MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)
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COMPETENCY BASED MEDICAL EDUCATION

(CBME)

(with effect from 2024-2025 Batches)

Curriculum for

First M.B.B.S

Human Anatomy

Amended as per AC-51/2025, Dated 29/04/2025

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Amended History

1. Approved as per BOM 57/2019, [Resolution no. 3.1.1.13], Dated 26/04/2019.
2. Amended upto BOM 62/2020, [Resolution No 3.2.1.3.i], Dated 16/09/2020.
3. Amended upto BOM 63/2021, [Resolution No. 4.4.1.6], Dated 17/02/2021.
4. Amended upto AC-41/2021, [Resolution No. 4.1], [Resolution No. 4.3], [Resolution No. 4.4], [Resolution No. 4.8], [Resolution No. 4.9], [Resolution No. 4.10]; Dated 27/08/2021
5. Amended upto AC-42/2022, [Resolution No. 3.4], [Resolution No. 3.6], [Resolution No. 3. 19]; dated 26/04/2022 (Incorporated at the end of syllabus).
6. Amended upto AC-46/2023, [Resolution No. 5.2], Dated 28/04/203.
7. Amended upto AC-48/2023, [Resolution No. 5.4], [Resolution No. 5.6], [Resolution No. 5.8], [Resolution No. 5.10],[Resolution No. 5.11], Dated 12/12/2023.
8. Amended upto AC-50/2024, [Resolution No. 4.1], [Resolution No. 4.2], [Resolution No. 4.3], [Resolution No. 4.4],[Resolution No. 4.5], [Resolution No. 4.6], [Resolution No. 4.7], [Resolution No. 4.8], [Resolution No. 4.9], [Resolution No. 4.10], [Resolution No. 4.15], [Resolution No. 4.16] Dated 27/11/2024.
9. Amended as per AC-51/2025, [Resolution No. 4.9 (Annexure-31)]; [Resolution No. 4.10 (Annexure-32)]; [Resolution No. 4.11 (Annexure-33)]; Dated 29/04/2025.

Resolution No. 4.4 of AC-41/2021: Resolved to include "MGMIHS Graduate Attributes" in 1st MBBS Anatomy Physiology and Biochemistry syllabi and cover them in the foundation course, Journals & logbooks, with effect from the batch admitted in 2021-22 onwards

Annexure-23 of AC-41-2021

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

GRADUATE ATTRIBUTES

A student graduating from MGM Institute of Health Sciences, Navi Mumbai, should attain the following attributes:

1. Dynamic professionalism
2. Exemplary leadership
3. Effective communication skills
4. Scholarly attitude
5. Element of critical thinking
6. Enthusiasm for research
7. Social commitment
8. Global competencies

Dynamic professionalism:

Abide by professional codes of conduct, demonstrate high personal standards of behaviour, be considerate, trustworthy and honest, act with integrity. Apply effective strategies to maintain their own physical, psychological, social and spiritual well-being. Should be able to apply profession-specific knowledge, clinical skills and professional attitudes in implementation of evidence-based protocols for optimal outcome.

Exemplary leadership:

Focuses on the qualities required to effectively manage a career, as a practitioner or academician , work effectively within a system aiming at quality improvement, fostering a spirit of team-building.

Effective communication skills:

Communicates effectively and humanely with all stakeholders, their families, colleagues, through a variety of means, gathers and conveys information respectfully, in a culturally acceptable and dignified manner.

Scholarly attitude:

Demonstrates a lifelong commitment to reflective learning, strives to maintain professional competence. Committed to learn, disseminate, apply and translate knowledge

Element of critical thinking:

Will develop a habit of inquiry, use the knowledge gained for dealing with complex situations foster an ambience conducive for effective learning with constructive criticism, exercise critical judgement in evaluating sources of information.

Enthusiasm for research:

Develop intellectual curiosity and embark upon opportunities to develop research capabilities. Imbibe the basic principles of research methodology and engage in ethical research.

Social commitment:

Inculcate values of self-awareness, empathy, mutual respect. Understand our obligation to society and foster an ability to work in a diverse cultural setting. Understand how one's actions can enhance the well-being of others.

Global competencies:

Team- building, communication, self-management, collaborative working, openness and respect for a range of perspectives.

Resolution No. 4.6 of Academic Council (AC-50/2024): Resolved to approve & adopt the distribution of subject wise teaching hours for first professional MBBS from 2024-25 batch onwards as per new CBME guidelines published on 12/09/2024. **[ANNEXURE-26]**

Distribution of Subject Wise Teaching Hours for 1 st MBBS

(With effect from batch 2024-2025)

Subject	Lecture (Hrs)	SGL (Hrs)	SDL (Hrs)	Total (Hrs)
Foundation Course (FC) will be conducted at the beginning of 1st MBBS for 02 weeks				**80**
Anatomy	180	430	**10**	**620**
Physiology	130	305	**10**	**445**
Biochemistry *	82	157	**10**	**249**
ECE**	27	-	**0**	**27**
Community Medicine	20	20	**-**	**40**
FAP			**27**	**27**
AETCOM ***		26		**26**
Sports + Extra –curricular activities				**10**
Total				**1521#**

As per NMC "Guidelines for Competency Based Medical Education (CBME) Curriculum 2024" on 12/09/2024, page No- 53

***Including molecular biology**

****Early Clinical exposure hours to be divided equally in all three subjects.**

***** AETCOM module shall be a longitudinal programme. #**

includes hours for Foundation course also.

Resolution No. 4.4 of Academic Council (AC-50/2024): Resolved to approve and adopt the distribution of hours of foundation course of **First MBBS from 2024-25 batch onwards. [ANNEXURE-24]**

Foundation Course

Foundation Course- 2 weeks at start of the course

Subject/ contents	Teaching Hours
Orientation Module including History of Indian Medicine	15
Skills Module	15
Community orientation module	5
Professional Development and Ethics Module (P&E) including Mental health	20
Enhancement of Language and Computer Skills Module including Clinico -laboratory communication	10
Sports and Extracurricular Activities	15
Total	80

Resolution No. 4.2 of Academic Council (AC-50/2024):
Resolved to approve & accept the changes in the First MBBS Anatomy syllabus for the competencies from MBBS 2024-25 Batch onwards. [ANNEXURE-22]

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

ANATOMY (CODE: AN)
(Topics = 82, Competencies = 413)

ANATOMY (Topics = 82, Competencies = 413)

Sr. No.	Topic	COMPETENCY - The student should be able to	Competency Number	Core (Y/N)
		GENERAL ANATOMY		
1	**Anatomical terminology**	**Describe** & Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movements in the human body	AN1.1	Y
		Describe composition of bone and bone marrow	AN1.2	Y
2	**General features of bones & Joints**	Describe parts, types, peculiarities of each type, blood and nerve supply of bones.	AN2.1	Y
		Describe the laws of ossification, epiphysis, its various types and their importance	AN2.2	N
		Describe special features of a sesamoid bone	AN2.3	N
		Describe various types of cartilage with its structure & distribution in body	AN2.4	Y
		Describe & demonstrate various joints with possible movements, subtypes and examples	AN2.5	Y
		Explain the concept of nerve supply of joints & hilton's law	AN2.6	Y
3	**General features of Muscle**	Classify & describe muscle tissue according to structure, size, shape, region & action	AN3.1	Y
		Describe parts of skeletal muscle and differentiate between tendons and aponeuroses with examples	AN3.2	Y
		Explain Shunt and spurt muscles with examples and role in joint movement	AN3.3	N
4	**General features of skin and fascia**	Describe different types of skin & dermatomes in body	AN4.1	N
		Describe & demonstrate structure of skin with its appendages along with clinical anatomy	AN4.2	Y
		Describe structure, contents and identify modifications of superficial fascia along with fat distribution in body	AN4.3	Y
		Describe & demonstrate modifications of deep fascia with its location, function & examples	AN4.4	Y
		Explain principles of skin incisions and their surgical importance	AN4.5	N
5	**General features of the cardiovascular system**	Differentiate between blood vascular and lymphatic system	AN5.1	Y
		Differentiate between pulmonary and systemic circulation	AN5.2	Y
		Describe general differences between arteries, veins and sinuses	AN5.3	Y
		Explain functional and gross structural differences between elastic, muscular arteries and arterioles	AN5.4	Y
		Describe portal system giving examples	AN5.5	Y
		Describe the concept of anastomoses and collateral circulation, its different sites & significance of end arteries	AN5.6	Y
		Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses	AN5.7	N
		Describe thrombosis, infarction & aneurysm	AN5.8	N
6	**General Features of lymphatic system**	Describe the components and functions of the lymphatic system	AN6.1	N
		Describe structure of lymph capillaries & mechanism of lymph circulation	AN6.2	N
		Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system	AN6.3	N

7	**Introduction to the nervous system**	Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems	AN7.1	Y
		List components of nervous tissue and their funcitons	AN7.2	Y
		Describe parts of a neuron and classify them based on number of neurites, size & function	AN7.3	Y
		Describe structure of a typical spinal nerve	AN7.4	Y

