I)

Phase	I-Exam (January)			II-Exam (April)		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/I MBBS	50	50	100	50	50	100

4th Year (III MBBS, PART II)

Clinical posting- 4 weeks

Theory- lectures- 20, tutorials- 35, self-directed learning-10. Total 65 hrs

Phase	III-Exam (May)			IV-Exam (Preliminary examination) (November)		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/II MBBS	50	50	100	100	100	200

Assessment in CBME is ONGOING PRCESS,

No Preparatory leave is permitted.

1. There shall be 4 internal assessment examinations in Pediatrics including Prelim.

2. The suggested pattern of question paper for internal assessment examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.

3. Internal assessment marks for theory and practical will be converted to out of 25 (theory) + 25 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	**Practical**
Phase II	**-**	**-**
Phase III/I	**100**	**100**
Phase III/II	**150**	**150**
Total	**250**	**250**
Conversion out of	**25**	**25**
Conversion formula	**Total marks in 4 IA theory examinations /10**	**Total marks in 4 IA Practical examinations /10**
Eligibility criteria after conversion	**10**	**10**
	Combined theory + Practical = 25	

1. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
13.01 to 13.49	13
13.50 to 13.99	14

2. Students 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 order to be eligible for appearing at the final University examination of that subject.

3. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

4. Remedial measures

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be arranged.

ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students. Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.

iii) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. The pattern for this repeat internal assessment examination shall be similar to the final University examination. The marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination	**100**	**100**
Conversion out of	**25**	**25**
Conversion formula	**Marks in remedial theory examinations /4**	**Marks in remedial Practical examinations /4**
Eligibility criteria after conversion	**10**	**10**
	Combined theory + Practical = 25	

B. <u>Remedial measures for absent students:</u>

If any of the students is absent for any of the 4 IA examinations due to any reasons, following measures shall be taken.

i. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.

ii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.

iii. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator.

Internal Assessment Practical Examinations

Pediatrics

Internal Assessment Practical – I, II and III

Subject: Pediatrics Practical (IA – I, II and III)				
Case	OSCE 1	OSCE 2	Journal & log book	Practical Total marks
20	10	10	10	50

OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills., history taking of a particular symptom; nutrition history, developmental history, immunization history.

Prelim Practical

Subject: Pediatrics Practical (Prelims)					
Long Case (Including clinical skills demonstration)	Short Case (Including communication skills)	OSCE (4 stations x 10 marks each)	Viva	Journal & log book	Practical Total marks
25	15	40	10	10	100

OSCE 1 – Clinical Skills , OSCE 2 – Anthropometry assessment, OSCE 3 – Certifiable procedural skills , OSCE 4 – AETCOM related skills

MUHS Final Practical

Subject: Pediatrics Practical (Prelims)				
Long Case (Including clinical skills demonstration)	Short Case (Including communication skills)	OSCE (4 stations x 10 marks each)	Viva	Practical Total marks
30	20	40	10	100

OSCE 1 – Clinical Skills , OSCE 2 – Anthropometry assessment, OSCE 3 – Certifiable procedural skills , OSCE 4 – AETCOM related skills

Internal Assessment Examination (I, II and III) Pediatrics

SECTION "A" MCQ

Instructions:

1) *Put ☐ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **One mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10 Marks)

1. Multiple Choice Questions (Total 10 MCQ of One mark each) (_10_x_1_=_10__)

a) b) c) d) e) f) g) h) i) j)

SECTION "B" & "C"

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*
6) *Use a common answerbook for all sections.*

SECTION "B" (20 Marks)

2 Short Answer Questions (Five marks each) (Any 5 out of 6) (5x5= 25)

a) b) c) d) e) f)

3 Long Answer Questions (15x1=15)

a)

MUHS Final Theory Examination

Paediatrics

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

FORMAT / SKELETON OF QUESTION PAPER

SECTION "A" MCQ

Instructions:

5) Put ☐ in the appropriate box below the question number once only.
6) Use blue ball point pen only.
*7) Each question carries **One mark.***
8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20 Marks)

1. Multiple Choice Questions (Total 20 MCQ of One mark each) (1x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*
6) Use a common answer book for all sections.

SECTION "B" (40 Marks)

2. Long Answer Questions (Any 2 out of 3) structured clinical questions (15 x 2=30)

a) b) c)

3.Short Answer Questions (All 3),(including 1 on AETCOM) (5 x 3=15)

a) b) c)

SECTION C (40 Marks)

4 Long answer questions (15x1=15)

a)

5 Short answer questions(any 4 out of 5) (Clinical Reasoning) (5x4=20)

a) b) c) d) e)

Journal of Paediatrics

College Logo	NAME OF THE COLLEGE **DEPARTMENT OF PAEDIATRICS**	MUHS,Nasik Logo

Journal of Paediatrics

Name of the Student: - _____

Batch Year: - _____

Roll No. :- _____

Phase: II (Year-)

Phase: III-I (Year-)

Phase: III-II (Year-)

College Logo	NAME OF THE COLLEGE **DEPARTMENT OF PAEDIATRICS**	MUHS,Nasik Logo

POSTING CERTIFICATE

Date- / /

Term	From	To	Absent days	Case- Histories Written	Skills achieved	Remark	Signatureof Unit Head
Phase: II (2 weeks)							
Phase:III-I (4 weeks)							
Phase: III-II (4 weeks)							
Date- Name of college- Seal-				- Signature- Professor and Head Department of Paediatrics.			

Note-

- Students must get the signature of the Unit In charge when posting is completed.
- This certificate must be submitted before every Internal assessment and Preliminary examination.
- Completed Record is Mandatory for appearing for the Final Examination.

HIPPOCRATIC OATH

"I swear by Apollo, the healer, Asclepius, Hygieia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment, the following Oath and agreement:

To consider dear to me, as my parents, him who taught me this art; to live in common with him and, if necessary, to share my goods with him; To look upon his children as my own brothers, to teach them this art; and that by my teaching, I will impart a knowledge of this art to my own sons, and to my teacher's sons, and to disciples bound by an indenture and oath according to the medical laws, and no others.

I will prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone.

I will give no deadly medicine to any one if asked, nor suggest any such counsel; and similarly I will not give a woman a pessary to cause an abortion.

But I will preserve the purity of my life and my arts.

I will not cut for stone, even for patients in whom the disease is manifest; I will leave this operation to be performed by practitioners, specialists in this art.

In every house where I come I will enter only for the good of my patients, keeping myself far from all intentional ill-doing and all seduction and especially from the pleasures of love with women or men, be they free or slaves.

All that may come to my knowledge in the exercise of my profession or in daily commerce with men, whom ought not to be spread abroad, I will keep secret and will never reveal.

If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all humanity and in all times; but if I swerve from it or violate it, may the reverse be my life.

MEDICAL STUDENT

"The medical student must exhibit a calm and generous disposition, besides being virtuous and of noble mind.

He must be tolerant of others and exhibit patience and perseverance in his academic pursuits.

Although of sharp intellect, he must be both rotational and modest.

He should possess a pleasant appearance and good looks, well-proportioned body which should free from physical defect or obvious diseases.

Above all, he must be compassionate.

He must exhibit deep interest in the art and science of healing.

He must use his intelligence to discuss facts about the disease and to understand the clinical significance of symptoms.

Such knowledge he must use not only for his own intellectual enrichment, but also for acquiring requisite skills in practical management.

He must be humble and loyal to his teachers and instructors.

He should be free from any addictions, greed, arrogance, and intolerance."

- Charaka Samhita (1000 BC)

Sequence of workbook

GENERAL INSTRUCTIONS

1. This Journal is a record of the academic activities of the designated student, who would be responsible for maintaining his/her Journal.

2. The student is responsible for getting the entries in the Journal verified by the Faculty in charge regularly.

3. Entries in the Journal will reflect the activities undertaken in the department and have to be scrutinized by the Head of the concerned department.

4. The Journal is a record of various activities by the student like:

   - Overall participation and performance
   - Attendance
   - Participation in sessions
   - Record of completion of pre-determined activities.
   - Acquisition of selected competencies.

5. The Journal is the record of work done by the candidate in that department / specialty and should be verified by the college before submitting the application of the students for the Universityexamination.

6. Proposednumberofcaserecordsshouldbementionedinthejournal-:

   Phase: II- first clinical posting (Two weeks)-
   Phase: III-I-second clinical posting in Third Minor (Fourweeks)-
   Phase: III-II Third Clinical postingin Third Major (Four weeks)-

INDEX

1. Long Cases:

Sr. No.	Date	Name of Patient	Diagnosis	Page No.	Sign of Teacher
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

2. Short Cases:

Sr. No.	Date	Name of Patient	Diagnosis	Page No.	Sign of Teacher
1					
2					
3					
4					
5					
6					

3. New Born Cases:

Sr. No.	Date	Name of Patient / New Born	Diagnosis	Page No.	Sign of Teacher
1					
2					
3					
4					
5					
6					

4. Immunization O.P.D. attended:

Sr. No.	Date	Immunization Attended	Sign of Teacher
1			
2			
3			
4			
5			

5. Procedures observed:

Sr. No.	Date	Name of Procedure Observed	Sign of Teacher
1			
2			
3			
4			
5			

6. Emergencies attended:

Sr. No.	Date	Name of Patient	Diagnosis	Sign of Teacher
1				
2				
3				
4				
5				

7. Drug information:

Sr. No.	Date	Name of Drugs	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

8. **Nutrition-**

Sr. No.	Date	Name of food item	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

9. **X-Ray**

Sr. No.	Date	Diagnosis of X-Ray	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

10. **Instruments-**

Sr. No.	Date	Name of Drugs	Sign of Teacher
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Template for Clinical Cases of Paediatrics

A. LONG CASE-

Informant-

Reliability – Good/Bad, consistent/ non consistent

OPD/IPD no.-

Name of the child-

Birth date- / /

Age -

Gender - M/F

Religion and caste.

Address-

Date of admission- / /

Date of examination- / /

- **Chief Complaints** – (in chronological order)
  1)
  2)
- **History of Present Illness –**
- **Past History –**
- **Personal History** -

  Bladder- Bowel-

  Sleep- Appetite-

  Addictions- Habits-

  Menstrual cycle-

  Relation with friends- Sports participation-

- **Family history- Pedigree chart:**
- **Birth History-**

➢ Antenatal history -

- Age of mother at marriage-
- Age of mother at pregnancy-
- Registration of pregnancy.
- Medication taken like iron, folic acid and calcium-
- Drug intake during pregnancy -
- Immunization of mother –
- History of trauma.
- Any illness or infection-
- Radiation exposure-
- Hospitals stay during pregnancy.
- History of smoking, drinking alcohol, any other-

➢ Natal history –

- Gestational age-
- Duration of Labor-

- Place of delivery- Home/ Hospital
- Person conducting the delivery-
- Mode of delivery-
- Babies cry immediately after birth-
- Birth weight of the baby-
- Date and time of birth-
- Any congenital malformation noted

➢ Post-natal history

➢ Neonatal history -

- Time of first breast feeding-
- Top feeds given-
- Any feeding difficulty-
- Prelacteal feeds given-
- NICU stay-
- Time of passage of first meconium- urine-
- History of neonatal convulsions or jaundice-

- **Developmental history-**

1) Motor milestones-
   - ✓ Grossmotormilestones
   - ✓ Finemotormilestones

2)Adoptivemilestones-

3)Socialmilestones

4)Languagemilestones-

- **Immunization History –**

BCG- given/ not, Scar- present/absent	OPV 0, 1,2, 3, booster
DPT- 1,2 3, booster	Measles
Vitamin-A	MMR-
Other vaccines-	

- **Dietary History-**

Protein intake– Actual----------Expected----------

Calorie intake- Actual----------Expected----------

- **Socioeconomic History -**

Total no. of members in the family-

Floor space area-

Per capita income-

Education of the Father ---------- Mother----------

Occupation of the Father ---------- Mother----------

Housing type- kaccha/pakka

Ventilation- Water supply-

Sanitation – toilet facilities / open air defecation.