UPPER LIMB

7		Describe principles of sensory and motor innervation of muscles	AN7.5	N
		Describe concept of loss of innervation of a muscle with its applied anatomy	AN7.6	Y
		Describe various types of synapse	AN7.7	Y
		Describe differences between sympathetic and spinal ganglia	AN7.8	N
8	**Features of individual bones (Upper Limb)**	Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (clavicle, scapula, humerus, radius, ulna, carpal bones)	AN8.1	Y
		Demonstrate important muscle attachments on the given bone	AN8.2	Y
		Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform	AN8.3	Y
		Describe scaphoid fracture and explain the anatomical basis of avascular necrosis	AN8.4	N
9	**Pectoral region**	Describe attachment, nerve supply & action of pectoralis major and pectoralis minor and describe clavipectoral fascia	AN9.1	Y
		Describe the location, extent, deep relations, structure, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	AN9.2	Y
		Describe development of breast, associated age changes and congenital anomalies	AN9.3	N
10	**Axilla, Shoulder and Scapular region**	Identify & describe boundaries and contents of axilla	AN10.1	Y
		Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of axillary vein	AN10.2	Y
		Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus	AN10.3	Y
		Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage	AN10.4	Y
		Explain variations in formation of brachial plexus	AN10.5	Y
		Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis	AN10.6	Y
		Describe axillary lymph nodes, areas of drainage and anatomical basis of their enlargement	AN10.7	Y
		Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi	AN10.8	Y
		Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation	AN10.9	N
		Describe and identify the deltoid and rotator cuff muscles along with their nerve supply and clinical anatomy	AN10.10	Y
		Describe & demonstrate attachment, action and clinical anatomy of serratus anterior muscle	AN10.11	Y
		Describe and demonstrate shoulder joint for type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	AN10.12	Y
		Explain anatomical basis of Injury to axillary nerve during intramuscular injections	AN10.13	Y

11	**Arm & Cubital fossa**	Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii	AN11.1	Y
		Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm	AN11.2	Y
		Describe the anatomical basis of Venipuncture of cubital veins	AN11.3	Y
		Describe the anatomical basis of Saturday night paralysis	AN11.4	Y
		Identify & describe boundaries and contents of cubital fossa	AN11.5	Y
		Describe the anastomosis around the elbow joint	AN11.6	N
12	**Forearm & hand**	Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions	AN12.1	Y
		Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm	AN12.2	Y
		Identify & describe flexor retinaculum with its attachments	AN12.3	Y
		Explain anatomical basis of carpal tunnel syndrome	AN12.4	Y
		Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved	AN12.5	Y
		Describe & demonstrate movements of thumb and muscles involved	AN12.6	Y
		Identify & describe course and branches of important blood vessels and nerves in hand	AN12.7	Y
		Describe anatomical basis of Claw hand	AN12.8	Y
		Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths	AN12.9	Y
		Explain infection of fascial spaces of palm	AN12.10	N
		Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions	AN12.11	Y
		Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm	AN12.12	Y
		Describe the anatomical basis of Wrist drop	AN12.13	Y
		Identify & describe compartments deep to extensor retinaculum and describe the boundaries and contents of anatomical snuff box.	AN12.14	Y
		Identify & describe extensor expansion formation	AN12.15	Y
13	**General Features, Joints, radiographs & surface marking**	Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage	AN13.1	Y
		Describe dermatomes of upper limb	AN13.2	N
		Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint	AN13.3	Y
		Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint	AN13.4	N
		Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand	AN13.5	Y
		Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end and Inferior angle of the scapula	AN13.6	Y
		Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis	AN13.7	Y
		Describe development of upper limb	AN13.8	N

14	**Features of individual bones (Lower Limb)**	Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (hip bone, femur, tibia fibula, tarsal bones)	AN14.1	Y
		Identify & describe joints formed by the given bone	AN14.2	Y
		Describe the importance of ossification of lower end of femur & upper end of tibia, and explain violation of law of ossification in fibula	AN14.3	Y
		Identify and name various bones in the articulated foot with individual muscle attachment	AN14.4	N
LOWER LIMB				
15	**Front & Medial side of thigh**	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh	AN15.1	Y
		Describe and demonstrate major muscles with their attachment, nerve supply and actions	AN15.2	Y
		Describe and demonstrate boundaries, floor, roof and contents of femoral triangle	AN15.3	Y
		Explain anatomical basis of Psoas abscess & Femoral hernia	AN15.4	N
		Describe and demonstrate adductor canal with its contents	AN15.5	Y
16	**Gluteal region & back of thigh**	Describe and demonstrate major muscles with their attachment, nerve supply and actions.	AN16.1	Y
		Describe and demonstrate structures under the cover of gluteus maximus. Also explain the anatomical basis of sciatic nerve injury during gluteal intramuscular injections	AN16.2	Y
		Explain the anatomical basis of Trendelenburg sign	AN16.3	Y
		Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions	AN16.4	Y
		Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh	AN16.5	Y
		Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa with its clinical anatomy	AN16.6	Y
17	**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	AN17.1	Y
		Describe anatomical basis of complications of fracture neck of femur	AN17.2	N
		Describe dislocation of hip joint and surgical hip replacement	AN17.3	N
18	**Knee joint, Anterior compartment of leg & dorsum of foot**	Describe and demonstrate major muscles of anterior compartment of leg with their attachment, nerve supply and actions	AN18.1	Y
		Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg	AN18.2	Y
		Explain the anatomical basis of foot drop	AN18.3	Y
		Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, nerve supply, bursae around the knee joint along with anastomosis around the knee joint	AN18.4	Y
		Explain the anatomical basis of locking and unlocking of the knee joint	AN18.5	Y
		Describe knee joint injuries with its applied anatomy	AN18.6	N
		Explain anatomical basis of Osteoarthritis	AN18.7	N

19	**Back of Leg & Sole**	Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions	AN19.1	Y
		Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg	AN19.2	Y
		Explain the concept of "Peripheral heart"	AN19.3	Y
		Explain the anatomical basis of rupture of calcaneal tendon	AN19.4	N
		Describe factors maintaining importance arches of the foot with its importance	AN19.5	Y
		Explain the anatomical basis of Flat foot & Club foot	AN19.6	N
		Explain the anatomical basis of Metatarsalgia & Plantar fasciitis	AN19.7	N
20	**General Features, Joints, radiographs & surface marking**	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	AN20.1	Y
		Describe the subtalar and transverse tarsal joints	AN20.2	N
		Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb	AN20.3	Y
		Explain anatomical basis of enlarged inguinal lymph nodes	AN20.4	N
		Explain anatomical basis of varicose veins and deep vein thrombosis	AN20.5	Y
		Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb	AN20.6	Y
		Identify & demonstrate important bony landmarks of lower limb: Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular	AN20.7	Y
		Identify & demonstrate palpation of femoral, popliteal, posterior tibial, anterior tibial & dorsalis pedis arteries in a simulated environment	AN20.8	Y
		Demonstrate surface projection of: femoral, popliteal, dorsalis pedis, post tibial arteries, Mid inguinal point, femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins	AN20.9	Y
		Describe basic concept of development of lower limb	AN20.10	N
		THORAX		
21	**Thoracic cage**	Identify and describe the salient features of sternum, typical rib and typical thoracic vertebra.	AN21.1	Y
		Identify & describe the features of atypical ribs and atypical thoracic vertebrae.	AN21.2	N
		Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet along with its applied aspect.(Thoracic inlet Syndrome)	AN21.3	Y
		Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles	AN21.4	Y
		Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve	AN21.5	Y
		Mention origin, course and branches/ tributaries of:1) anterior & posterior intercostal vessels 2) internal thoracic vessels	AN21.6	Y
		Mention the origin, course, relations and branches of 1) atypical intercostal nerve. 2) superior intercostal artery, subcostal artery	AN21.7	N
		Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints	AN21.8	N
		Describe & demonstrate mechanics and types of respiration	AN21.9	Y
		Describe costochondral and interchondral joints	AN21.10	N

		Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum	AN21.11	Y
22	**Heart & Pericardium**	Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium	AN22.1	Y
		Describe & demonstrate external and internal features of each chamber of heart	AN22.2	Y
		Describe & demonstrate origin, course and branches of coronary arteries	AN22.3	Y
		Describe anatomical basis of ischaemic heart disease	AN22.4	Y
		Describe & demonstrate the formation, course, tributaries and termination of coronary sinus	AN22.5	Y
		Describe the fibrous skeleton of heart	AN22.6	Y
		Mention the parts, position and arterial supply of the conducting system of heart	AN22.7	Y
23	**Mediastinum**	Describe and demonstrate the external appearance, relation, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus	AN23.1	Y
		Describe & demonstrate the extent, relations and tributaries of thoracic duct and enumerate its applied anatomy.	AN23.2	Y
		Describe & demonstrate origin, course, relations, tributaries and termination of superior vena cava, azygos, hemiazygos and accessory hemiazygos veins	AN23.3	Y
		Mention the extent, branches and relations of arch of aorta & descending thoracic aorta	AN23.4	Y
		Identify & Mention the location and extent of thoracic sympathetic chain	AN23.5	Y
		Describe the splanchnic nerves	AN23.6	N
24	**Lungs & Trachea**	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	AN24.1	Y
		Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate	AN24.2	Y
		Describe a bronchopulmonary segment with its clinical anatomy	AN24.3	Y
		Identify phrenic nerve & describe its formation & distribution	AN24.4	Y
		Mention the blood supply, lymphatic drainage and nerve supply of lungs	AN24.5	Y
		Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea	AN24.6	N
25	**Thorax**	Identify, draw and label a slide of trachea and lung	AN25.1	Y
		Describe development of pleura, lung & heart	AN25.2	Y
		Describe fetal circulation and changes occurring at birth	AN25.3	Y
		Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) fallot's tetralogy & 4) tracheoesophageal fistula	AN25.4	Y
		Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta	AN25.5	Y
		Mention development of aortic arch arteries, SVC, IVC and coronary sinus	AN25.6	N
		Identify structures seen on a plain x-ray chest (PA view)	AN25.7	Y
		Identify and describe in brief a barium swallow	AN25.8	N
		Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart	AN25.9	Y
HEAD, NECK & FACE				
26		Describe & demonstrate anatomical position of skull, Identify and locate individual skull bones in skull	AN26.1	Y

	Skull osteology	Describe & demonstrate the features of norma frontalis, verticalis, occipitalis, lateralis and basalis	AN26.2	Y
		Describe & demonstrate cranial cavity, its subdivisions, foramina and structures passing through them	AN26.3	Y
		Describe & demonstrate morphological features of mandible	AN26.4	Y
		Describe & demonstrate features of typical and atypical cervical vertebrae (atlas and axis)	AN26.5	Y
		Explain the concept of bones that ossify in membrane	AN26.6	N
		Describe & demonstrate the features of the 7th cervical vertebra	AN26.7	N
27	**Scalp**	Describe & demonstrate the layers of scalp, its blood supply, nerve supply and surgical importance.	AN27.1	Y
		Describe emissary veins with its role in the spread of infection from extracranial route to intracranial venous sinuses	AN27.2	Y
28	**Face & parotid region**	Describe & demonstrate muscles of facial expression and their nerve supply	AN28.1	Y
		Describe sensory innervation of face	AN28.2	Y
		Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels	AN28.3	Y
		Describe & demonstrate branches of facial nerve with distribution	AN28.4	Y
		Describe cervical lymph nodes and lymphatic drainage of head, face and neck	AN28.5	Y
		Identify superficial muscles of face, their nerve supply and actions	AN28.6	Y
		Explain the anatomical basis of facial nerve palsy	AN28.7	Y
		Explain surgical importance of deep facial vein	AN28.8	Y
		Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance	AN28.9	Y
		Explain the anatomical basis of frey's syndrome	AN28.10	N
29	**Posterior triangle of neck**	Describe and demonstrate the boundaries, subdivisions and contents of posterior triangle of neck	AN29.1	Y
		Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid	AN29.2	Y
		Explain anatomical basis of & Erb's, klumpke's palsy	AN29.3	Y
		Explain anatomical basis of wry neck	AN29.4	N
		Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2) scalenus anterior, 3) scalenus medius & 4) levator scapulae	AN29.5	N
30	**Cranial cavity**	Describe the cranial fossae & identify related structures	AN30.1	Y
		Describe & identify major foramina with structures passing through them	AN30.2	Y
		Describe & identify dural folds & dural venous sinuses	AN30.3	Y
		Describe clinical importance of dural venous sinuses	AN30.4	Y
		Explain effect of pituitary tumours on visual pathway	AN30.5	N
31	**Orbit**	Describe & identify extra ocular muscles of eyeball, along with a note on its attachment, action and clinical anatomy	AN31.1	Y
		Describe & demonstrate nerves and vessels in the orbit	AN31.2	Y
		Describe anatomical basis of horner's syndrome	AN31.3	N
		Describe the components of lacrimal apparatus	AN31.4	Y
		Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus	AN31.5	Y
32	**Anterior Triangle**	Describe boundaries and subdivisions of anterior triangle	AN32.1	Y
		Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles	AN32.2	Y
33	**Temporal and**	Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae	AN33.1	Y
		Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication	AN33.2	Y

	Infratemporal regions	Describe & demonstrate articulating surface, type & movements of temporomandibular joint	AN33.3	Y
		Explain the clinical significance of pterygoid venous plexus	AN33.4	Y
		Describe the features of dislocation of temporomandibular joint	AN33.5	N
34	**Submandibular region**	Describe and demonstrate the superficial and deep structures, muscles, nerves, vessels, and glands in the submandibular region	AN34.1	Y
		Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion	AN34.2	Y
		Describe the basis of formation of submandibular stones	AN34.3	N
35	**Deep structures in the neck**	Describe the parts, extent, attachments, modifications of deep cervical fascia	AN35.1	Y
		Describe & demonstrate location, parts, borders, surfaces, relations, blood supply & applied anatomy of thyroid gland. Also describe the parathyroid glands in brief.	AN35.2	Y
		Demonstrate & describe the origin, parts, course & branches subclavian artery	AN35.3	Y
		Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins	AN35.4	Y
		Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes	AN35.5	Y
		Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain	AN35.6	Y
		Describe the course and branches of IX, X, XI & XII nerve in the neck	AN35.7	Y
		Describe the anatomically relevant clinical features of Thyroid swellings	AN35.8	N
		Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib	AN35.9	N
		Describe the fascial spaces of neck	AN35.10	N
36	**Mouth, Pharynx & Palate**	Describe and demonstrate the structures of the vestibule of the mouth and oral cavity proper.	AN36.1	Y
		Describe the 1) morphology, relations, blood supply and applied anatomy of palatine tonsil 2) composition of soft palate	AN36.2	Y
		Describe and demonstrate the muscles, nerve supply, blood supply and lymphatic drainage of the pharynx	AN36.3	Y
		Describe the components and functions of lymphatic waldeyer's ring	AN36.4	Y
		Describe the pharyngeal spaces. Also describe the boundaries and clinical significance of pyriform fossa	AN36.5	N
		Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess	AN36.6	N
		Describe the clinical significance of killian's dehiscence	AN36.7	N
37	**Cavity of Nose**	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply	AN37.1	Y
		Describe location and functional anatomy of paranasal sinuses	AN37.2	Y
		Describe anatomical basis of sinusitis & maxillary sinus tumours	AN37.3	N
38	**Larynx**	Describe & demonstrate the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	AN38.1	Y
		Describe the anatomical aspects of laryngitis	AN38.2	N
		Describe anatomical basis of recurrent laryngeal nerve injury	AN38.3	N
39	**Tongue**	Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue	AN39.1	Y
		Explain the anatomical basis of hypoglossal nerve palsy	AN39.2	N

40	**Organs of hearing and equilibrium**	Describe & identify the parts, blood supply and nerve supply of external ear	AN40.1	Y
		Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube	AN40.2	Y
		Describe the features of internal ear	AN40.3	N
		Explain anatomical basis of otitis externa and otitis media	AN40.4	N
		Explain anatomical basis of myringotomy	AN40.5	N
41	**Eyeball**	Describe & demonstrate parts and layers of eyeball	AN41.1	Y
		Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion	AN41.2	N
		Describe the position, nerve supply and actions of intraocular muscles	AN41.3	N
42	**Back Region**	Describe and demonstrate the contents of the vertebral canal	AN42.1	Y
		Describe & demonstrate the boundaries and contents of Suboccipital triangle	AN42.2	Y
		Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis	AN42.3	N
43	**Head & neck Joints, Histology, Development, Radiography & Surface marking**	Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint	AN43.1	
		Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina	AN43.2	
		Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland	AN43.3	N
		Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye	AN43.4	
		Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels	AN43.5	
		Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve	AN43.6	N
		Identify the anatomical structures in 1) Plain x-ray skull, 2) AP view and lateral view 3) Plain x-ray cervical spine-AP and lateral view 4) Plain x- ray of paranasal sinuses	AN43.7	
		Describe the anatomical route used for carotid angiogram and vertebral angiogram	AN43.8	N
		Identify anatomical structures in carotid angiogram and vertebral angiogram	AN43.9	N
ABDOMEN & PELVIS				
44	**Anterior abdominal wall**	Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen	AN44.1	Y
		Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall	AN44.2	Y
		Describe the formation of rectus sheath and its contents	AN44.3	Y
		Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	AN44.4	Y

		Explain the anatomical basis of inguinal hernia.	AN44.5	Y
		Describe & demonstrate attachments of muscles of anterior abdominal wall	AN44.6	Y
		Describe common abdominal incisions with example and their clinical importance	AN44.7	N
45	**Posterior abdominal wall**	Describe Thoracolumbar fascia, its different layers, their attachments and extents	AN45.1	Y
		Describe & demonstrate Lumbar plexus, its root value, formation, branches and clinical anatomy (compression/ injury to the rootlets of lumber plexus)	AN45.2	Y
		Describe and demonstrate back muscles, nerve supply and action	AN45.3	N
46	**Male external nitalia**	Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	AN46.1	Y
		Describe parts of Epididymis	AN46.2	Y
		Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage)	AN46.3	Y
		Explain the anatomical basis of Varicocele	AN46.4	N
		Explain the anatomical basis of Phimosis & Circumcision	AN46.5	N
47	**Abdominal cavity**	Describe & demonstrate horizontal and vertical tracing of peritoneum. Also describe boundaries and recesses of Lesser & Greater sac.	AN47.1	Y
		Name & identify various peritoneal folds & pouches with its explanation	AN47.2	Y
		Explain anatomical basis of Ascites & Peritonitis	AN47.3	N
		Explain anatomical basis of Subphrenic abscess	AN47.4	N
		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)	AN47.5	Y
		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	AN47.6	N
		Demonstrate boundaries of Calot's triangle and mention its clinical importance	AN47.7	N
		Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein	AN47.8	Y
		Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery	AN47.9	Y
		Describe sites of portosystemic anastomosis, describe its applied anatomy and anatomical correlations	AN47.10	Y
		Explain the anatomic basis of hematemesis& caput medusae in portal hypertension	AN47.11	Y
		Describe important nerve plexuses of posterior abdominal wall	AN47.12	N
		Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm	AN47.13	Y
		Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	AN47.14	N
48		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.	AN48.1	Y