Socio economic status.-

General Examination:

- **Anthropometry:**

No.	**Parameter**	**Actual**	**Expected**
1	Weight		
2	Height / Length:		
3	Head circumference:		
4	Chest circumference:		
5	Mid arm circumference:		
6	Upper segment: lower segment ratio:		
7	Body mass index:		
8	Arm span:		
9	Midpoint of stature:		

- **Vital Parameters: -**

1. Temperature: ----------F/ ----------C

2. Pulse –

- Rate- beats/min. Rhythm-Regular /Irregular
- Character- Volume-
- Radio femoral Delay- Capillary refill-

3. Respiration- Rate---- - cycles/min

4. Blood pressure -

- Right upper limb- / mmHg Left upper limb- / mmHg
- Right upper limb- / mmHg Left upper limb- / mmHg

5. Jugular venous pressure-

Head to Toe Examination-

a. Head-

- Size- normal/ microcephaly/macrocephaly
- Shape-
- Cephalic index-
- Craniosynostosis-
- Bossing / prominence-
- Fontanel- anterior- open (size-)/closed
- Post. Fontanels- (size-)/closed
- Scalp swelling -
- Transillumination of skull

b. Hair-

Colour- Texture Pigmentation-
Luster - Hair line –Low/normal/high

c. Face-

d. Eyes-

- Eyelids- Intercanthal distance-
- Eyebrows- Eyelashes-
- Conjunctiva- Cornea –
- Lens- Sclera-
- Fundus Conjunctiva -

e. Ear-

- Setting of ears –Low/normal Ear tag –
- Large prominent ear- Pinna –
- External auditory canal- Tympanic membrane

f. Mouth-

- Oral cavity- Buccal mucosa-
- Dentition: Gums:
- Tongue : Examination of throat-
- Lips : Cyanosis- Philthrum- other-
- Tonsil- Uvula-
- Posterior pharyngeal wall-

g. Neck-

- Swelling of neck : Webbing of neck
- Enlarged distended neck veins- Short neck
- cervical group of lymph nodes- Thyroid gland-
- Position of trachea - Neck stiffness

h. Skin-

- Colour- Turgor- Infections - Rash
- Subcutaneous nodules- Xanthoma and xanthelasma- Stria-

i. Hand-

- Congenital malformation -
- Single Palmar crease -
- Finger – Clubbing- Nails-

j. External gentile –

- Tanner staging sexual maturity score-
- Penile length:

k. Bones, Joints, Spine and Back-

l. Any Obvious Congenital Anomalies:

Systemic Examination:
Provisional Diagnosis-

1)
2)
3)
4)

Investigations-

Final Diagnosis-

Treatment-

Case Summary-

Date- **Signature of Teacher**

B. SHORT CASE

- Informant-
- Reliability –
- Consistent/ non consistent
- OPD/IPD no.-
- Name of the child-
- Birth date- / / Age -
- Gender - M/F Religion and caste.
- Address –
- Date of admission- / / Date of examination- / /

Chief Complaints – (in chronological order)

1)
2)
3)

General Examination:

- **Anthropometry:**

No.	Parameter	Actual	Expected
1	Weight		
2	Height / Length:		
3	Head circumference:		
4	Chest circumference:		
5	Mid arm circumference:		
6	Upper segment: lower segment ratio:		
7	Body mass index-		
8	Arm span-		
9	Midpoint of stature-		

- **Vital Parameters: -**

1. Temperature: ----------F/ ----------C

2. Pulse –

- Rate- beats/min. Rhythm-Regular /Irregular
- Character- Volume-
- Radiofemoral Delay- Capillary refill-

3. Respiration- Rate---- - cycles/min

4. Blood pressure -

- Right upper limb- / mmHg Left upper limb- / mmHg
- Right upper limb- / mmHg Left upper limb- / mmHg

5. Jugular Venous Pressure-

Head to Toe Examination-

a) **Head-**
   - Size- normal/ microcephaly/macrocephaly Shape-
   - Cephalic index-
   - Craniosynostosis- Bossing / prominence-
   - Fontanel- anterior- open (size-)/closed
   - Post. Frontanelle- (size-)/closed
   - Scalp swelling -
   - Transillumination of skull

b) **Hair-**
   Colour- Texture Pigmentation-
   Luster - Hair line –Low/normal/high

c) **Face-**

d) **Eyes-**
   - Eyelids- Intercanthal distance-
   - Eyebrows- Eyelashes-
   - Conjunctiva- Cornea –
   - Lens- Sclera-
   - Fundus Conjuctiva -

e) **Ear-**
   - Setting of ears –Low/normal Ear tag –
   - Large prominent ear- Pinna –
   - External auditory canal- Tymphanic membrane

f) **Mouth-**
   - Oral cavity- Buccal mucosa-
   - Dentition: Gums:
   - Tongue : Examination of throat-
   - Lips : Cyanosis- Philthrum- other-
   - Tonsil- Uvula-
   - Posterior pharyngeal wall-

g) **Neck-**
   - Swelling of neck : Webbing of neck
   - Enlarged distended neck veins- Short neck
   - cervical group of lymph nodes- Thyroid gland-
   - Position of trachea - Neck stiffness

h) **Skin-**
   - Colour- Turgor- Infections - Rash
   - Subcutaneous nodules- Xanthoma and xanthelasma- Stria-

i) **Hand-**
   - Congenital malformation -
   - Single Palmar crease -

- Finger –Clubbing- Nails

j. External Gentile –
Tanner staging sexual maturity score-
Penile length:

k. Bones, Joints, Spine and Back-

l. Any Obvious Congenital Anomalies:

Systemic Examination-

Provisional Diagnosis-
1)
2)
3)
4)
5)

Investigations-

Final Diagnosis-

Treatment-

Case Summary-

Date- **Signature of Teacher**

C. NEONATAL CASE

OPD/IPD NO. - Date-
Name of mother-
Name of father-
Date of delivery-
Sex of baby- m/f caste /religion-
Place of delivery- date of examination-

Maternal History-
Antenatal history -

- Age at marriage- Age at pregnancy-
- Registration of pregnancy- P- , G- , L- ,A-
- Family history-
- Consanguity- yes/no grade-
- Medication taken like iron, folic acid and calcium supplements-
- Drug intake during pregnancy –
- Immunization status of mother –
- Any illness or infection during pregnancy –
- Radiation exposure- Hospitals stay during pregnancy-
- History of smoking, drinking alcohol, any other.-
- History of trauma-

Natal history –

- Apgar score-
- Gestational age- Duration of Labor-
- Place of delivery- Home/ Hospital
- Person conducting the delivery-Mode of delivery-
- Babies cried immediately after birth-
- Birth weight of the baby-
- Date and time of birth-
- Any congenital malformation noted-

Postnatal history –
Neonatal history -

- Time of first breast feeding-
- Top feeds given-
- Any feeding difficulty-
- Prelacteal feeds given-
- NICU stay-
- Time of passage of first meconium- first urine-
- History of convulsions or jaundice-
- Inj. Vit. K given/not-
- Anyotherproblems-

Feeding History -

Immunization History –

- BCG- OPV '0' dose Any Other vaccines-

General Examination:

- **Anthropometry:**

No.	Parameter	Actual	Expected
1	Weight		
2	Length		
3	Head circumference:		
4	Chest circumference:		

- **Vital Parameters: -**

1. Temperature: ----------F/ ----------C

2. Pulse –

- Rate- beats/min.
- Rhythm-Regular /Irregular
- Character-
- Volume-
- Radio-femoral Delay-
- Capillary refill-

3. Respiration-Rate---- - cycles/min

4. Blood Pressure -

- Right upper limb- / mmHg
- Left upper limb- / mmHg
- Right upper limb- / mmHg
- Left upper limb- / mmHg

5.Pulse Oximetry- (Pre and Post Ductal Saturation)

- **Head to Toe Examination-**

a) Head-

- Size- normal/ microcephaly/macrocephaly Shape-
- Cephalic index-
- Craniosynostosis- Bossing / prominence-
- Fontanel- anterior- open (size-)/closed
- Post. Frontanelle- (size-)/closed
- Scalp swelling - Transillumination of skull

b) Hair-

Colour- Texture Pigmentation-

Luster - Hair line –Low/normal/high

c) Face-

d) Eyes-

- Eyelids- Intercanthal distance-
- Eyebrows- Eyelashes-

- Conjunctiva- Cornea –
- Lens- Sclera-
- Fundus Conjuctiva -

e) Ear-

- Setting of ears –Low/normal Ear tag –
- Large prominent ear- Pinna –
- External auditory canal- Tymphanic membrane

f) Mouth-

- Oral cavity- Buccal mucosa-
- Dentition: Gums:
- Tongue : Examination of throat-
- Lips : Cyanosis- Philthrum- other-
- Tonsil- Uvula-
- Posterior pharyngeal wall-

g) Neck-

- Swelling of neck : Webbing of neck
- Enlarged distended neck veins- Short neck
- cervical group of lymph nodes- Thyroid gland-
- Position of trachea - Neck stiffness

h) Skin-

- Colour- Turgor- Infections - Rash
- Subcutaneous nodules- Xanthoma and xanthelasma- Stria-

i) Hand-

- Congenital malformation -
- Single Palmar crease -
- Finger – Clubbing- Nails-

j. **External Gentile –**
Tanner staging sexual maturity score-
Penile length:

k. **Bones, Joints, Spine And Back**

l. **Any Obvious Congenital Anomalies:**

Neonatal Reflexes-

1) Rooting reflex:
2) Suckling reflex:
3) Doll's eye response:
4) Light reflex:
5) Glabellar tap:
6) McCarthy's reflex:
7) Gallant's reflex:
8) Perez reflex:
9) Landau's reflex:
10) Moro's reflex-
11) Stepping reflex
12) Placing reflex-
13) Prone crawl reflex :

14) Plantar & palmar grasp:
15) Crossed adductor reflex: :
16) Magnet reflex:
17) Asymmetric tonic neck reflex:-
18) Symmetric tonic neck reflex:-
19) Pull-to-sit-
20) Babinski or plantar reflex :-
21) Righting reflexes-

Systemic Examination—

Provisional Diagnosis-
1)
2)
Investigations-
Final Diagnosis-
Treatment-

Case Summary-

DateSignature of Teacher

D. IMMUNIZATION O.P.D. ATTENDED

Date-

Paste picture of vaccine

Name of vaccine –

Dose-

Route-

Special precautions-

Indications-

Contraindications-

Side effects-

Storage-

Any other Details of vaccine-

Sign of vaccinator-

E. EMERGENCY CASES OBSERVED-

Common Paediatrics Emergencies-

1. Basic Paediatrics and Neonatal Life Support and Advanced Cardiac Life Support.
2. Organophosphorous Poisoning
3. Kerosene Poisoning
4. Iron Poisoning
5. Dhatura Poisoning
6. Snake Bite
7. Scorpion Bite
8. Anaphylactic Shock
9. Hematemesis
10. Shock
11. Severe Dehydration
12. Acute Respiratory Failure
13. Acute Renal Failure
14. Status Asthamaticus
15. Severe Hypokalemia
16. Status Epilepticus
17. Hepatic Encephalopathy
18. Diabetic Ketoacidosis
19. Coma
20. Hypoglycemia

Template-

- OPD/IPD no.-
- Name of the child-
- Birth date- / / Age -
- Gender - M/F
- Date of admission- / /
- Date of examination- / /

Chief Complaints – (in chronological order)

1)
2)
3)
4)

History of Present Illness –

Vital Parameters: -

1. Temperature: ----------F/ ----------C

2. Pulse –

- Rate- beats/min. Rhythm-Regular /Irregular
- Character- Volume-
- Radio femoral Delay- Capillary refill-

3. Respiration-Rate---- - cycles/min

4. Blood Pressure -

- Right upper limb- / mmHg Left upper limb- / mmHg
- Right upper limb- / mmHg Left upper limb- / mmHg

5. Jugular Venous Pressure-

Head to Toe Examination- Any positive findings

Systemic Examination- positive findings only

Details of emergency attended

Final Diagnosis-

Treatment-

Case Summary-

Date- **Signature of Teacher**

F. PAEDIATRIC PROCEDURES OBSERVED

Requires certification-

- Anthropometry
- Development assessment
- Breast feeding, observation and counseling
- BMI calculation
- Prescription of Immunizations schedule
- Naso-gastric tube passage in manikin
- IV line in manikin
- Interosseous insertion in manikin
- Airway management
- Oxygen administration
- Bag ventilation
- Monitoring of shock
- IV access
- Calculation of fluid requirements
- Monitoring of unconscious
- Dehydration assessment
- BLS in manikin
- Urine dipstick
- Identification of BCG scar
- Interpret Mantoux

Following procedures to be only observed-

- Lumbar Puncture
- Liver biopsy
- Renal biopsy
- Bone marrow
- Bladder Catheterization
- Peripheral IV Insertion
- Insertion of Umbilical Venous and Arterial Lines
- Insertion of Naso -Gastric Feeding Tubes/Ryles tube
- Neonatal Intubation
- Neonatal Resuscitation
- Pediatric Resuscitation
- Intramuscular, intra-dermal, subcutaneous injections
- Bag and mask use

Template-

Name of Procedure

- OPD/IPD no.-
- Name of the child-

- AGE- SEX-
- Address –
- Date of admission- / /
- Date of procedure- / /

Chief Complaints – (in chronological order)

1)
2)
3)
4)

History of Present Illness –

Prerequisites-

Preparation-

Procedure details-
Post Procedure Care-

Complications Known-

Any Other-

Date- **Signature of Teacher**

G. COMMON DRUGS USED IN PAEDIATRICS

- **Name of drug-**
- **Class/ Group of Drug-**
- **Doses-**
- **Mechanism of action-**
- **Uses-**
- **Side effects-**
- **Contraindications-**
- **Any other-**

Paste picture of drug here

Date- **Signature of Teacher**

H. INSTRUMENTS USED IN PAEDIATRICS

Name of instrument-

Photograph of Instrument

Uses-

Precautions-

Describe procedure where it is used-

Any other –

Sign of Teacher

I. NUTRITION RELATED TO PAEDIATRICS

Name of food item-

Class-

Photograph

Nutritive contents –

Nutritive values-

Medicinal use-

Contraindications

Any other details-

Sign of Teacher-

Annexure- 1.--

Course Content Phase II(October 2020)

Subject: PAEDIATRICS

Theory / Practical

(Based on National Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / 3.)