	Pelvic wall and viscera	Describe & identify the muscles of Pelvic diaphragm.	AN48.2	Y
		Describe & demonstrate the origin, course, important relations and branches of internal iliac artery	AN48.3	Y
		Describe the branches of sacral plexus	AN48.4	Y
		Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation	AN48.5	N
		Describe the neurological basis of Automatic bladder	AN48.6	Y
		Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer	AN48.7	N
		Mention the structures palpable during vaginal & rectal examination	AN48.8	N
49	**Perineum**	Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents)	AN49.1	Y
		Describe & identify Perineal body	AN49.2	Y
		Describe & demonstrate Perineal membrane in male & female	AN49.3	Y
		Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa	AN49.4	Y
		Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure	AN49.5	N
50	**Vertebral column**	Describe the curvatures of the vertebral column	AN50.1	Y
		Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis	AN50.2	Y
		Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)	AN50.3	Y
		Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	AN50.4	N
51	**Sectional Anatomy**	Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)	AN51.1	Y
		Describe & identify the midsagittal section of male and female pelvis	AN51.2	Y
52	**Histology & Embryology**	Describe & identify the microanatomical features of Gastro-intestinal system: Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland	AN52.1	Y
		Describe & identify the microanatomical features of: Urinary system: Kidney, Ureter & Urinary bladder Male Reproductive System: Testis, Epididymis, Vas deferens, Prostate & penis Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord	AN52.2	Y
		Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum	AN52.3	N
		Describe the development of anterior abdominal wall	AN52.4	N
		Describe the development and congenital anomalies of Diaphragm	AN52.5	Y
		Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut	AN52.6	Y
		Describe the development of Urinary system	AN52.7	Y
		Describe the development of male & female reproductive system	AN52.8	Y
53		Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups	AN53.1	Y
		Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet	AN53.2	Y

	Osteology	Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis	AN53.3	Y
		Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)	AN53.4	N
54	**Radiodiagnosis**	Describe the principles of Plain and contrast radiography, Computed Describe the principles of Plain and contrast radiography, Computed Tomography scan and Digital subtraction angiography	AN54.1	Y
		Describe & identify features of plain X ray abdomen	AN54.2	Y
		Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography)	AN54.3	Y
		Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen	AN54.4	N
55	**Surface marking**	Demonstrate the surface marking of Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring, McBurney's point, Renal Angle & murphy's point	AN55.1	Y
		Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery	AN55.2	Y
NEUROANATOMY				
56	**Meninges & CSF**	Describe & identify various layers of meninges with its extent & modifications	AN56.1	Y
		Describe formation, circulation and absorption of CSF with its applied anatomy.	AN56.2	Y
57	**Spinal Cord**	Identify external features of spinal cord	AN57.1	Y
		Describe extent of spinal cord in child & adult with its clinical implication	AN57.2	Y
		Draw & label transverse section of spinal cord at mid-cervical & midthoracic level	AN57.3	Y
		Enumerate ascending & descending tracts at mid thoracic level of spinal cord	AN57.4	Y
		Describe the anatomical basis of clinical conditions affecting the grey and white matter of spinal cord (Brown-Sequard Syndrome, Poliomyelitis, Amyotrophic lateral sclerosis or motor neuron disease, Syringomyelia, Hereditary sensory neuropathy, Subacute Combined degeneration, Transverse myelitis, paraplegia)	AN57.5	Y
58	**Medulla Oblongata**	Identify external features of medulla oblongata	AN58.1	Y
		Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) Inferior Olivary Nucleus	AN58.2	Y
		Describe cranial nerve nuclei in medulla oblongata with their functional group	AN58.3	Y
		Describe the anatomical basis of clinical conditions affecting the medulla oblongata (Medial and lateral medullary syndromes, Crossed Diplegia)	AN58.4	Y
59	**Pons**	Identify external features of pons	AN59.1	Y
		Draw & label transverse section of pons at the upper and lower level	AN59.2	Y
		Describe cranial nerve nuclei in pons with their functional group	AN59.3	Y

		Describe the anatomical basis of clinical conditions affecting the pons (Locked-in syndrome, Pontine haemorrhage, Foville syndrome, Raymond syndrome, Millard-Gubler syndrome)	AN59.4	Y
60	**Cerebellum**	Describe & demonstrate external & internal features of cerebellum	AN60.1	Y
		Describe connections of cerebellar cortex and intracerebellar nuclei	AN60.2	Y
		Describe anatomical basis of cerebellar dysfunction	AN60.3	N
61	**Midbrain**	Identify external & internal features of midbrain	AN61.1	Y
		Describe internal features of midbrain at the level of superior & inferior colliculus	AN61.2	Y
		Describe the anatomical basis of clinical conditions affecting the midbrain (Weber syndrome, Benedikt syndrome, Parinaud syndrome)	AN61.3	Y
62	**Cranial nerve nuclei & Cerebral hemispheres**	Describe the cranial nerve nuclei with its functional components	AN62.1	Y
		Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere. Also describe the effects of damage to various functional areas of cerebral cortex	AN62.2	Y
		Describe the white matter of cerebrum. Also describe the effects of damage to corpus callosum and different parts of internal capsule	AN62.3	Y
		Describe the parts & major connections of basal ganglia & limbic lobe. Also explain the anatomical basis of Parkinson's disease, chorea, athetosis and ballismus	AN62.4	Y
		Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus	AN62.5	Y
		Describe & identify formation, branches & major areas of distribution of circle of Willis	AN62.6	Y
63	**Ventricular System & Special sensory pathways**	Describe & demonstrate parts, boundaries and features of 3rd, 4th and lateral ventricle	AN 63.1	Y
		Describe anatomical basis of congenital hydrocephalus	AN63.2	N
		Describe the olfactory, visual, auditory and gustatory pathways	AN63.3	Y
64	**Histology & Embryology**	Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum	AN64.1	Y
		Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum	AN64.2	Y
		Describe various types of open neural tube defects with its embryological basis	AN64.3	N
GENERAL HISTOLOGY				
65	**Epithelium histology**	Identify epithelium under the microscope & describe the various types that correlate to its function	AN65.1	Y
		Describe the ultrastructure of epithelium	AN65.2	N
66	**Connective tissue histology**	Describe & identify various types of connective tissue with functional correlation	AN66.1	Y
		Describe the ultrastructure of connective tissue	AN66.2	N
67	**Muscle histology**	Describe & identify various types of muscle under the microscope	AN67.1	Y
		Classify muscle and describe the structure-function correlation of the same	AN67.2	Y

		Describe the ultrastructure of muscular tissue	AN67.3	N
68	**Nervous tissue histology**	Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve under the microscope	AN68.1	Y
		Describe the structure-function correlation of neuron	AN68.2	Y
		Describe the ultrastructure of nervous tissue	AN68.3	N
69	**Blood Vessels**	Identify elastic & muscular blood vessels, capillaries under the microscope	AN69.1	Y
		Describe the various types and structure-function correlation of blood vessel	AN69.2	Y
		Describe the ultrastructure of blood vessels	AN69.3	Y
70	**Glands & Lymphoid tissue**	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	AN70.1	Y
		Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	AN70.2	Y
71	**Bone & Cartilage**	Identify bone under the microscope; classify various types and describe the structure-function correlation of the same	AN71.1	Y
		Identify cartilage under the microscope & describe various types and structure- function correlation of the same	AN71.2	Y
72	**Integumentary System**	Identify the skin and its appendages under the microscope and correlate the structure with function	AN72.1	Y
		GENETICS		
73	**Chromosomes**	Describe the structure of chromosomes with classification	AN73.1	Y
		Describe technique of karyotyping with its applications	AN73.2	Y
		Describe the Lyon's hypothesis	AN73.3	Y
74	**Patterns of Inheritance**	Describe mendelian and non-mendelian inheritance. Explain various modes of inheritance with examples.	AN74.1	Y
		Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance	AN74.2	Y
		Describe multifactorial inheritance with examples	AN74.3	Y
		Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant	AN74.4	N
75	**Principles of Genetics, Chromosomal Aberrations & Clinical Genetics**	Describe the structural and numerical chromosomal aberrations	AN75.1	Y
		Explain the terms mosaics and chimeras with example	AN75.2	N
		Describe the genetic basis & clinical features of: Prader Willi syndrome, Edward syndrome, Patau syndrome, Down syndrome, Turner Syndrome & Klinefelter syndrome	AN75.3	N
		Describe genetic basis of variation: polymorphism and mutation	AN75.4	Y
		Describe in brief: genetic counselling, karyotyping, FISH, PCR and genetic sequencing	AN75.5	Y

GENERAL EMBRYOLOGY				
76	Introduction To embryology	Describe the stages of human life	AN76.1	Y
		Explain the terms- phylogeny, ontogeny, trimester, viability	AN76.2	Y
77	**Gametogenesis and fertilization**	Describe the uterine changes occurring during the menstrual cycle	AN77.1	Y
		Describe the synchrony between the ovarian and menstrual cycles	AN77.2	Y
		Describe spermatogenesis and oogenesis along with diagrams	AN77.3	Y
		Describe the stages and consequences of fertilization	AN77.4	Y
		Describe the anatomical principles underlying contraception	AN77.5	Y
		Describe teratogenic influences: fertility and sterility, surrogate motherhood, social significance of "sex-ratio"	AN77.6	N
78	**Second week of development**	Describe cleavage and formation of blastocyst	AN78.1	Y
		Describe the development of trophoblast	AN78.2	Y
		Describe the process of implantation & common abnormal sites of implantation	AN78.3	Y
		Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate	AN78.4	Y
		Describe abortion, decidual reaction, pregnancy test	AN78.5	Y
79	**3rd to 8th week of development**	Describe the formation & fate of the primitive streak	AN79.1	Y
		Describe formation & fate of notochord	AN79.2	Y
		Describe the process of neurulation	AN79.3	Y
		Describe the development of somites and intra-embryonic coelom	AN79.4	Y
		Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects	AN79.5	N
		Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein	AN79.6	N