1. Total Teaching hours:
   A. Lectures(hours): **No**
   B. Self-directed learning (hours):
   C. Clinical Postings(hours):
      - Weeks- 2 wks
      - Hours per week-15
      - Monday to Friday- 3 hours per day.
   D. Small group teachings/tutorials/Integrated teaching/Practical(hours)**:**No

Tentative Clinical posting schedule-

Day	Topic	Day	Topic
1	Round to Paediatric ward, Maternal ward, Kangaroo Mother Care, PICU, NICU, Labour room, OPD, Immunisation room etc.	6	Systemic examination of child- CVS
2	History taking in Paediatrics	7	Systemic examination of child- RS and PA
3	Assessment of growth and development	8	Neonatal examination
4	General examination of child.	9	Elicitation of neonatal reflexes
5	Systemic examination of child- CNS	10	Posting ending exam

Competency Nos.	Topics, Subtopics and Lectures

Annexure- 2.

Course Content Phase III-I(October 2020)

Subject: PAEDIATRICS (Theory / Practical)

(Based on National Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / 3.)

Total Teaching hours:

A. Lectures (hours): 20
B. Self-directed learning (hours): 5
C. Clinical Postings (hours):
- Weeks- 4
- Hours per week- 15
- Monday to Friday- 3 hours per day.

D. Small group teachings/tutorials/Integrated teaching/Practical (hours)**: 30**

Tentative Clinical posting schedule-

Day	Topic	Day	Topic
1	Round to Paediatric ward, Maternal ward, Kangaroo Mother Care, PICU, NICU, Labour room, OPD, Immunisation room etc.	11	Elicitation of neonatal reflexes
2	History taking in Paediatrics	12	Immunisation clinic
3	Assessment of growth and development	13	Immunisation clinic
4	General examination of child.	14	Immunisation clinic
5	Systemic examination of child- CNS	15	Immunisation clinic
6	Systemic examination of child- CNS	16	Paediatric Emergencies
7	Systemic examination of child- RS	17	Paediatric Emergencies
8	Systemic examination of child- Per Abdomen	18	Paediatric Emergencies
9	Systemic examination of child- CVS	19	Paediatric Emergencies
10	Neonatal case taking and examination.	20	Posting ending exam

Competency Nos.	**Topics, Subtopics and Lectures**

Annexure- 3.

Course Content Phase: III-II(October 2020)

Subject: PAEDIATRICS (Theory / Practical)

(Based on National Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / 3.)

Total Teaching hours:

A. Lectures (hours): 20
B. Self-directed learning (hours): 10
C. Clinical Postings (hours):
- Weeks- 4
- Hours per week- 15
- Monday to Friday- 3 hours per day.

D. Seminars/Small group teachings/tutorials/Integrated teaching/Practical (hours)**:** 35

Tentative Clinical posting schedule-

Day	Topic	Day	Topic
1	History taking and General examination of child.	11	Neonatal case taking, examination and Elicitation of neonatal reflexes
2	Systemic examination of child- CNS	12	Demonstration of Common procedures related to Paediatrics
3	Systemic examination of child- CNS	13	Demonstration of Common procedures related to Paediatrics
4	Systemic examination of child- RS	14	Common Drugs used in Paediatrics
5	Systemic examination of child- Per Abdomen	15	Common Drugs used in Paediatrics
6	Systemic examination of child- CVS	16	Common Instruments used in Paediatrics
7	Systemic examination of child- CVS	17	X-Ray film reading related to Paediatrics.
8	Short case discussion	18	Nutrition
9	Neonatal case taking, examination and Elicitation of neonatal reflexes	19	Nutrition
10	Neonatal case taking, examination and Elicitation of neonatal reflexes	20	Posting ending exam

Competency Nos.	**Topics, Subtopics and Lectures**

Annexure- 4.

Exam Pattern – Paediatrics

Theory Paper (100 marks)

- Section A- MCQ-:
- Section B-
- Section C-

Practical exam (100 marks)

- Long case-
- Short case/ New born-
- Table viva- (Drugs, Instruments, Nutrition, Vaccines and X-Rays-
- OSCE-

Internal Assessment:

- 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University

University Examination

- Mandatory 50% marks separately in theory and practical (practical = practical/ clinical + viva)

Annexure- 5
Distribution of journal marks
Total- 10 marks

Parameter	Total	Marks	Phase
Long cases	-	-	Phase: II (Second year)
	6 (CNS-2, RS-1, PA-1, CVS-2)	1	Phase: III-1 (Third Minor)
	66 (CNS-2, RS-1, PA-1, CVS-2)	1	Phase: III-II (Third Major)
Short cases	3	1/2	Phase: II (Second year)
	3	1/2	Phase: III-1 (Third Minor)
	3	1/2	Phase: III-II (Third Major)
Newborns	3	1/2	Phase: II (Second year)
	3	1/2	Phase: III-1 (Third Minor)
	3	1/2	Phase: III-II (Third Major)
Emergencies	5	1	Phase: III-1 (Third Minor)
Procedures	5	1	Phase: III-II (Third Major)
Vaccines	All vaccines as per Government of India.	1	Phase: III-I
Drugs	10	1	Phase: III-II
Instruments	10	1/2	Phase: III-II
Nutrition	10	1/2	Phase: III-II
Total- 10 marks			

Recommended books

Sr.no.	Author	Title of book/ Material	Publisher
1.	Vinod Paul, Arvind Bagga	Ghai Essential Pediatrics	CBS Publishers
2.	Meherban Singh	Pediatric Clinical Methods	CBS Publishers
3.	Michael Glynn William M Drake	Hutchison's Clinical Methods	Elsevier
4.	A Parthasarathy	IAP Colour Atlas of Pediatrics	Jaypee
5.	Tom Lissauer Will Carroll	Illustrated Textbook of Pediatrics	Elsevier
6.	Meherban Singh	Care of newborn	CBS Publishers

PEDIATRICS (CODE: PE) IN GENERAL

Competencies: The student must demonstrate:

1. Ability to assess and promote optimal growth, development and nutrition of children and adolescents andidentify deviations from normal,
2. Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care forneonates, infants, children and adolescents and refer as may be appropriate,
3. Ability to perform procedures as indicated for children of all ages in the primary care setting,
4. Ability to recognize children with special needs and refer appropriately,
5. Ability to promote health and prevent diseases in children,
6. Ability to participate in National Programmes related to child health and in conformation with the IntegratedManagement of Neonatal and Childhood Illnesses (IMNCI) Strategy,
7. Ability to communicate appropriately and effectively.

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

Table 1: Time distribution of MBBS Programme & Examination Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
							Foundation Course	I MBBS			
I MBBS								Exam I MBBS	II MBBS		
II MBBS								Exam II MBBS	III MBBS		
III MBBS Part I									Exam III MBBS Part I	Electives & Skills	
III MBBS Part II											
Exam III MBBS Part II		Internship									
Internship											

- One month is provided at the end of every professional year for completion of examination and declaration of results.

Table 2: Distribution of subjects by Professional Phase

Phase & year of MBBS training	Subjects & New Teaching Elements	Duration#	University examination
First Professional MBBS	• Foundation Course (1 month) • Human Anatomy, Physiology & Biochemistry, Introduction to Community Medicine, Humanities • Early Clinical Exposure	1 + 13 months	I Professional
	• Attitude, Ethics, and Communication Module (AETCOM)		
Second Professional MBBS	• Pathology, Microbiology, Pharmacology, Forensic Medicine and Toxicology, • Introduction to clinical subjects including Community Medicine • Clinical postings • Attitude, Ethics & Communication Module (AETCOM)	12 months	II Professional
Third Professional MBBS Part I	• General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radiodiagnosis & Radiotherapy, Anesthesiology • Clinical subjects /postings • Attitude, Ethics & Communication Module (AETCOM)	13 months	III Professional (Part I)
Electives	• Electives, Skills and assessment*	2 months	
Third Professional MBBS Part II	• General Medicine, Pediatrics, General Surgery, Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties • Clinical postings/subjects • Attitude, Ethics & Communication Module (AETCOM)	13 months	III Professional (Part II)

*Assessment of electives shall be included in Internal Assessment.

Table 6: Third Professional Part I teaching hours

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

** The clinical postings in the third professional part I shall be 18 hours per week (3 hrs per day from Monday to Saturday).*

Table 7: Third Professional Part II teaching hours

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

* 25% of allotted time of third professional shall be utilized for integrated learning with pre- 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).

Table 8: Clinical postings

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

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

Clinical postings may be adjusted within the time framework.

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

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

[3] This posting includes Physical Medicine and Rehabilitation.

[4] This posting includes Radiotherapy, wherever available.

List of abbreviations

A	Attitude
AETCOM	Attitude Ethics and Communication
Anat	Anatomy
Biochem	Biochemistry
Cardio	Cardiology
Com Med	Community Medicine
Derm	Dermatology
DOAP	Demonstrate Observe Assist Perform
ENT	ENT
Forensic	Forensic Medicine
Gastro	Gastroenterology
K	Knows
KH	Know How
S	Shows
C	Communication
Med	Gen Medicine
Micro	Microbiology
N	No
OBG	Obstetrics & Gynecology
Ophthal	Ophthalmology
OSCE	Objective Structured Clinical Examination
OSPE	Objective Structured Practical Examination
Psych	Psychiatry
PMR	Physical Medicine Rehabilitation
Path	Pathology
Physio	Physiology
Pharm	Pharmacology
SAQ	Short Answer Question
SGD	Small Group Discussion
Surg	Gen Surgery
RadioD	Radio diagnosis
Resp Med	Respiratory Medicine
Y	Yes

- Pages for all the phases will be added and color coded as follows-
  Phase II : yellow
  Phase III-I: Green
  Phase III-II: Brown.

PAEDIATRIC LOGBOOK for MBBS STUDENTS AS PER COMPETENCY BASED CURRICULUM

PHASE II to PHASE III/II MBBS

Preface

The Medical Council of India has revised the undergraduate medical education curriculum so that the Indian Medical Graduate (IMG) is able to recognize **"Health for all"** as a national goal. He/she should also be able to fulfil his/her societal obligations. The revised curriculum has specified the competencies that a student must attain and clearly defined teaching learning strategies for the same. With this goal in mind, integrated teaching, skill development, AETCOM and self-directed learning have been introduced. There would be emphasis on communication skills, basic clinical skills and professionalism. There is a paradigm shift from the traditional didactic classroom-based teaching to learning environments where there is emphasis on learning by exploring, questioning, applying, discussing, analysing, reflecting, collaborating and doing. The recognition of this need is enshrined by a greatly enhanced allocation of time to these methods and also the assessment techniques. With this view in mind the log book has been designed as per the guidelines of competency Based curriculum.

Name of the College

_____

_____

Admission Year: _____

CERTIFICATE

This is to certify that,

Mr/Ms._____

Roll No. _____ has satisfactorily attended/completed all assignments mentioned in this logbook as per the guidelines prescribed by Medical Council of India, for MBBS Competency Based Curriculum in the subject of PAEDIATRICS

Date: ___/___/_____

Place: _____

Teacher In charge **Professor and Head**

Department of PAEDIATRICS

Instructions

1) This logbook is prepared as per the guidelines of MCI for implementation of Competency based curriculum for MBBS students in the subject of Paediatrics.

2) Students are instructed to keep their logbook entries up to date.

3) Students are expected to write minimum 2 reflections on any two activities each of Clinical Paediatrics skills & Self-Directed Learning (SDL).

4) Students also have to write reflections on AETCOM Module. Reflections should be structured using the following guiding questions:

- What happened? (What did you learn from this experience)
- So what? (What are the applications of this learning)
- What next? (What knowledge or skills do you need to develop so that you can handle this type of situation?)

5) The logbook assessment will be based on multiple factors like

- Attendance
- Active participation in the sessions
- Timely completions
- Quality of write up of reflections
- Overall presentation

INDEX

Sr. No	Description	Page No's	REMARK	Signature of Teacher
1	Clinical Paediatrics Skills			
2	Self-Directed Learning, Seminars, Projects, Quizzes			
3	AETCOM Module			
4	Attendance Records			
5	Records of Internal Assessment			

* AETCOM – Competencies for IMG, 2018, Medical Council of India.

Record of Clinical PediatricsSkills

Clinical skills can be assessed by case presentation, case based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

I) SECOND PHASE MBBS

Competency # addressed	**Name of activity**	**Site WARD, skill lab, OPD , Casualty ,**	**Date completed**	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	**Method of assessment**	**SCORE**

II) THIRD PHASE MBBS PART I

Competency # addressed	**Name of activity**	**Site WARD, skill lab, opd casualty,**	**Date completed**	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	**Method of assessment**	**SCORE**

II) THIRD PHASE MBBS PART II

Competency # addressed	**Name of activity**	**Site WARD, skill lab, OPD , casualty ,**	**Date completed**	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	**Method of assessment**	**SCORE**

Reflection on Clinical Paediatrics Skills

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on Clinical Paediatrics Skills

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on Clinical PAEDIATRICS Skills

Topic: **Date:**

Signature of Teacher-in- charge

2. Self Directed Learning, Seminars, Tutorials, Projects, Quizzes

S.No	PHASE	Self Directed Learning, Seminars, Tutorials, Projects, Quizzes	Date	Signature of Teacher

Reflection on self directed learning activities

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on self directed learning activities

Topic: **Date:**

Signature of Teacher-in- charge

3: AETCOM Module

Counselling for Investigation, Treatment, Prognosis, Blood donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

AetCom skills can be assessed by use of Kalamazoo consensus.

Criteria	Phase II Score	Phase III/I Score	Phase III/II Score	
Builds relationship				
Opens the discussion				
Gathers information				
Understands the parent's perspective				
Shares information				
Manages flow				
Overall rating				
Signature of teacher				

Communication skills rating scale adapted from Kalamazoo consensus statement

Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

PHASE II- AETCOM (Two assessments)

Competency # addressed	**Name of competency**	**Site WARD, skill lab, opd , casualty,**	**Date completed**	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	**Method of assessment**	**SCORE**

PHASE III PART 1 (TWO ASSESSMENTS)

Competency # addressed	Name of Competency	Site WARD, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	Method of assessment	SCORE

PHASE III PART 2 (TWO ASSESSMENTS)

Competency # addressed	**Name of Competency**	**Site** **WARD, skill lab, opd , casualty,**	**Date completed**	Attempt at activity First (F) Repeat (R)	Sign of faculty	Sign of Learner	**Method of assessment**	**Score**

Reflection on AETCOM module

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic: **Date:**

Signature of Teacher-in- charge

Reflection on AETCOM module

Topic: **Date:**

Signature of Teacher-in- charge

4A: Attendance Record of the Student

S. No	Term	Theory (%)	Practical (%)	Signature of the Student	Signature of the Teacher
A	II PHASE				
B	III PHASE PART 1				
C	III PHASE PART 2				
E	OVER ALL ATTENDANCE				

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

SECTION 4B: Details of attending extra classes [For poor attendance (if any)]

S.No	Date	Period	Total hrs	Signature of student	Signature of Teacher
Total hours					

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

Section 5. Records of Internal Assessment Examinations

Records of Internal Assessment examinations

S.No	Exam	Theory	Practical including log book	Signature of student	Signature of Teacher
1	I Internal Assessment	/50	/ 50		
2	II Internal Assessment	/ 50	/ 50		
3	III Internal Assessment	/ 50	/ 50		
4	IV Internal Assessment (Prelim)	/100	/100		
4	Internal Assessment marks	/ 250	/ 250		
5	Converted marks	/25	/25		
	Total Converted marks	/50			

Note: Above information is for the benefit of students and parents. In case of any discrepancy departmental record will be treated as final.

ORTHOPAEDICS

Subject: Orthopedics

Lectures

MBBS phase III- part I

Total Teaching hours: 15 hours

Competencies written in red is of alignment and integration

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Skeletal Trauma, Poly trauma**				
		OR1.1	**Lecture**: 1		1
			Principles of pre-hospital care and Casualty management of a trauma victim including principles of triage		
		OR1.2	**Lecture** : 2		1
		SU2.1	The aetiopathogenesis, clinical features, investigations, and principles of management of shock Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring.	General Surgery	
		OR1.3	**Lecture**: 3		1

			Aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries		
		OR1.4	**Lecture**: 4		1
			Describe and discuss the Principles of management of soft tissue injuries		
		OR1.5	**Lecture**: 5		1
		AN10.12	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip Describe and demonstrate shoulder, hip, knee joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	Human Anatomy	
4.	**Fractures**				
		OR2.1	**Lecture**: 6		1
		AN8.3	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle Enumerate peculiarities of clavicle	Human Anatomy	
		OR2.2	**Lecture**: 7		1
			Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal		

			humerus		
		OR2.3	**Lecture**: 8		1
			Select, prescribe and communicate appropriate medications for relief of joint pain		
		OR2.4	**Lecture**: 9		1
			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		
		OR2.5	**Lecture**: 10		1
			Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury		
		OR2.6	**Lecture**: 11		1
			Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius		
		OR2.7	**Lecture**: 12		1
		AN48.2	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability Describe & demonstrate the (position, features, important peritoneal	Human Anatomy	

			and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of) important male & female pelvic viscera		
		OR2.8	**Lecture**: 13		1
			Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient		
		OR2.9	**Lecture**: 14		1
			Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture		
		OR2.10	**Lecture**: 15		1
			Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur		

MBBS Phase III- Part II

Total Teaching hours: 20 hours

Competencies written in red is of alignment and integration

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Fractures**				
		OR2.11	**Lecture**: 1		**1**
			Describe and discuss the aetiopathogenesis, mechanism of injury,		

			clinical features, investigations and principles of management of (a)Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome		
		OR2.12	**Lecture**: 2		**1**
			Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication		
		OR2.13	**Lecture**: 3		**1**
			Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: (a) Fracture both bones leg (b) Calcaneus (c) Small bones of foot		
		OR2.14	**Lecture**: 4		**1**
		AN20.1	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles	Human Anatomy	

			involved, blood and nerve supply of tibiofibular and ankle joint		
		OR2.15	**Lecture**: 5		**1**
			Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome		
		OR2.16	**Lecture**: 6		1
			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		
2	Musculoskeletal Infection				
		OR3.1	**Lecture**: 7		**1**
		PA33.1	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	Pathology	

			Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis		
3	Skeletal Tuberculosis				
		OR4.1	**Lecture**: 8		**1**
			Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine		
4	Rheumatoid Arthritis and associated inlammatory disorders				
		OR5.1	**Lecture**: 9		**1**
			Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints		
5	Degenerative disorders				
		OR6.1	**Lecture**: 10		**1**
			Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)		
6	Metabolic bone				

	disorders				
		OR7.1	**Lecture**: 11		**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		
7	Poliomyelitis				
		OR8.1	**Lecture**: 12		**1**
			Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post Polio Residual Paralysis		
8	Cerebral Palsy				
		OR9.1	**Lecture**: 13		**1**
			Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient		
9	Bone Tumors				
		OR10.1	**Lecture**: 14		**1**
		PA33.2	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign and malignant bone tumours and pathological fractures Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	Pathology	

10	Peripheral nerve injuries				
		OR11.1	**Lecture**: 15		**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		
11	Congenital lesions				
		OR12.1	**Lecture**: 16		**1**
		AN19.6	Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of: a. limbs and spine - Scoliosis and spinal bifida b. Congenital dislocation of Hip,Torticollis, c. congenital talipes equino varus Explain the anatomical basis of Flat foot & Club foot	Human Anatomy	
12	**ProceduralSkills**				
		OR13.1	**Lecture**: 17		**1**
			Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following: i. Above elbowplaster ii. Below kneeplaster iii. Above kneeplaster iv. Thomassplint v. splinting for long bonefractures		

			Strapping for shoulder and clavicletrauma		
		OR13.2	**Lecture**: 18		**1**
			Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following : (a) I.V. access central -peripheral (b) Bladdercatheterization (c) Endotrachealintubation Splintage		
13	**CounsellingSkills**				
		OR14.1	**Lecture**: 19		**1**
			Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like a. fractures with disabilities b. fractures that require prolonged bed stay c. bone tumours d. congenital disabilities		
		OR14.2	**Lecture**: 20		**1**
			Demonstrate the ability to counsel patients to obtain consentfor various orthopedic procedures like limp amputation, permanent fixationsetc..		

Subject: Orthopaedics

Small Group Discussion

MBBS phase III/I-

Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 20 hours

***These are suggested topics which can be modified at institutional level and SLO (Specific learning objectives) can be designed for each topic at institutional level**

S. NO	TOPICS*	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Skeletal Trauma, Poly trauma**				
		OR1.1	SGD: 1		1
			Describe and discuss the Principles of pre-hospital care and Casualty management of a trauma victim including principles of triage		
		OR1.1	SGD: 2		1
			Describe the Principles of triage in case of trauma victim		
		OR1.2	SGD: 3		1
			Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of		

			management of shock		
		OR1.3	SGD: 4		1
			Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries		
		OR1.4	SGD: 5		1
			Describe and discuss the Principles of management of soft tissue injuries		
		OR1.5	SGD: 6		1
		AN10.12	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of shoulder joint Describe and demonstrate shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	Human Anatomy	
		OR1.5	SGD: 7		1
		AN18.4	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of knee joint Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments,	Human Anatomy	

			relations, movements and muscles involved, blood and nerve supply, bursae around the knee joint		
		OR1.5	SGD: 8		1
		AN17.1	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of hip joint Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint	Human Anatomy	
		OR1.6	SGD: 9		1
			Discuss and demonstrate methods of closed reduction of shoulder dislocation / hip dislocation / knee dislocation		
2.	**Fractures**				
		OR2.1	SGD: 10		1
		AN8.3	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle Enumerate peculiarities of clavicle	Human Anatomy	
		OR2.2	SGD: 11		1

			Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus		
		OR2.3	SGD: 12		1
			Select, prescribe and communicate appropriate medications for relief of joint pain		
		OR2.4	SGD: 13		1
			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		
		OR2.5	SGD: 14		1
		AN8.1	Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm Identify the given bone, its side, important features & keep it in anatomical position	Human Anatomy	
		OR2.5	SGD: 15		1
			Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of Galeazzi injury		
		OR2.5	SGD: 16		1

			Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of Monteggia injury		
		OR2.6	SGD: 17		1
			Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius		
		OR2.7	SGD: 18		1
		AN48.2	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability Describe & demonstrate the (position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of) important male & female pelvic viscera	Human Anatomy	
		OR2.8	SGD: 19		1
			Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient		

		OR2.9	SGD: 20		1
			Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture		

MBBS Phase III/II-

Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 25 hours

***These are suggested topics which can be modified at institutional level and SLO (Specific learning objectives) can be designed for each topic at institutional level**

SR. NO.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Fracture**				
		OR2.10	SGD: 1		1
		AN17.2	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur Describe anatomical basis of complications of fracture neck of femur	Human Anatomy	