80	**Fetal membranes**	Describe formation, functions & fate of chorion, amnion, yolk sac, allantois & decidua	AN80.1	Y
		Describe formation & structure of umbilical cord	AN80.2	Y
		Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier	AN80.3	Y
		Describe embryological basis of twinning in monozygotic & dizygotic twins	AN80.4	Y
		Describe role of placental hormones in uterine growth & parturition	AN80.5	Y
		Explain embryological basis of estimation of fetal age.	AN80.6	N
		Describe various types of umbilical cord attachments	AN80.7	N
81	**Prenatal Diagnosis**	Describe various invasive & non-invasive methods of prenatal diagnosis	AN81.1	Y
		Describe indications, process and disadvantages of amniocentesis	AN81.2	Y
		Describe indications, process and disadvantages of chorion villus biopsy	AN81.3	Y
82	**Ethics in Anatomy**	Demonstrate respect, and follow the correct procedure when handling cadavers and other biologic tissue	AN 82.1	Y

Resolution No. 4.5 of Academic Council (AC-50/2024): Resolved to approve & adopt AETCOM competencies (modules) distribution subject-wise in the Anatomy, Physiology & Biochemistry and also distribution of modules in theory paper I & II from **First MBBS 2024-25 batch onwards.**

AETCOM Competencies Distribution for Anatomy, Physiology and Biochemistry from First MBBS 24-25 batch onwards

(Ref: NMC letter No. D-11011/500/2024-AcademicCell (e-8284443)
UGMEB Dated 12/09/2024)

Subject	Paper	Module Number	Competency
Anatomy	**Paper I**	Module 1.5	• The cadaver as our first teacher Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissue
	Paper II	Module 1.4	• Demonstrate ability to communicate to patients in a patient, respectful, nonthreatening, non-judgmental and empathetic manner
Physiology	**Paper I**	Module 1.2,	• Enumerate and describe professional qualities and roles of a physician
	Paper II	Module 1.3	• Demonstrate empathy in patient encounters
Biochemistry	**Paper I**	Module 1.1,	• Enumerate and describe professional qualities and roles of a physician ● Describe and discuss commitment to lifelong learning as an important part of physician growth
	Paper II	Module 1.1	• Describe and discuss the role of a physician in health care system ● Identify and discuss physician's role and responsibility to society and the community that she/ he serves

Assessment:
All internal and University exams must have one question/application based question On AETCOM in each theory paper (5%) and it should be assessed in various components of Practical/clinical exams.

Resolution No. 4.7 of Academic Council (AC-50/2024): Resolved to approve the structured format of internal assessment for all the subjects of first **MBBS 2024-25 onwards**. **[ANNEXURE-27]**

Internal Assessment Pattern for Theory and Practical

Phase -1 MBBS- (2024-25 CBME)

FORMAT FOR INTERNAL ASSESSMENT EXAMINATION IN ANATOMY, PHYSIOLOGY, BIOCHEMISTRY

Sr. No.	Exam	Theory	Practical
1.	Internal assessment examinations	200	200
2.	Preliminary examination	200	100
Total		**400**	**300**

- Preliminary examination pattern will be as per University examination
- Respective colleges/ departments will conduct internal assessment examinations and maintain records of the same.

Sr. No.	Exam	Theory	Practical
1.	Internal assessment examinations (Midterm + Terminal)	200 (100 + 100)	200 (100 + 100)
2.	Preliminary examination	200	100
3.	• Additional examination for students missing any of the three Internal Assessment exams / not qualifying for University Exam. • Marks to be computed as per the missed Exam / low score exam for non-qualifying students.	200/100	100

***Internal assessment examinations marks conversion to internal assessment marks -** Student's internal assessment examinations scores [Midterm, Terminal, Preliminary and additional (where applicable)] will be converted to 50 marks for theory and 50 marks for Practical internal assessment.

INTERNAL ASSESSMENT CALCULATION (THEORY)

Sr. No.	Criteria	Theory
1.	*All internal assessment examinations including preliminary examination	**50**
2.	**Day to Day assessment**	
	Continuous class test (Minimum two – one in each term of 30 marks) (MCQ /SAQ/LAQ/BAQ/Home assignment etc.)	**30**
3.	Self-Directed Learning (SDL) (Seminar/ Case presentation/ PBL/ TBL)	**15**
4	Attendance	**05**
Total		**100**

INTERNAL ASSESSMENT CALCULATION (PRACTICAL)

Sr. No.	Criteria	Practical
1.	*All internal assessment examinations including preliminary examination	**50**
2.	**Certifiable competencies assessment** **(**Viva/ Spotters/ OSPE**) & logbook** (Minimum two – one in each term of 25 marks)	**25**
3.	AETCOM	**10**
4.	Journals +ECE	**10**
5	Attendance	**05**
Total		**100**

Mark Distribution for Attendance for Theory and Practical

Attendance in Percentage	Marks (Out of 5)
75 -80 %	2.5 -3
81- 85 %	3.1- 3.5
86 – 90 %	3.6- 4.0
91 – 95 %	4.1-4.5
96 – 100 %	4.6-5.0

In spite of all (Attendance of theory + practical, IA and Certifiable competency) measures, if student is still not meeting the criteria to be eligible for regular exam he shall be detained and offered remedial for same batch supplementary exam. For attendance, he will be allowed remedial measures only if attendance is more than 60% for each component.

Resolution No. 4.9 of Academic Council (AC-50/2024): Resolved to approve the criteria of attendance in the pattern of eligibility to appear for professional examinations from **First MBBS 2024-25 batch** as per new CBME guidelines published on 12/09/2024. **[ANNEXURE-29]**

The criteria of attendance of students for eligibility to university examination.

(Government of India National Medical Commission Letter no D-11011/500/2024-Academic Cell e- 8284443- UGMEB Dated 12/09/2024 page 39,40 and 42, 43)

I. Eligibility to appear for Professional examinations

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

Attendance

I n t e r n a l

Assessment

Certifiable Competencies Achieved:

(a) Attendance

There shall be a minimum of 75% attendance in theory and 80% attendance in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase - the learner must have 75% attendance in theory and 80% attendance in practical in each phase of instruction in that subject. There shall be a minimum of 75% attendance in AETCOM and minimum of 80% attendance in family visits under Family adoption 40 programme. Each student shall adopt minimum 3 families/ households and preferably five families. The details shall be as per Family Adoption Program guidelines.

o If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have a minimum of 75% attendance in each subject including its allied branches, and 80% attendance in each clinical posting. Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination/ NExT.

Remedial measures:

A student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below:

During the course: If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures. These students should be provided remedial measures as and when needed to improve IA. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete the remedial measures and it should be documented.

In spite of all above measures, if student is still not meeting the criteria to be eligible for regular exam he shall be offered remedial for the same batch supplementary exam. For attendance, he will be allowed remedial measures ONLY IF attendance is more than 60% for each component. At the end of phase: If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book at the end of regular classes in a phase, the student is detained to appear in regular university examination of that batch.

Resolution No. 4.8 of Academic Council (AC-50/2024): Resolved to approve changes in format of university & preliminary examination pattern for Theory paper I & II for all the three subjects- Anatomy, Physiology & Biochemistry as per new CBME guidelines dated 12/9/24 with inclusion of 10 scenario based MCQ, reasoning questions in BAQ and clinical as well as integrated topics in SAQ. **[ANNEXURE-28]**

Phase -1 MBBS, CBME (2024-25)

Preliminary / University examination Pattern (Theory)

Paper I & II – 100 X 2 = Total 200 Marks

Each paper – Time – 3 hrs. **Total- 100 Marks**

- **Section A – MCQ – 20 X 1 mark = 20 Marks**
  (Scenario based MCQs shall be accorded a weightage of 10 % of the total marks (100) i.e. 10 Marks in each theory paper)

- **Section B -**
  Q.1. Answer any 5 out of 6 (BAQ) - 5 X 3 =15 marks
  (3 BAQ will be as reasoning question in Paper I & II)

  Q.2. Answer any 3 out of 4 (SAQ) - 3 X 5=15 marks
  (1 SAQ will be clinical application based in paper I&II excluding integrated topics)
  1 SAQ will be from AETCOM modules in Paper I & II)

  Q.3. Answer any 1 out of 2 (LAQ) - 1 X 10 =10 marks
  LAQ should be structured (With defined marks distribution)

- **Section C –**
  Q.1. Answer any 5 out of 6 (BAQ) - 5 X 3 =15 marks
  (3 BAQ will be as reasoning question in Paper I & II)

  Q.2. Answer any 3 out of 4 (SAQ) - 3 X 5=15 marks
  (2 SAQ will be on integrated topic in paper I&II)

  Q.3. Answer any 1 out of 2 (LAQ) - 1 X 10=10 marks
  LAQ should be structured (With defined marks distribution)

Integrated topics: anaemia, ischemic heart disease, diabetes mellitus, tuberculosis, hypertension and thyroid.