		OR2.11	SGD: 2		1
			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		
		OR2.11	SGD: 3		1
			Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of neurovascular injury and compartment syndrome in fractures around knee		
		OR2.12	SGD: 4		1
			Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication		
		OR2.13	SGD: 5		1

			Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: (a) Fracture both bones leg (b) Calcaneus (c) Small bones of foot		
		OR2.14	SGD: 6		1
		AN20.1	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint	Human Anatomy	
		OR2.15	SGD: 7		1
			Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome		

		OR2.16	SGD: 8		1
			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		
3.	**MusculoskeletalInfection**				
		OR3.1	SGD: 9		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		
		OR3.1	SGD: 10		1
		PA33.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections	Pathology	

			a)Septic arthritis & HIV infection b)Spirochaetal infection c)Skeletal Tuberculosis Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis		
		OR3.2	SGD: 11		1
			Describe and discuss aspiration of joints		
		OR3.3	SGD: 12		1
			Describe and discuss procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy		
4.	**SkeletalTuberculosis**				
		OR4.1	SGD: 13		1
			Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess		

			and caries spine		
5.	**Rheumatoid Arthritis and associatedinlammatorydisorders**				
		OR5.1	SGD: 14		1
			Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints		
6.	**Degenerativedisorders**				
		OR6.1	SGD:15		1
			Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)		
7.	**Metabolicbonedisorders**				
		OR7.1	SGD:16		1
		PA33.4	Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease	Pathology	

			Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone		
8.	**Poliomyelitis**				
		OR8.1	SGD:17		1
			Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post Polio Residual Paralysis		
9.	**CerebralPalsy**				
		OR9.1	SGD:18		1
			Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient		
10.	**BoneTumors**				
		OR10.1	SGD:19		1
		PA33.2	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign and malignant bone tumours and pathological fractures	Pathology	

			Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors		
11.	**Peripheralnerveinjuries**				
		OR11.1	SGD:20		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		
12.	**Congenitallesions**				
		OR12.1	SGD: 21		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. Torticollis		

		OR12.1	SGD: 22		1
			Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of: a. Congenital dislocation of Hip b. congenital talipes equino varus		
13.	**ProceduralSkills**				
		OR13.1	SGD: 23		1
			Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following: i. Above elbow plaster ii. Below knee plaster iii. Above knee plaster iv. Thomas splint v. splinting for long bone fractures vi. Strapping for shoulder and clavicle trauma		
		OR13.2	SGD: 24		1
			Participate as a member in team for Resuscitation of Polytrauma victim		

			by doing all of the following : (a)I.V. access central - peripheral (b)Bladder catheterization (c)Endotracheal intubation (d)Splintage		
14	**CounsellingSkills**	OR14.1	SGD: 25		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.bonetumours d.congenital disabilities		

Subject: Orthopaedics

Self-Directed Learning

MBBS phase III/I

Total Teaching hours : 5 hours

***These are suggested topics which can be modified at institutional level**

Sr. No.	TOPICS	COMPETENCIES	SUBTOPICS	AIT	HOURS
1.	**Counselling Skills**				
		OR14.3	SDL:1		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		
		OR14.2	SDL:2		2
			Describe the ability to counsel patients to obtain consent for various orthopedic procedures like limp amputation, permanent fixations etc..		

MBBS phase III/II

Total Teaching hours : 5 hours

***These are suggested topics which can be modified at institutional level**

Sr. No	TOPICS	COMPETENCIES	SUBTOPICS	HOURS
1.	**Musculoskeletal Infection**			
		OR3.1	SDL:1	3
			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	
2.	**Metabolic bone disorders**			
		OR7.1	SDL:2	2
			Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease	

Internal Assessment Orthopedics

Please refer General Surgery Syllabus (available on https://www.muhs.ac.in/upload/syllabus/Third%20MBBS%20General%20Surgery%20Syllabus%20030621.pdf) for details internal assessment in orthopedics.

Format / Skeleton of question paper for University

Please refer General Surgery Syllabus (available on https://www.muhs.ac.in/upload/syllabus/Third%20MBBS%20General%20Surgery%20Syllabus%20030621.pdf) for details question paper for university in orthopedics.

Name of the Institute

Department of Orthopaedics

Journal

Name of the Student: _____

Roll Number: _____

Batch: _____

Address: _____

Mobile number: _____

Email id: _____

Sayings of the great:

To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.

-Sir William Osler

The good physician treats the disease, the great physician treats the patient who has the disease.

-Sir William Osler

Observe, record, tabulate, and communicate. Use your five senses. Learn to see, learn to hear, learn to feel, learn to smell and know that by practice alone you can become expert.

-Sir William Osler

INDEX

Clinical Posting Completion Certificate

This is to certify that the candidateMr./Ms. _____ Registration no. _____admitted in the year _____in the _____ _____ Medical College has satisfactorily completed / has not completed all assignments / requirements/ posting mentioned in this journal and journal for final MBBS (II/III-I/III-II) in Orthopaedics during the period from .....to…… She / He is / is not eligible to appear for the summative (University) assessment as on the date given below.

Signature of Head of Department
Date

GENERAL INSTRUCTIONS

1) The journal is a record of the academic / co-curricular activities of the designated student, who would be responsible for maintaining his/her journal.

2) The student is responsible for getting the entries in the journal verified by the Faculty in charge regularly.

3) Entries in the journal will reflect the activities undertaken in the department& have to be scrutinized by the Head of the concerned department.

4) The journal is a record of various activities by the student like:
- Overall participation &performance
- Attendance
- Participation in sessions
- Record of completion of pre-determined activities.
- Acquisition of selected competencies

5) The journal is the record of work done by the candidate in that department / specialty and should be verified by the college before submitting the application of the students for the University examination.

6)*Proposed number of case records should be mentioned in the journal-:

Phase 2- 1st clinical posting (2 weeks) = 2 Orthopaedics cases + 1 Follow-up cases + OT record sheet minimum 3 cases (2 major and 1 minor) + Asepsis, Basic bandaging and dressing skill performed independently and to get it certified

Phase3- 2ndclinicalposting (4 weeks) = 4Orthopaedics cases+ 2follow-up cases + OT record sheet minimum 4 cases (2 major and 2 minor) + Basic splinting and slab application skill performed independently and to get it certified

Phase 4- 3rd Clinical Posting (2 weeks) = 4 Orthopaedics cases + 2 follow-up cases + OT record sheet minimum 4 cases (2 major and 2 minor) + Basic suturing, aseptic joint aspiration skill to be performed independently and to get it certified.

POSTING CERTIFICATE

Name: - Year of Admission: -

Year of appearing for Final M.B.B.S _____

TERM	From	To	Absent days	Case Histories Written	Remark	Signature Of Unit Head
Orthopaedics (II Phase) (2 weeks)						
Orthopaedics (III Phase – Part I) (4 weeks)						
Orthopaedics (III Phase – Part II) (2 weeks)						

N.B: -

1. Students must get the signature of the Unit In charge when posting is completed.
2. This certificate must be submitted before every internal assessment & Preliminary examination.
3. Completed record is mandatory for appearing for the Final Examination.

Template for Clinical Cases and Operative Notes		
Name of Patient	Age/Sex	Ward no.
MRD No	Head of the Unit	
Occupation		
Religion		
Address		
Date of admission		Date of Discharge
Chief complaints		
HOPI/ODP		

Past H/O

Personal

H/O

Family

H/O

Menstrual History in females

Obstetrical History in females

General examination

Built &
Nourishment
Level of
consciousness
Temperature.

Pulse rate
Respiratory
rate Blood
Pressure
Pallor/ cyanosis/clubbing/oedema/Lymphadenopathy/ Icterus

Local examination:

Inspection

Palpation

Movements

Measurements

Systemic Examination:

CV

S

RS

CN

S

PA

Provisional

Diagnosis

Differential

Diagnosis

Investigations

Hematological

Biochemical

Radiological

Xray
-
USG
- CT
-
MRI
-

Final Diagnosis

Treatment-Plan

Pre-operative Workup

Template for Operative Notes

Date: - Time: - Surgeon: -

Indication And operation: The working Diagnosis on which the procedure was based and the name of the operation.

Type of Anesthesia: -

Position of patient: - Describe the position and precautions taken to avoid complications.

Incision: - Name the incision, shape and length including any extensile exposure. A drawing may be useful.

Findings: Describe what was found. List structures identified and protected.

Procedure: Report what was exactly done. Describe prosthetics or special instruments/ implants used.

Closure: Washout, Hemostasis and drains, Method used for closure and Dressing

Post-operative care: Clear instructions with frequency on (a) general observations, (b) Checks on function, (c) Wound care, (d) removal of drains, (e) Start of mobilization, (f) removal of stitches, (g) discharge, (h) follow up.

Complications: List of potential complications and actions to be taken under a 'What If' list

Specimen sent for Histopathology Examination: Yes/No

Histopathology report:

Daily progress note:

Post-Op Progress Report -

(To be filled everyday in serious cases and every third day in other. Mention observations pertaining to a case, any special investigations done and daily treatment administered)

Day (Post-op)	Gen. condition (Appearance, Pulse, BP, Temp Chest)	Fluid intake	Fluid Output			Complications- If any and their treatment and investigation
			Urine	Suction	Others	

Condition of Patient on discharge: -

Advices on discharge: -

Reflection by students in max. 200 words: -
(Write your overall impression of case at the time of discharge or when you leave the case)

Feedback by Faculty –

Signature by Student and Faculty: -

Operative Notes

Date: - Time: -

Surgeon: -

Indication And operation:

Type of Anesthesia: -

Position of patient: -

Incision: -

Findings:

Procedure:

Closure:

Post-operative care

Complications:

Specimen sent for Histopathology Examination: Yes/No

Histopathology report:

Progress Report -

(To be filled everyday in serious cases and every third day in other. Mention observations pertaining to a case, any special investigations done and daily treatment administered)

Day (Post-op)	Gen. condition (Appearance, Pulse, BP, Temp Chest)	Fluid intake	Fluid Output			Complications- If any and their treatment and investigation
			Urine	Suction	Others	

Condition of Patient on discharge: -

Advices on discharge: -

PHASE-II INDEX OF THE CASE HISTORIES OF
ORTHOPAEDICS CASES AND FOLLOW UP CASES
(minimum 2 Orthopaedics cases + 1 Follow-up cases)

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						

Case 1:

Case 2:

Case 3:

Case 4:

Case 5:

Case 6:

INDEX OF THE OPERATIVE PROCEDURES
PHASE II
[OT record sheet minimum 3 cases (2 major and 1 minor) +Asepsis, Basic bandaging and dressing skills performed independently.]

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						

Case 7:

Case 9:

Case 1:

Case 4:

PHASE-III/I INDEX OF THE CASE HISTORIES OF ORTHOPAEDICS CASES AND FOLLOW UP CASES
(minimum 4 Orthopaedics cases+ 2 follow-up cases)

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						

Case 1:

Case 8:

Case 3:

Case 2:

Case 4:

Case 6:

Case 8:

INDEX OF THE OPERATIVE PROCEDURES
PHASE III/I
[OT record sheet minimum 4 cases (2 major and 4 minor) + Basic splinting and slab application skill performed independently]

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						

Case 1:

Case 3:

Case 5:

Case 7:

Case 9:

PHASE-III/II INDEX OF THE CASE HISTORIES OF ORTHOPAEDICS CASES AND FOLLOW UP CASES

[minimum 4 Orthopaedics cases + 2 follow-up cases]

Sr. No	Name of The Patient	Date	Diagnosis	Ward no.	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						
6.						
7.						

Case 1:

Case 4:

Case 6:

Case 8:

Case 5:

Case 6:

Case 7:

INDEX OF THE OPERATIVE PROCEDURES

PHASE III/II

[OT record sheet minimum 4 cases (2 major and 2 minor) + Basic suturing, aseptic joint aspiration skill, early management of trauma skills & demonstrates trauma life support]

Sr. no.	Name of the patient	Date	Diagnosis	Operative Procedures	Page No.	Signature of Faculty
1.						
2.						
3.						
4.						
5.						

Case 1:

Case 2:

Case

Case

Case

Name of the Institute

LOG BOOK

DEPARTMENT OF ORTHOPAEDICS

CONTENTS

LOGBOOK CERTIFICATE

This is to certify that this logbook is the bonafide record of Mr. / Ms. ..... Roll No.……..Admission Year ……..……., of the Department of Orthopaedics at .....Medical College.

The logbook is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

Head of DepartmentofOrthopaedics

Signature with Date

BIODATA OF THE CANDIDATE

PHOTO

Name of the student:

Name of the course: MBBS

Date of birth:

Father's / Guardian's name:

Mother's name:

Blood group:

Permanent Address: Temporary Address:

…… ……

…….. ……..

Student's contact no:

Father's/ Guardian's contact no:

Student's Email id:

Father's/ Guardian's Email id:

Date: Candidates Signature: ……...

GENERAL INSTRUCTIONS

1) The logbook is a record of the academic / non-academic activities of the student. Each Medical student is responsible for maintaining their logbook.

2) This logbook is prepared as per the guidelines of NMC for implementation of Competency Based Curriculum for 4THProfessional MBBS students in the subject of Orthopaedics.

3) Students are instructed to keep their logbook entries up to date. It is the responsibility of the student to enter their activity in respective pages & get them duly signed by the supervising faculty.

4) Entries in the logbook will be in accordance with activities done in the department & have to be scrutinized by the Head of the department.

5) The logbook assessment will be based on multiple factors like
   - Overall presentation
   - Active participation in the sessions
   - Quality of write up of reflections.
   - Timely completions

- Attendance

6) The logbook shall be kept as record work of the candidate for the department & be submitted to department as a bonafide record of the candidate before appearing for the University examination.

NOTE:

1. A **clear record** of all components that add to the internal assessment marks needs to be maintained by the institution and retained by them for at least **2 years** after passing of the examination. Institutions may be asked to provide these details by the University as and when required.

The contents in the logbook are suggested guidelines. The institutions can make **necessary changes as per the needs.**

ATTENDANCE

Every candidate should have attendance not less than 75% of the total classes conducted in theory, practical and clinical jointly in each calendar year calculated from the date of commencement of the term to the last working day as notified by the University in each of the subjects prescribed to be eligible to appear for the university examinations.

For appearing at the University Examination, student should have minimum 75% attendance in each subject.

A candidate lacking in the prescribed attendance in any subject(s) should not be permitted to appear for the examination in that subject(s)

Students cannot appear in part or separately in individual subjects during the first appearance at the Professional examination.

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

Self-Directed Learning, Seminars, Tutorials, Projects, Quizzes, extracurricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase III/I	Phase III/II	Signature of Teacher

Reflection (minimum 200 words) – 1
Date :

TOPIC:

Reflection (minimum 200 words) – 2
Date :

TOPIC:

LOGBOOK CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Competency # addressed	Name of Activity
OR1.1	Describe and discuss the Principles of pre-hospital care and Casuality management of a trauma victim including principles of triage
OR1.2	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock
OR1.3	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries
OR1.4	Describe and discuss the Principles of management of soft tissue injuries
OR1.5	Describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip
OR2.6	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius
OR2.7	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability
OR2.8	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient
OR2.11	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of (a) Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome
OR2.12	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication
OR2.16	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection
OR4.1	Describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine
OR7.1	Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease
OR8.1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post Polio Residual Paralysis

OR10.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign and malignant bone tumours and pathological fractures

Integration	
Anatomy	
AN10.12	Describe and demonstrate Shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy
AN18.6	Describe knee joint injuries with its applied anatomy
Pathology	
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis
PA33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of metastases of bone tumors
Microbiology	
MI4.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections.

LOGBOOK PSYCHOMOTOR / PERFORMANCE SKILLS:

Skills can be assessed by objective structured clinical assessment with checklist, Global Rating Scale, Simulated patients as per the institutional preference.

Colleges are instructed prepare modules for skill training as per NMC guidelines.

Module 5 Skill Training.

LIST OF COMPETENCIES

Competency # addressed	Name of Activity
OR1.6	Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation
OR3.2	Participate as a member in team for aspiration of joints under supervision.
OR3.3	Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy
OR13.1	Participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following: i. Above elbow plaster ii. Below knee plaster iii. Above knee plaster iv. Thomas splint v. splinting for long bone fractures vi. Strapping for shoulder and clavicle trauma
OR13.2	Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following : (a) I.V. access central - peripheral (b) Bladder catheterization (c) Endotracheal intubation (d) Splintage

LOGBOOK FOR AETCOM SKILLS

Counselling for Investigation, Treatment, Prognosis, Blood donation, Organ Donation, Breaking Bad news. All types of consent. Medicolegal aspects and Ethics, Empathy and professionalism as per the Phase of the MBBS. Include cases of Allied branches also.

Competency to be assessed during Clinical postings and /or small group discussions.

LIST OF COMPETENCIES FOR AETCOM

Competency addressed	**Name of Activity**
OR14.1	Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like a. fractures with disabilities b. fractures that require prolonged bed stay c. bone tumours d. congenital disabilities
OR14.2	Demonstrate the ability to counsel patients to obtain consent for various orthopedic procedures like limp amputation, permanent fixations etc..
OR14.3	Demonstrate the ability to convince the patient for referral to a higher centre in various orthopedic illnesses, based on the detection of warning signals and need for sophisticated management.

PHASE II-clinical (minimum three assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd, casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B)expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE II-Psychomotor

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B)expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
6.										
7.										
8.										
9.										
10.										
11.										
12.										

PHASE II- AetCom(Minimum three assessments)

Sr. No	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I -clinical (Minimum three assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part I-Psychomotor skill

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
Sr. No.	**Competency # addressed**	**Name of Activity**	**Site Ward, skill lab, opd , casualty ,**	**Date completed**	**Attempt at activity First (F) Repeat (R) Remedial (Re)**	**Rating Below (B)expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score**	**Decision of faculty Completed (C) Repeat (R) Remedial (Re)**	**Initial of faculty**	**Feedback received Initial of Learner**	**Method of assessment and Score**
6.										
7.										
8.										
9.										
10.										
11.										
12.										

PHASE III Part I - AetCom (Minimum three assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part II -clinical (minimum three assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B)expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										

PHASE III Part II -Psychomotor skill

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
Sr. No.	**Competency # addressed**	**Name of Activity**	**Site Ward, skill lab, opd , casualty,**	**Date completed**	**Attempt at activity First (F) Repeat (R) Remedial (Re)**	**Rating Below (B) expectations Meets (M) expectations Exceeds (E) expectations OR Numerical Score**	**Decision of faculty Completed (C) Repeat (R) Remedial (Re)**	**Initial of faculty**	**Feedback received Initial of Learner**	**Method of assessment and Score**
6.										
7.										
8.										
9.										
10.										
11.										
12.										

PHASE III Part II - AetCom (Minimum three assessments)

Sr. No.	Competency # addressed	Name of Activity	Site Ward, skill lab, opd , casualty ,	Date completed	Attempt at activity First (F) Repeat (R) Remedial (Re)	Rating Below (B) expectations Meets (M)expectations Exceeds (E) expectations OR Numerical Score	Decision of faculty Completed (C) Repeat (R) Remedial (Re)	Initial of faculty	Feedback received Initial of Learner	Method of assessment and Score
1.										
2.										
3.										
4.										
5.										
6.										
7.										

REFLECTION ON AETCOM MODULE For PHASE III/II

Module 4.5 - Case studies in ethics: The doctor- industry relationship

Competency addressed	*Level*
Identify and discuss amd defend medico-legal, socio-cultural, professional and ethical issues in physician- industry relationship	*KH*

Reflection (minimum 200 words) -1
Date:

Signature of Teacher-in-charge

ANNEXURE 2:

AETCOM skills can be assessed by use of Kalamazoo consensus.

Criteria
Builds relationship
Opens the discussion
Gathers information
Understands the patient's perspective
Shares information
Manages flow
Overall rating
Signature of teacher

Rating 1-3 - Poor, 4 -6 Satisfactory, 6 -10 Superior

Communication skills rating scale adapted from Kalamazoo consensus statement.

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: III-II MBBS Subject: Orthopaedics

Paper	Section	Topics
II (General Surgery)	A	MCQs on all topics of the paper II of general surgery will include **orthopaedics**
	C	Skeletal Trauma, Poly trauma
		Fractures
		MusculoskeletalInfection
		SkeletalTuberculosis
		Rheumatoid Arthritis and associated inflammatory disorders
		Degenerative disorders
		Metabolicbonedisorders
		Poliomyelitis
		CerebralPalsy
		BoneTumors
		Peripheralnerveinjuries
		Congenitallesions

Competency Based Medical Education

Year: Second/ III-I/ III-II MBBS

Subject: Orthopaedics

Learning Resource Material

Sr.no.	Author	Title of book/ Material	Publisher
		TEXTBOOK	
1.	Maheshwari &Mhaskar	Essential Orthopaedics	JayPee Brothers Medical Publishers
2.	Anil Jain	Turek'sOrthopaedics Principles & their Applications	Wolters Kluwer
3.	Anand Thakur	The Elements of Fracture Fixation	Elsevier
4.	John Ebnezar	Textbook of Orthopedics	JayPee Brothers Medical Publishers
5.	Ashley Blom, David Warwick, Michael Whitehouse	Apley& Solomon's System of Orthopaedics& Trauma	Productivity Press
6.	Kenneth Egol, Kenneth Koval, Joseph Zuckerman	Handbook of Fractures	Wolters Kluwer
		CLINICAL ORTHOPAEDICS	
1.	S Das	A Manual on Clinical Surgery 9th Edition 2019	DAS Publications
2.	Vivek Pandey, Hitesh Shah	Musculoskeletal Examination	JayPee Brothers Medical Publishers
		REFERENCES	
1.	Frederick Azar, James Beaty	Campbell's Operative Orthopaedics	Elsevier
2.	Charles Court-Brown, James Heckman, Margaret McQueen, William Ricci, Paul Tornetta III	Rockwood & Green's Fractures in Adults and Children	Lippincott Williams and Wilkins
3.	Shrikant Gore	Orthopaedics for Undergraduates as per M.C. I's. Competency based curriculum	Maharudra Mangnale Muktrang Prakashan ,

	AS3.4	Choose and interpret appropriate testing for patients undergoing Surgery	Bedside Cliinc			General Surgery
	AS3.5	Determine the readiness for General Surgery in a patient based on the preoperative evaluation	Bedside Cliinc			General Surgery
	AS3.6	Choose and write a prescription for appropriate premedications for patients undergoing surgery	Bedside Cliinc		Pharmacology	
2	**General Anaesthesia**					
	AS4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia	Bedside Cliinc		Pharmacology	
	AS4.4	Observe and describe the principles and the steps/ techniques in maintenance of vital organ functions in patients undergoing surgical procedures	Bedside Cliinc			
	AS4.5	Observe and describe the principles and the steps/ techniques in monitoring patients during anaesthesia	Bedside Cliinc			
3	**Regional Anaesthesia**					
	AS5.1	Enumerate the indications for and describe the principles of regional anaesthesia (including spinal, epidural and combined)	Bedside Cliinc			

4	**Regional Anaesthesia**					
	AS5.6	Observe and describe the principles and steps/ techniques involved in common blocks used in surgery (including brachial plexus blocks)	Bedside Cliinc			General Surgery
5	**Post-anaesthesia Recovery**					
	AS6.1	Describe the principles of monitoring and resuscitation in the recovery room	Bedside Cliinc			

	AS6.2	Observe and enumerate the contents of the crash cart and describe the equipment used in the recovery room	Bedside Cliinc			
6	**Intensive Care Management**					
	AS7.3	Observe and describe the management of an unconscious patient	Bedside Cliinc		Physiology	General Medicine
	AS7.5	Observe and describe the principles of monitoring in an ICU	Bedside Cliinc			General Medicine
7	**Fluids**					
	AS9.3	Describe the principles of fluid therapy in the preoperative period	Bedside Cliinc			General Surgery
	AS9.4	Enumerate blood products and describe the use of blood products in the preoperative period	Bedside Cliinc		Pathology	General Surgery
8	**Patient Safety**					
	AS10.3	Describe the role of communication in patient safety	Bedside Cliinc		AETCOM	General Surgery
	AS10.4	Define and describe common medical and medication errors in anaesthesia	Bedside Cliinc		Pharmacology	General Medicine
9	**Cardiopulmonary Resuscitation**					
	AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Basic Life Support in adults, children and neonates	DOAP Session			General Medicine, Pediatrics
	AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Advanced Life Support in adults and children	DOAP Session			General Medicine