- **<u>Pattern of Theory PCT I and II is same as above</u>**

- **Syllabus - Paper I & Paper II**

<u>Paper I</u>	**<u>Paper II</u>**
• Upper Limb	• Lower Limb
• Thorax	• Abdomen
• Head, Face & Neck	• Pelvis
• Neuroanatomy	• Related Systemic Histology
• Related Systemic Histology	• Related Systemic Embryology
• Related Systemic Embryology	• General Anatomy
• Genetics	• General Histology
• AETCOM – 1 SAQ (Module – 1.5)	• General Embryology
	• AETCOM – 1 SAQ (Module – 1.4)

Resolution No. 4.10 of Academic Council (AC-50/2024): Resolved to approve the structured format of practical examination for prelim & university examination for first **MBBS 2024-25 onwards**. [ANNEXURE-30]

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

MARKSHEET FOR ANATOMY PERLIM & UNIVERSITY PRACTICAL EXAMINATION

PROGRAMME :(FIRST MBBS-CBME) **SUBJECT: ANATOMY**

Practical											**Oral Viva**				
Seat No.	Histo. Spots 10 slides- one mark each	Histo slide Discussion - 2 Slides (2x5)	Clinical anatomy (5) & Genetics (5) (OSPE)	Axial Skeleton	Embryo (Models)	Soft Parts			Communication skill	**Practical Total**	Appendicular Skeleton	X-ray	Surface Living Anatomy	**Oral Viva Total**	**PR & Oral Total**
	A	**B**	**C**	**D**	**E**	**Soft Parts - Upper Limb, Thorax & HNF**	**Soft parts- Abdomen, pelvis & Lower Limb F2**	**Soft parts - Neuroanatomy F3**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
Marks	10	10	10	10	10	10	10	5	5	**80**	10	5	5	**20**	**100**

Resolution No. 5.10 of Academic Council (AC-48/2023): Resolved to accept University passing criteria as per CBME guidelines published on 01.09.2023 from First MBBS 2023-24 batch onwards (Ref F.No. U/14021/8/2023-UGMEB Corrigendum Amended Page 58 guidelines) **[ANNEXURE-18].**

MGMIHS, New Mumbai

Criteria of passing in

subject

(Reference No: U/14021/8/2023-UGMEB 2023)

Page 58 of CBME Guideline	Amended page 58 of CBME Guidelines
In subjects that have two papers, the learner must secure minimum 50% of Marks in aggregate (both papers together) to pass in the said subject.	**In subjects that have two papers, the learner must secure** minimum 40% of marks in aggregate (both papers together) to pass in the said subject.
Criteria for passing in a subject: A candidate shall obtain 50% marks in University conducted examination separately in Theory and in Practical (practical includes; practical/clinical and viva voce) in order to be declared as passed in that subject.	**Criteria for passing in a subject: A** candidate shall obtain 50% marks in aggregate and 60: 40 (minimum) or 40:60 (minimum) in University conducted examination separately in Theory and in Practical (practical includes; practical/clinical and viva voce) in order to be declared as passed in that subject.

Annexure-14A of AC-48/2023

Eligibility to appear for university exams	
Internal Assessment (Theory + Practical)	50% - Combined theory & practical [Theory - minimum 40% Practical- minimum 40%]
Criteria for pass in university exams	
Theory	50% aggregate (Paper I + II) (Each Paper minimum 40%)
Practical	50%

Resolution No. 4.10 of Academic Council (AC-51/2025):
Resolved to approve the proposed revision of Blueprint of Anatomy theory paper & practical for prelim & university examination from MBBS Batch 2024-25 onward. [ANNEXURE-32].

BLUEPRINT OF UNIVERSITY QUESTION PAPER
1. THEORY EXAMINATION PATTERN

1. 1. Theory Question Paper Pattern: Two papers each of 3 hours duration and carrying 100 marks each.

1.2 Marks distribution for each paper:

Type of question	Numbers X Marks	Total marks
Multiple Choice Questions (MCQs)	20 X 1	20
Long Answer Questions (LAQs)	2 X 10	20
Short Answer Questions (SAQs)	6 X 5	30
Brief Answer Questions (BAQs)	10 X 3	30
Total		**100**

Each Paper is divided into 3 sections:

- **Section A: MCQ 20 marks**
- **Section B: 40 marks: BAQ 5/6 x 3= 15; SAQ 3/4 x 5= 15; LAQ 1/2 x 10 = 10**
- **Section C: 40 marks: BAQ 5/6 x 3= 15; SAQ 3/4 x 5= 15; LAQ 1/2 x 10 = 10**
    - Section A- Scenario based MCQs shall be accorded a weightage of 10 Marks in each theory paper
    - Section B and C- 3 BAQs will be as reasoning question in both sections, 1 SAQ will be from AETCOM modules [Paper I-1.5, Paper II- 1.4], 1 SAQ will be clinical application based excluding integrated topics, 2 SAQs will be on integrated topic

1.2. Paper I & Paper II Contents

1.2.a. Paper I

- Upper Limb
- Thorax
- Head, Face & Neck
- Neuroanatomy
- Related Systemic Histology
- Related Systemic Embryology
- Genetics
- AETCOM – 1 SAQ (Module – 1.5)

1.2.b. Paper II

- Lower Limb
- Abdomen
- Pelvis
- Related Systemic Histology
- Related Systemic Embryology
- General Anatomy
- General Histology
- General Embryology
- AETCOM – 1 SAQ (Module –1.4)

1.3. Note to exam paper setters (Ref.: GMER 2019- Assessment)

1.4.A Multiple Choice Questions (MCQs) (20X1=20 Marks)
▪ 50 % of MCQ marks should be from clinically based questions (Any 10)
1.4. B Brief Answer Questions (BAQs) (10X3=30 Marks)
▪ 3 BAQ will be Reasoning Questions (In both Paper I & II)

Level of cognitive domain	**Number of questions**	**Marks**
Knowledge	4	4X3=12
Comprehension	3	3X3=9
Application	4	4X3= 12
Analysis	1	1X3=3

1.4. C Short Answer Questions (SAQs) (6X5=30 Marks)
▪ 1 SAQ will be AETCOM Questions (Paper I- 1.5 Module & II- 1.4 Module) (In section B)
▪ 1 SAQ will be clinical application based excluding integrated topics (In section B)
▪ 2 SAQs will be from integrated topics**
**List of integrated topics approved by MGMIHS

Level of cognitive domain	**Number of questions**	**Marks**
Knowledge	3	3X5=15
Comprehension	2	2X5=10
Application	3	3X5=15

1.4.D Long Answer Questions (LAQ) (2X10=20 Marks)
• Long Answer Questions (LAQ) in both Paper I & II must be structured, covering various levels of cognitive domain. (Knowledge, Comprehension and Application)

1.4.E Percentage of marks allotted to various levels of cognitive domains:

Level of cognitive domain	**Marks (Total = 76)**	**Percentage (%)**
1. Knowledge	27	35
2. Comprehension	19	25
3. Application	27	35
4. Analysis	3	4

1.4.F Verbs in various levels of cognitive domain.

Level	Suggested Verbs
Knowledge (Remember)	Define, describe, Draw, Find, Enumerate, Cite, Name, Identify, List, Label, Match, Sequence, Write, State
Comprehension (Understand)	Discuss, Conclude, Articulate, Associate, Estimate, Rearrange, Demonstrate understanding, Explain, Generalise, Identify, Illustrate, Interpret, Review, Summarise
Application (Apply)	Apply, Choose, Compute, Modify, Solve, Prepare, Produce, Select, Show, Transfer, Use
Analysis (Analyze)	Analyse, Characterise, Classify, Compare, Contrast, Debate, Diagram, Differentiate, Distinguish, Relate, Categorise
Synthesis (Create)	Compose, Construct, Create, Verify, Determine, Design, Develop, Integrate, Organise, Plan, Produce, Propose, Rewrite
Evaluation (Evaluate)	Appraise , Assess, Conclude, Critic, Decide, Evaluate, Judge, Justify, Predict, Prioritise, Prove, Rank

(Reference GMER-2019, Assessment Module Page no.17& Revised Bloom's Taxonomy by Anderson, L.W. et al in (2001))

1.4. Paper I

S. No.	Topics	MCQ (20 x 1 = 20 marks)	Brief Answer Question (BAQ) (10 x 3 = 30 marks)	Short Answer Question (SAQ) (6 x 5 = 30 marks)	Long Answer Question (LAQ) (2 x 10 = 20 marks)	Total Marks
1	Upper Limb / Thorax	3 X 1 = 3 (Upper limb) 3 X 1 = 3 (Thorax)	2 X 3 = 6 Upper Limb and Thorax - from the region not covered in LAQ&SAQ	1 X 5 = 5 (Upper Limb/Thorax - from the region not covered in LAQ& BAQ	1 X 10 = 10 (Upper Limb/Thorax)	27 (as option- 5)
2	Head and Neck / Neuro-anatomy	4 X 1 = 4 (HFN) 4 X 1 = 4 (Neuro-anatomy)	3 X 3 = 9 HFN/ Neuroanatomy- from the topic not covered in LAQ& SAQ	1 X 5 = 05 HFN / Neuroanatomy - from the topic not covered in LAQ& BAQ	1 X 10 = 10 HFN / Neuroanatomy	32 (as option- 8)
3	Systemic Histology Thorax / HFN / Neuro-anatomy	2 X 1 = 2	2 X 3 = 6 Thorax/HFN/ Neuroanatomy- from the topic not covered in LAQ & SAQ	1 X 5 = 5 Thorax/ HFN/ Neuroanatomy- from the topic not covered in LAQ& BAQ		13 (as option- 3)
4	Systemic Embryology Thorax / Head and Neck / Neuro-anatomy	2 X 1 = 2	2 X 3 = 6 Thorax / HFN/ Neuroanatomy - from the topic not covered in LAQ& SAQ	1 X 5 = 5 (Thorax/ HFN/ Neuroanatomy - from the topic not covered in LAQ& BAQ		13 (as option- 3)
5	Genetics	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10
6	AETCOM			1 X 5 = 5 Module 1.5		5
			2 extra* question as option from HFN/ Neuroanatomy /Relevant systemic Histology/ Relevant systemic Embryology	2 extra* question as option from Upper Limb / Thorax / HFN/ Neuroanatomy		
			- Marks are shown as option in respective topic * Extra question asked as option should be from different topic for BAQ and SAQ			
	Total	**20**	**30**	**30**	**20**	**100**