D. UG curriculum for small group teaching total no. of classes (hours): 10 – (30 Competencies)

Sr. No.	Number of Competencies	Competencies	Suggested Teaching learning method	Hour	Vertical integration	Horizontal integration
1	**Cardiopulmonary Resuscitation**		Small Group Discussion, DOAP Session	1		General Medicine, Paediatrics
	AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Basic Life Support in adults, children and neonates				
	AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Advanced Life Support in adults and children	Small Group Discussion, DOAP Session			General Medicine, Paediatrics
2	**Preoperative evaluation and medication**		DOAP Session	1		General Surgery, General Medicine
	AS3.2	Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation				
	AS3.3	Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery	DOAP Session			General Surgery
	AS3.4	Choose and interpret appropriate testing for patients undergoing Surgery	Small Group Discussion			General Surgery
	AS3.5	Determine the readiness for General Surgery in a patient based on the preoperative evaluation	Small Group Discussion			General Surgery
	AS3.6	Choose and write a prescription for appropriate premedications for patients undergoing surgery	Small Group Discussion		Pharmacology	
3	**General Anaesthesia**		Small Group Discussion	1	Pharmacology	
	AS4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia				

	AS4.4	Observe and describe the principles and the steps/	Small Group			

		techniques in maintenance of vital organ functions in patients undergoing surgical procedures	Discussion			
	AS4.5	Observe and describe the principles and the steps/ techniques in monitoring patients during anaesthesia	Small Group Discussion			
	AS4.6	Observe and describe the principles and the steps/ techniques involved in day care anesthesia	Small Group Discussion			
	AS4.7	Observe and describe the principles and the steps/ techniques involved in anaesthesia outside the operating room	Small Group Discussion			
4	**Regional Anaesthesia**		Small Group Discussion, DOAP Session	1	Human Anatomy	
	AS5.3	Observe and describe the principles and steps/ techniques involved in peripheral nerve blocks				
	AS5.4	Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anesthesia	Small Group Discussion		Pharmacology	
	AS5.5	Observe and describe the principles and steps/ techniques involved in caudal epidural in adults and children	Small Group Discussion, DOAP Session			
	AS5.6	Observe and describe the principles and steps/ techniques involved in common blocks used in surgery (including brachial plexus blocks)	Small Group Discussion, DOAP Session			General Surgery
5	**Post-anaesthesia Recovery**		Small Group Discussion	1		
	AS6.1	Describe the principles of monitoring and resuscitation in the recovery room				
	AS6.2	Observe and enumerate the contents of the crash cart and describe the equipment used in the recovery room	Small Group Discussion			

6	**Intensive Care Management**		Small Group Discussion	1		
	AS7.1	Visit, enumerate and describe the functions of an Intensive Care Unit				
	AS7.2	Enumerate and describe the criteria for admission and discharge of a patient to an ICU	Small Group Discussion			General Medicine
	AS7.3	Observe and describe the management of an unconscious patient	Small Group Discussion		Physiology	General Medicine
7	**Intensive Care Management**		Small Group Discussion	1	Physiology	General Medicine
	AS7.4	Observe and describe the basic setup process of a ventilator				
	AS7.5	Observe and describe the principles of monitoring in an ICU	Small Group Discussion			General Medicine
8	**Pain and its management**		Small Group Discussion, DOAP Session	1	Physiology	
	AS8.2	Elicit and determine the level, quality and quantity of pain and its tolerance in patient or surrogate				
9	**Fluids**		Small Group Discussion, DOAP Session	1		
	AS9.1	Establish intravenous access in a simulated environment				
	AS9.2	Establish central venous access in a simulated environment	Small Group Discussion, DOAP Session			
10	**Patient Safety**		Small Group Discussion			
	AS10.1	Enumerate the hazards of incorrect patient positioning				
	AS10.2	Enumerate the hazards encountered in the perioperative period and steps/techniques taken to prevent them	Small Group Discussion			
	AS10.3	Describe the role of communication in patient safety	Small Group Discussion		AETCOM	General Surgery

	AS10.4	Define and describe common medical and medication errors in anaesthesia	Small Group Discussion		Pharmacology	General Medicine

Dividing Competencies into
Lectures and Small Group Discussion/Bedside Clinics/DOAP Session

Sr. No.	Competency No.	Total	Dividing Competencies into			
			Lectures	Total	Small Group Discussion/Bedside Clinics/DOAP Session	Total
1	AS1.1, AS1.2, AS1.3, AS1.4	4	AS1.1, AS1.2, AS1.3, AS1.4	4		
2	AS2.1, AS2.2	2			AS2.1, AS2.2	2
3	AS3.1, AS3.2, AS3.3, AS3.4, AS3.5, AS3.6	6	AS3.1	1	AS3.2, AS3.3, AS3.4, AS3.5, AS3.6	5
4	AS4.1, AS4.2, AS4.3, AS4.4, AS4.5, AS4.6, AS4.7	7	AS4.1, AS4.2	2	AS4.3, AS4.4, AS4.5, AS4.6, AS4.7	5
5	AS5.1, AS5.2, AS5.3, AS5.4, AS5.5, AS5.6	6	AS5.1, AS5.2	2	AS5.3, AS5.4, AS5.5, AS5.6	4
6	AS6.1, AS6.2, AS6.3	3	AS6.3	1	AS6.1, AS6.2	2
7	AS7.1, AS7.2, AS7.3, AS7.4, AS7.5	5			AS7.1, AS7.2, AS7.3	3
					AS7.4, AS7.5	2
8	AS8.1, AS8.2, AS8.3,AS8.4, AS8.5	5	AS8.1, AS8.3	2	AS8.2	1
			AS8.4, AS8.5	2		
9	AS9.1, AS9.2, AS9.3, AS9.4	4	AS9.3, AS9..4	2	AS9.1, AS9.2	2
10	AS10.1, AS10.2, AS10.3, AS10.4	4			AS10.1, AS10.2, AS10.3, AS10.4	4
		46		16		30

Competency Based Medical Education

Year: III-I MBBS

Subject: **Anaesthesiology**

LEARNING RESOURCE MATERIAL

Sr. No.	Author	Title of book/ Material	Publisher
1.	John F. Butterworth, John D. Wasnick, David C. Mackey	Morgan & Mikhail's Clinical Anesthesiology	Lange
2.	R. S. Atkinson	Lee's Synopsis of Anaesthesia	Elsevier
3.	Ajay Yadav	Short Textbook of Anesthesia	Jaypee, The Health Sciences Publisher - London, New Delhi, Panama
4.	Ronald D. Miller	Miller's Anesthesia	

INTERNAL ASSESSMENT EXAM IN ANASTHESIOLOGY

End of the posting examto be conducted for 25 marks and to be submitted to department of General Surgery during respective phase of teaching. Refer to surgery Syllabus for details.

Dentistry

For theory Competencies included in Surgery Syllabus

Clinical Postings-3 days

Day	Competency no.	Topic	Hours
1	DE1.3, DE1.5, DE2.3, DE2.5, DE3.3, DE3.4	Identify dental caries, malocclusion, complete compliment of teeth and identify missing teeth, counsel the patients with respect to correction of malocclusion and the role it might have on oral health specifically on the TMJ, counsel the patients with respect to oral hygiene, diet and the direct bearing on systemic health and vice versa, Counsel the patients on the importance of restoring missing teeth with respect to benefits on oral and systemic hygiene.	3 hrs
2	DE4.3, DE4.4	Identify potential precancerous/cancerous lesions, Counsel patients about oral cancers with respect to tobacco smoking, alcohol and other causative factors.	3 hrs
3	DE5.3, DE5.4, DE5.5	Identify periodontal disease, discuss the role of periodontal disease as a focus of sepsis, counsel the patients with respect to oral hygiene, diet and the direct bearing on systemic health and vice versa	3 hrs

RADIODIAGNOSIS

Course Content

Second / III-I/ III-II MBBS

Subject : Radio Diagnosis Theory / Practical

(Based on Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 2 / 3; page nos. 161 to166)

1. Total Teaching hours :20

A. Lectures (hours): 10 B. Self directed learning (hours) : 2

C. Small group teachings/tutorials/Integrated teaching/Practicals (hours)**: 8** hours

D. Clinical Postings (hours): 2 weeks (3hours /day x 12 days Monday to Saturday

Term I/II

A. Lectures/ Large Group Teachings Total Number of Competencies: 13

In institutes where radiotherapy facility is available 2 hours will be allotted to Radiotherapy department. Time Table in these institutes will be prepared by Radio Diagnosis and Radiotherapy department in joint collaboration

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
LEC 1	RD1.1	Define radiation and the interaction of radiation and importance of radiation protection	Lecture, Demonstration	1		
	RD1.2	Describe the evolution of Radiodiagnosis. Identify various radiological equipmentsIn the current era				
LEC 2	RD1.3	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and	Lecture, Demonstration	1		ENT

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		interpret findings in common conditions pertaining to disorder of ENT				
LEC 3	RD1.4	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining todisorder in Ob &Gy	Lecture, Demonstration	1		Obstetrics &Gynaecology
	RD1.12	Describe the effects of radiation in pregnancy and the methods of prevention/ minimization of radiation exposure				
	RD1.13	Describe the components of the PC & PNDT Act and its medicolegal implications				
LEC 4	RD1.5	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in internal medicine				Medicine
LEC 5	RD1.6	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to				Surgery

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		disorderls in surgery				
LEC 6	RD1.7	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in Pediatrics				Pediatrics
LEC 7	RD1.8	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to common malignancies				All clinical departments
LEC 8	RD1.9	Describe the role of Interventional Radiology in common clinical conditions				All clinical departments
LEC 9	RD1.10	Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments				All clinical departments
LEC 10	RD1.11	Describe preparation of patient for common imaging procedures	Lecture, Demonstration			All clinical departments
B – Self Directed Learning 2 hours						

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
Serial No.	**Competency No.**	**Topics & Sub Topics**	**Suggested Teaching Method**	**Hours**	**Vertical Integration**	**Horizontal Integration**
SDL 1	RD1.5	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in internal medicine	Small group discussion, Quiz, etc	1		All clinical departments
	RD1.10	Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments	Small group discussion, Quiz, etc			
SDL 2	RD1.4	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining todisorder in Ob &Gy	Small group discussion, Quiz, etc	1		Obstetrics &Gynaecology
	RD1.13	Describe the components of the PC & PNDT Act and its medicolegal implications				
	RD1.1	Define radiation and the interaction of radiation and importance of radiation protection				
C	C. **Small group teachings/tutorials/Integrated teaching/Practicals(hours): 8 hours**					
Serial No.	**Competency No.**	**Topics & Sub**	**Suggested**	**Hours**	**Vertical**	**Horizontal**

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		Topics	**Teaching Method**		**Integration**	**Integration**
SGT 1	AN20.6, AN25.7, AN43.7, AN43.9, AN51.1, AN51.2, IM7.18	Identify anatomical parts on radiographic images	Lecture/ Small group discussion	**3**		**Anatomy & All Clinical Departments**
SGT 2	AN25.8, AN54.2	Role of Barium Studies in gastro Intestinal Tract Evaluation	Lecture/ Small group discussion	3		Medicine, Surgery
SGT 3	FM1.9	Medicolegal aspects in Radiology	Lecture/ Small group discussion	1		Forensic Medicine
SGT 4	IM1.19, IM3.7, IM3.11, M13.12, PE34.8, PE23.13	Role of Radiology in Chest Diseases	Lecture/ Small group discussion	1		Medicine, Pediatrics
SGT 5	SU25.3	Role of Radiology in Breast Diseases	Lecture/ Small group discussion	1		Surgery
SGT 6	PE28.17	Role of Radiology in Ear Nose Throat and Eye Diseases	Lecture/ Small group discussion	1		ENT &Opthalmology
SGT 7	IM10.19, PE21.12, IM10.19, AN54.2	Role of Radiology in Diseases of the Genito Urinary System	Lecture/ Small group discussion	1		Medicine
SGT 8	IM19.7, PE30.23, IM6.12, AN43.7, AN43.8, AN43.9	Role of Radiology in Central Nervous System	Lecture/ Small group discussion	1		Medicine, Surgery, Pediatrics,

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		Diseases				
D	**D.** Clinical Postings(hours): 2 weeks (3hours /day x 12 days Monday to Saturday. **In institutes where radiotherapy facility is available 6 hours will be allotted to Radiotherapy department. Time Table in these institutes will be prepared by Radio Diagnosis and Radiotherapy department in joint collaboration**					
CP 1	RD1.1 RD1.2	Introduction to All modalities under Radiodiagnosis and Radiation Protection.	Lecture, Demonstration, Small group teaching	**1**		
CP 2	RD1.5	Role of Radiology in Chest Conditions lungs and heart	Lecture, Demonstration, Small group teaching			Medicine and Pediatrics
CP 3	RD1.6	Role of Radiology in Abdominal Conditions hepatobilary system and Gastrointestinal System	Lecture, Demonstration, Small group teaching	3		Surgery
CP 4	RD1.6	Role of Radiology in Abdominal Conditions - Genitourinary system	Lecture, Demonstration, Small group teaching	3		Surgery
CP 5	RD1.4 & RD 1.5	Role of Radiology in Obstetrics and Gynaecolgy	Demonstration, Small group teaching	3		Obstetrics & Gynecology
CP 6	RD1.6	Role of	Demonstration,	3		Orthopedics

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		Radiology in Musculoskeletal system	Small group teaching			
CP 7	RD1.6	Role of Radiology in Diseases of Central Nervous System	Demonstration, Small group teaching	3		All clinical Branches
CP 8	RD1.2	Basic Principles of Computed Tomography	Demonstration, Small group teaching	**3**		
CP 9	RD1.2	Basic Principles of Magnetic Resonance Imaging	Demonstration, Small group teaching	**3**		
CP 10	RD1.1	Radiation Hazards and Radiation Protection	Demonstration, Small group teaching	3		
CP 11	RT	Radiotherapy related topics	Radiotherapy related topics	3		
CP 12	RT	Radiotherapy related topics	Radiotherapy related topics	3		

Learning Resource Material

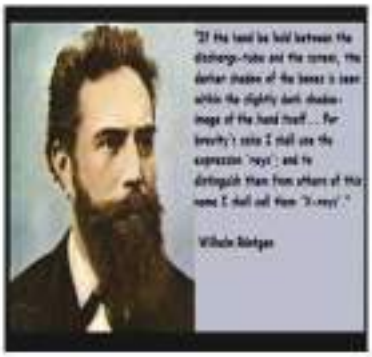
Sr.no.	Author	Title of book/ Material	Publisher
1	David Sutton	Text Book of Radiology and Medical Imaging for Medical Students Seventh Edition	Elseivier
2	David Sutton	Text Book of Radiology & Imaging Students Seventh Edition	Elseivier
3	Grainger Allison	Diagnostic Radiology	Elseivier

MUHS

Name of the Institute

LOG BOOK

DEPARTMENT OF RADIODIAGNOSIS



CONTENTS

RADIODIAGNOSIS LOGBOOK CERTIFICATE

This is to certify that this logbook is the bonafide record of Mr. / Ms..... Roll No…….. Admission Year …….……, of the Department of RadioDiagnosis at …….…… …….……. Medical College.

The logbook is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

Head of Department
Department of Radio Diagnosis
Signature with Date

INTERNAL ASSESSMENT EXAMINATION IN RADIODIAGNOSIS

End of the posting exam to be conducted for 25 marks and to be submitted to department of General Surgery during respective phase of teaching. Refer to Surgery Syllabus for details.

Self-Directed Learning: Seminars, Tutorials, Projects, Quizzes,

Extra-curricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase III/I	Signature of Teacher
1				
2				

Reflection (minimum 200 words) 1
Date:

TOPIC:

LOGBOOK CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Sr. No	Competencies Addressed	Name of the Activity
1	PE21.12	How will you interpret a KUB Report?
2	PE23.13	How will you report a Chest radiograph and rule out cardiomegaly?
3	PE23.16	How will you use the ECHO reports in management of case of Cardiac disease ?
4	PE30.23	How will you interpret CT scan and MRI Report?

Radiotherapy

For theory Competencies to be included in Surgery & Radiology Syllabus

Clinical Postings-3 days where ever department exists

BOOKS RECOMMENDED:

REFERENCE BOOKS:

1) Hardikar's Orthopaedics Operations Text and Atlas by- Shrinivas S. Shintre, Sharad M. Hardikar, Vijay M. Panchandikar

RADIODIAGNOSIS

Course Content

Second / III-I/ III-II MBBS

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Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
LEC 1	RD1.1	Define radiation and the interaction of radiation and importance of radiation protection	Lecture, Demonstration	1		
	RD1.2	Describe the evolution of Radiodiagnosis. Identify various radiological equipmentsIn the current era				
LEC 2	RD1.3	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and	Lecture, Demonstration	1		ENT

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		interpret findings in common conditions pertaining to disorder of ENT				
LEC 3	RD1.4	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining todisorder in Ob &Gy	Lecture, Demonstration	1		Obstetrics &Gynaecology
	RD1.12	Describe the effects of radiation in pregnancy and the methods of prevention/ minimization of radiation exposure				
	RD1.13	Describe the components of the PC & PNDT Act and its medicolegal implications				
LEC 4	RD1.5	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in internal medicine				Medicine
LEC 5	RD1.6	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to				Surgery

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		disorderls in surgery				
LEC 6	RD1.7	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to disorder in Pediatrics				Pediatrics
LEC 7	RD1.8	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining to common malignancies				All clinical departments
LEC 8	RD1.9	Describe the role of Interventional Radiology in common clinical conditions				All clinical departments
LEC 9	RD1.10	Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments				All clinical departments
LEC 10	RD1.11	Describe preparation of patient for common imaging procedures	Lecture, Demonstration			All clinical departments
B – Self Directed Learning 2 hours						

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
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	RD1.10	Describe the role of Emergency Radiology, miscellaneous & applied aspects, interaction with clinical departments	Small group discussion, Quiz, etc			
SDL 2	RD1.4	Enumerate indications for various common radiological investigations, choose the most appropriate and cost effective method and interpret findings in common conditions pertaining todisorder in Ob &Gy	Small group discussion, Quiz, etc	1		Obstetrics &Gynaecology
	RD1.13	Describe the components of the PC & PNDT Act and its medicolegal implications				
	RD1.1	Define radiation and the interaction of radiation and importance of radiation protection				
C	C. **Small group teachings/tutorials/Integrated teaching/Practicals(hours): 8 hours**					
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SGT 6	PE28.17	Role of Radiology in Ear Nose Throat and Eye Diseases	Lecture/ Small group discussion	1		ENT &Opthalmology
SGT 7	IM10.19, PE21.12, IM10.19, AN54.2	Role of Radiology in Diseases of the Genito Urinary System	Lecture/ Small group discussion	1		Medicine
SGT 8	IM19.7, PE30.23, IM6.12, AN43.7, AN43.8, AN43.9	Role of Radiology in Central Nervous System	Lecture/ Small group discussion	1		Medicine, Surgery, Pediatrics,

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
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D	**D.** Clinical Postings(hours): 2 weeks (3hours /day x 12 days Monday to Saturday. **In institutes where radiotherapy facility is available 6 hours will be allotted to Radiotherapy department. Time Table in these institutes will be prepared by Radio Diagnosis and Radiotherapy department in joint collaboration**					
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CP 2	RD1.5	Role of Radiology in Chest Conditions lungs and heart	Lecture, Demonstration, Small group teaching			Medicine and Pediatrics
CP 3	RD1.6	Role of Radiology in Abdominal Conditions hepatobilary system and Gastrointestinal System	Lecture, Demonstration, Small group teaching	3		Surgery
CP 4	RD1.6	Role of Radiology in Abdominal Conditions - Genitourinary system	Lecture, Demonstration, Small group teaching	3		Surgery
CP 5	RD1.4 & RD 1.5	Role of Radiology in Obstetrics and Gynaecolgy	Demonstration, Small group teaching	3		Obstetrics & Gynecology
CP 6	RD1.6	Role of	Demonstration,	3		Orthopedics

Serial No.	Competency Nos.	Topics & Subtopics	Suggested Teaching Method	Hours	Vertical Integration	Horizontal Integration
		Radiology in Musculoskeletal system	Small group teaching			
CP 7	RD1.6	Role of Radiology in Diseases of Central Nervous System	Demonstration, Small group teaching	3		All clinical Branches
CP 8	RD1.2	Basic Principles of Computed Tomography	Demonstration, Small group teaching	**3**		
CP 9	RD1.2	Basic Principles of Magnetic Resonance Imaging	Demonstration, Small group teaching	**3**		
CP 10	RD1.1	Radiation Hazards and Radiation Protection	Demonstration, Small group teaching	3		
CP 11	RT	Radiotherapy related topics	Radiotherapy related topics	3		
CP 12	RT	Radiotherapy related topics	Radiotherapy related topics	3		

Learning Resource Material

Sr.no.	Author	Title of book/ Material	Publisher
1	David Sutton	Text Book of Radiology and Medical Imaging for Medical Students Seventh Edition	Elseivier
2	David Sutton	Text Book of Radiology & Imaging Students Seventh Edition	Elseivier
3	Grainger Allison	Diagnostic Radiology	Elseivier

MUHS

Name of the Institute

LOG BOOK

DEPARTMENT OF RADIODIAGNOSIS

CONTENTS

RADIODIAGNOSIS LOGBOOK CERTIFICATE

This is to certify that this logbook is the bonafide record of Mr. / Ms..... Roll No…….. Admission Year ……., of the Department of RadioDiagnosis at …… ……. Medical College.

The logbook is as per the guidelines of Competency Based Undergraduate Medical Education Curriculum, Graduate Medical Regulation 2019.

He / She has satisfactorily attended/ completed all assignments mentioned in this logbook as per the guidelines prescribed by National Medical Commission.

Head of Department
Department of Radio Diagnosis
Signature with Date

INTERNAL ASSESSMENT EXAMINATION IN RADIODIAGNOSIS

Please refer General Surgery Syllabus (available on https://www.muhs.ac.in/upload/syllabus/Third%20MBBS%20General%20Surgery%20Syllabus%20030621.pdf) for details internal assessment in radio diagnosis.

Format / Skeleton of question paper for University

Please refer General Surgery Syllabus (available on https://www.muhs.ac.in/upload/syllabus/Third%20MBBS%20General%20Surgery%20Syllabus%20030621.pdf) for details question paper for university in radio diagnosis.

Self-Directed Learning: Seminars, Tutorials, Projects, Quizzes,

Extra-curricular activities

Sr. No.	Self- directed learning (Seminars, Tutorials, Projects, Quizzes, Extracurricular activities)	Date	Phase III/I	Signature of Teacher
1				
2				

Reflection (minimum 200 words) –1
Date:

TOPIC:

LOGBOOK CLINICAL SKILLS : LIST OF COMPETENCIES

Clinical skills can be assessed by case presentation, case-based discussion, objective structured clinical assessment the checklist, MiniCex, as per the institutional preference.

Sr. No	Competencies Addressed	Name of the Activity
1	PE21.12	How will you interpret a KUB Report?
2	PE23.13	How will you report a Chest radiograph and rule out cardiomegaly?
3	PE23.16	How will you use the ECHO reports in management of case of Cardiac disease ?
4	PE30.23	How will you interpret CT scan and MRI Report?

Radiotherapy

For theory Competencies to be included in Surgery & Radiology Syllabus

Clinical Postings-3 days where ever department exists

Course Content

(Based on Medical Council of India, **Attitude, Ethics & Communication(AETCOM) Competencies** for the Indian Medical Graduate, 2018)

Applicable for batch admitted in M.B.B.S Course from Academic Year 2019-20 & onwards

Attitude, Ethics & Communication(AETCOM) **Year: First MBBS**

Module No.	Topics & Subtopics	Assessment
1.1	**What does it mean to be a doctor ?**	Formative: with Internal Assessment examination as decided by respective dept. Summative: SAQ in Paper I : Human Anatomy
1.2	What does it mean to be a patient?	Formative: with Internal Assessment examination as decided by respective dept. Summative: SAQ in Paper I : Physiology
1.3	**Doctor – patient relationship**	Formative: with Internal Assessment examination as decided by respective dept. Summative: SAQ in Paper I : Physiology
1.4	The foundation of communication-1	Formative: with Internal Assessment examination as decided by respective dept. Summative: SAQ in Paper I : Biochemistry
1.5	The cadaver as our first teacher	Formative: with Internal Assessment examination as decided by respective dept. Summative: SAQ in Paper I : Human Anatomy