1.5. Paper II

S. No.	Topics	MCQ (20 x 1 = 20 marks)	Brief Answer Question (BAQ) (10 x 3 = 30 marks)	Short Answer Question (SAQ) (6 x 5 = 30 marks)	Long Answer Question (LAQ) (2 x 10 = 20 marks)	Total Marks
1	Lower Limb / Pelvis	2 X 1 = 2 Lower Limb 4 X 1 = 4 Pelvis	2X 3 = 6 Lower limb/ Pelvis - from the topic not covered in LAQ& SAQ	1 X 5 = 5 Lower limb/ Pelvis - from the topic not covered in LAQ& BAQ	1 X 10 = 10 (Lower Limb / Pelvis)	27 (as option- 8)
2	Abdomen	4 X 1 = 4	2X 3 = 6 - from the topic not covered in LAQ& SAQ	1 X 5 = 5 - from the topic not covered in LAQ& BAQ	1 X 10 = 10 (Abdomen)	25 (as option- 5)
3	Systemic histology Abdomen Pelvis	2 X 1 = 2	1 X 3 = 3 Abdomen/ pelvis - from the topic not covered in LAQ& SAQ	1 X 5 = 5 Abdomen/ Pelvis - from the topic not covered in LAQ& BAQ	-	5+ 5 + 5 = 15 (as option- 5)
4	Systemic embryology Abdomen Pelvis	2 X 1 = 2	1 X 3 = 3 Abdomen/ Pelvis - from the topic not covered in LAQ& SAQ		-	
5	General Anatomy (GA)	2 X 1 = 2	2 X 3 = 6			8 (as option- 3)
6	General Histology (GH)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option- 5)
7	General Embryology (GE)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option- 5)
8	AETCOM			1 X 5 = 5 Module 1.4		5
			2 extra* question as option from Lower limb/ Pelvis / abdomen / GA	2 extra* question as option 1 from Lower limb/ Pelvis and 1 from Systemic histology Systemic embryology /GH / GE		
			- Marks are shown 'as option' in respective topic * Extra question asked as option should be from different topic for BAQ and SAQ			
	Total	**20**	**30**	**30**	**20**	**100**

2. PRACTICAL EXAMINATION PATTERN

2.1 Total Practical Marks - 100 Marks (Practical- 80 Marks & Oral Viva- 20 Marks)

2.2 Practical Marks (A to G) [20+ 60+20= 100 Marks]

Sr No	**Histology**	
A.	**Spotters (10 spots)**	10x1= 10 Marks
	Distribution- 5 spots on General Histology and 5 spots on Systemic Histology	
B.	**Slide Discussion (2 slides)**	2x5= 10 Marks
	Distribution- 1slide each from General Histology and Systemic Histology	
	Total	**20 Marks**

Sr No	**Headings**	**Marks**
C.	C1. Clinical Anatomy	5
	C2. Genetics (Chart)	5
	Format- OSPE/OSVE/Viva Voce	
D.	Axial Skeleton	10
E.	Embryo (Models)	10
F.	Soft Part	
	F1. Soft part (Upper limb, thorax and HFN)	10
	F2. Soft part (Abdomen, Pelvis and Lower Limb)	10
	F3. Neuroanatomy	5
G.	Communication skill	5
	Total	**60**

2.3 Oral Viva Practical Marks (H to J) [20Marks]

Sr No	**Headings**	**Marks**
H.	Appendicular Skeleton	10
I.	Radiology(X-rays)	5
J.	Surface Living Anatomy	5
	Total	**20**
	TOTAL PRACTICAL	**20+60+20 = 100 Marks**

Resolution No. 4.9 of Academic Council (AC-51/2025):
Resolved to approve the changes in the list of alignment & integration topic from First MBBS 25-26 batch. [ANNEXURE-31].

List of Alignment &Integration topic (AITo)
1st MBBS CBME - Admission Year 2025 Onwards)
Sub- Anatomy

Sr. No.	Parent / Organizing Department	Vert. Integration	Competency	Integrated Department
1.	**Anatomy**	AN9.2 Mammary Gland (L)	AN9.2 Breast: Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	Gen. Surgery
2.	**Anatomy**	AN10.1,4,7 Axilla with axillary lymph nodes (L)	AN10.4 Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage	Gen. Surgery
3.	**Anatomy**	AN10.10,12 Shoulder joint (L)	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	Orthopaedics
4.	**Anatomy**	AN77.4,5 AN78.1,2,3 Fertilization, Implantation (1st Wk) (L)	AN78.3 Describe the process of implantation & common abnormal sites of implantation	OB-GY
5.	**Anatomy**	AN12.9,10 Spaces of Hand (L)	AN12.10 Explain infection of fascial spaces of palm	Gen. Surgery
6.	**Anatomy**	AN24.1 Pleura (L)	AN24.1 Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	Gen. Medicine
7.	**Anatomy**	AN47.13,14 Diaphragm (L)	AN47.14 Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	Gen. Surgery

8.	**Anatomy**	AN25.2 Development CVS - 2 (L)	AN25.4 Describe embryological basis of: 1) ASD, 2) ventricular septal defect	Paediatrics
9.	**Anatomy**	AN22.3,4,5 Coronary circulation (L)	AN22.4 Describe anatomical basis of ischaemic heart disease	Gen. Medicine
10.	**Anatomy**	AN25.5,6 Development CVS - 3 (L)	AN25.4 Describe embryological basis of: Fallot's tetralogy	Paediatrics
11.	**Anatomy**	AN20.3,5 Venous drainage of lower limb (L)	AN20.5 Explain anatomical basis of varicose veins and deep vein thrombosis	Gen. Surgery
12.	**Anatomy**	AN15.3,4 Femoral triangle (L)	AN15.3,4 Describe and demonstrate boundaries, floor, roof and contents of femoral triangle, Explain anatomical basis of Psoas abscess & Femoral hernia	Gen. Surgery
13.	**Anatomy**	AN17.1,2,3 Hip joint (L)	AN17.3 Describe dislocation of hip joint and surgical hip replacement	Orthopaedics
14.	**Anatomy**	AN77.5,6 AN78.5, 79.5,6 Anatomical principles in contraception, abortion & teratogens (L)	AN77.5 Enumerate and describe the anatomical principles underlying contraception	OB-GY
15.	**Anatomy**	AN18.4, 5,6,7 Knee jt.(L)	AN18.6 Describe knee joint injuries with its applied anatomy	Orthopaedics
16.	**Anatomy**	AN19. 5,6 Arches of foot (L)	AN19.6 Explain the anatomical basis of Flat foot & Club foot	Orthopaedics
17.	**Anatomy**	AN44.3,7 Rectus sheath & abdominal incisions (L)	AN44.7 Enumerate common Abdominal incisions	Gen. Surgery

18.	**Anatomy**	AN44.4,5 Inguinal canal (L)	AN44.4 Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	Gen. Surgery
19.	**Anatomy**	AN47.8,10,11 Portal Vein & circulation (L)	AN47.11 Explain the anatomic basis of hematemesis& caput medusae in portal hypertension	Gen. Surgery
20.	**Anatomy**	AN47.5,6 Extra Hepatic billiary app.(L)	AN47.6 Explain the anatomical basis of Referred pain in cholecystitis, Obstructive jaundice	Gen. Surgery
21.	**Anatomy**	AN54.1,2 Radio + Living (D) - Abdo, pelvis	AN54.2, AN25.8 Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium Study, Cholecystography, IVP & HSG)	Radiology
22.	**Anatomy**	AN 48.2,5,8 Anal canal (L)	AN48.5 Explain the anatomical basis of Int. & external haemorrhoids, Anal fistula	Gen. Surgery
23.	**Anatomy**	AN 49.1,2,3,5 Perineal pouches (L)	AN49.5 Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess	OB-GY
24.	**Anatomy**	AN27.1,2 Scalp(L)	AN27.1 Describe the layers of scalp, its blood supply, its nerve supply and surgical importance	Gen. Surgery
25.	**Anatomy**	AN 70.1 Salivary glands - Histo (L)	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	Pathology
26.	**Anatomy**	AN 31.2,5 3rd cranial nerve (L)	AN31.5 Explain the anatomical basis of oculomotor, nerve palsies along with strabismus	Ophalmology
27.	**Anatomy**	AN 31.2,5 4,6th cranial nerves (L)	AN31.5 Explain the anatomical basis of trochlear and abducent nerve palsies along with strabismus	Ophalmology

28.	**Anatomy**	AN 36.1,4 Palatine tonsil (L)	AN36.4 Describe the anatomical basis of tonsillitis, tonsillectomy and peri-tonsillar abscess	ENT
29.	**Anatomy**	AN 37.2,3 Para nasal air sinus (L)	AN37.3 Describe anatomical basis of sinusitis & maxillary sinus tumours	ENT
30.	**Anatomy**	AN38.1,2,3 Larynx-II (L)	AS4.2 Describe the Anatomy of the airway and its implications for general anaesthesia	Anaesthesiology
31.	**Anatomy**	AN40.2,4,5 Middle ear cavity (L)	AN40.4 Explain anatomical basis of otitis externa and otitis media, AN40.5 Explain anatomical basis of myringotomy	ENT
32.	**Anatomy**	AN28.5, AN35.5 cervical lymph nodes and lymphatic drainage of HFN (L)	AN35.5 Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes	Gen. Surgery
33.	**Anatomy**	AN 57.3,4,5 Spinal Cord -II (L)	AN57.4 Enumerate ascending & descending tracts at mid thoracic level of spinal cord	Gen. Medicine
34.	**Anatomy**	AN 62.2 Cerebrum - II (L)	AN62.2 Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere	Gen. Medicine
35.	**Anatomy**	AN 62.6 Blood supply of brain (L)	AN62.6 Describe & identify formation, branches & major areas of distribution of circle of Willis	Gen. Medicine
36.	**Anatomy**	AN64.2 Devt. CNS 3 - (L)	AN64.3 Describe various types of open neural tube defects with its embryological basis	Paediatrics
37.	**Anatomy**	AN56.2, AN 63.1,2 4TH Ventricle & CSF circulation(L)	AN50.3 Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture), AN56.2 Describe circulation of CSF with its applied anatomy	Gen. Medicine

38.	**Anatomy**	AN 42.1 ,50.1,2,4 Vertebral column & vertebral canal with its contents (L)	AN50.4 Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	Orthopaedics
39.	**Anatomy**	AN 35.2,8 Thyroid gland (L)	AN 35.2,8 Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland Describe the anatomically relevant clinical features of Thyroid swellings	Anatomy & Biochemistry, Pathology, General Surgery

Resolution No. 4.15 of Academic Council (AC-50/2024): Resolved to approve and implement the alignment of topics of Phase I subjects with the permission of few changes at local institute level if required. **[ANNEXURE-35]**

- Phase I MBBS Alignment

(ANATOMY, PHYSIOLOGY, BIOCHEMISTRY)

Suggested Phase-I Alignment Table (Anatomy, Physiology & Biochemistry) (Topics written here are indicative and can be adjusted if required)			
Month	**Anatomy**	**Physiology**	**Biochemistry**
1	-General Anatomy -Lower Limb (LL)	General Physiology, Blood	Cell membrane and organelles, extracellular matrix, Chemistry of carbohydrates, amino-acid & proteins, Lab Safety and Biomedical Waste Management and Chromatography (Demo)
2	-LL/UL -General Embryology & Histology	Blood, N-M	Plasma protein, immunoglobulins, Enzymes, Hemoglobin structure and Hemoglobinopathies, Electrophoresis (Demo), Heme synthesis, Porphyria's, Hemecatabolism, iron metabolism (mineral) Bilirubin formation, Jaundice, colorimetry (Demo)
3	UL -General Embryology & Histology	ANS, CVS	Clinical Enzymology, Chemistry of lipids, and lipoprotein metabolism, carbohydrate metabolism, vitamins, Estimation of Protein and albumin
4	-Abdomen -Related Systemic Embryology & Histology	GIT, Renal	Vitamins, Nutrition, Liver Function Tests, Renal Function Tests, acid-base balance and its disorders, water and electrolyte normal and abnormal analysis of urine(DOAP), Estimation of Urea, creatinine
5	-Abdomen,Pelvis -Related Systemic Embryology & Histology	GIT (contd.), Repro.	Metabolism of proteins and their metabolic disorders, Metabolism of carbohydrates and their metabolic disorders, Diabetes mellitus, Electron transport chain and oxidative phosphorylation, Xenobiotics, Estimation of Glucose.
6	-Thorax -Related systemic Embryology & Histology	Repro (contd.), RS	Metabolism of lipids (remaining) and disorders, Metabolism of proteins, minerals, vitamins, Reproductive Hormones, Prenatal screening, new born screening.
7	H & N–I -Related Systemic Embryology & Histology, Genetics	Endocrine (Neck region), CNS	Hormone Biochemistry; Tumour markers and, Thyroid Function Tests, Adrenal Function tests, Free radicals, and antioxidants
8	H & N–II -Related Systemic Embryology & Histology, Genetics	CNS contd , Special senses	Purine and pyrimidines metabolism, gout, purine salvage pathway, replication, DNA damage and repair mechanism, transcription, translation, post-translational modifications, protein synthesis inhibitors, genetic code, and mutations, estimation of uric acid
9	- Neuroanatomy -Related Systemic Embryology & Histology	CNS (Contd.) Integrated physiology	Molecular biology techniques and Miscellaneous.

Resolution No. 5.11 of Academic Council (AC-48/2023): Resolved to accept revised books of list for Anatomy, Physiology and Biochemistry from first MBBS 2023-24 Batch onwards **[ANNEXURE-20A].**

LIST OF Anatomy BOOKS FOR FIRST MBBS (CBME batch)-2023-24

SR.NO.	NAME OF THE BOOK	EDITION
	GROSS ANATOMY	
1.	BD chaurasia'sHuman Anatomy- vol.1,2,3,4	8th
2.	Vishramsingh'sTextbook of Anatomy- vol. 1,2,3	3rd
3.	Vishramsingh'sTextbook of neuroanatomy	4th
4.	BD chaurasia'sGeneral Anatomy	6th
5.	Netter's Human Anatomy Atlas	7th
6.	Grant's Human Anatomy Atlas	13th
7.	Vishramsingh's General Anatomy	
8.	Gray's anatomy for students	
	DISSECTOR MANUAL	
1.	Thieme Dissector- vol.1,2,3	2nd
2.	Cunningham's Manual of Practical Anatomy- vol.1,2,3	16th
	EMBRYOLOGY	
1.	Textbook of Human Embryology- Yogesh Sontakke	1st
2.	InderbirSingh's Human Embryology	12th
3.	Langman's Medical Embryology	13th
	HISTOLOGY	
1.	Inderbirsingh's Textbook of Human Histology	9th
2.	JP Gunsegaran Textbook of Histology	3rd
3.	Histology text and atlas – Brijesh Kumar	2nd
	GENETICS	
1.	GP Pal Textbook of Medical Genetics	3rd
2.	Human Genetics – S. D. Gangane	4th
	SURFACE ANATOMY AND RADIOLOGY	
1.	Surface and Radiological Anatomy – A. Halim	3rd
	AETCOM	
1.	Salubris Prep Manual Of AETCOM	1st

Resolution No. 5.11 of Academic Council (AC-48/2023): Resolved to accept revised books of list for Anatomy, Physiology and Biochemistry from first MBBS 2023-24 Batch onwards **[ANNEXURE-20A].**

LIST OF Anatomy BOOKS FOR FIRST MBBS (CBME batch)-2023-24

REFERENCE

SR.NO.	NAME OF THE BOOK	EDITION
	GROSS ANATOMY	
1.	Gray's Anatomy	41st
2.	Snell's Clinical Anatomy	9th
3.	Neeta Kulkarni's Clinical Anatomy	2nd
4.	A. K. Datta- Essentials of Human Anatomy	9th
	EMBRYOLOGY	
1.	Keith Moore's Clinical Embryology	10th
2.	A. K. Datta- Essentials of Human Embryology	3rd
	HISTOLOGY	
1.	Janqueira's Basic Histology	13th
2.	Difiore's Atlas of Histology	12th
	GENETICS	
1.	Emery's Elements of Medical Genetics	14th
	EARLY CLINICAL EXPOSURE	
1.	A Case Based Approach in Clinical Anatomy-Ajay Kumar, Anu Sharma	1st
2	Clinical Case Discussion in Anatomy- Ritesh Shah	1st
3.	Communication Skills in Clinical Practice - KR Sethuraman	
4.	Textbook of Early clinical Exposure Setting and Planning - Dr. Motilal C Tayade	

Resolution No. 4.1 of Academic Council (AC-50/2024): Resolved to approve and accept the changes in the first MBBS Anatomy syllabus both for the Theory and Practical as per new CBME guidelines dated on 12/09/2024. [ANNEXURE-21]

COMPETENCY BASED MEDICAL EDUCATION

(CBME) CURRICULUM 2024

1. (2024-25 batch Onwards) Preamble

The new Graduate Medical Education Regulations (GMER) attempt to stand on the shoulders of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to prepare the learner to provide health care to the evolving needs of the nation and the world.

Following the Regulations on Graduate Medical Education (GMER) 1997, a new crisp 'avatar' in the form of GMER 2023 was placed last year. It was time to have a relook at all aspects of the various components in the existing regulations and guidelines, and adapt them to the changing demography, socio-economic context, perceptions, values, advancements in medical education and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration.

The thrust in the new guidelines is put on continuation and evolution of medical education based on feedback and experience of CBME in the last 5 years since its inception in 2019, making it more learner-centric, patient-centric, gender- sensitive, outcome-oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using "broad competencies"; instead, the reports have written end of phase subject competencies. These "competencies" can be mapped to the global competencies in the Graduate Medical Education Regulations.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated time in curriculum in the form of a longitudinal program titled 'AETCOM' based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought, socioeconomic position and gender.

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. The first contact physician needs to be skillful to perform duties of primary care physician and have requisite skills for promotive, preventative, rehabilitative, palliative care & referral services.

3. National Goals

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

a) Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his social obligations towards realization of this goal.
b) Learn key aspects of National policies on health and devote himself to its practical implementation.
c) Achieve competence in the 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 an exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

4. 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 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.

a. Be competent for working in the health care team from Phase 1 MBBS to Compulsory rotatory medical internship (CRMI) in a gradual manner with increasing complexity in an integrated multi-department involvement.

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 the "essential medicines" and their common adverse effects.

d. 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 and advocacy;

    vi) Indian Public Health Standards (IPHS) at various level 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, 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 with maximum community participation.

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.

5. Goals for the Learner

In order to fulfill these goals, the Indian Medical Graduate must be able to function in the following Roles appropriately and effectively:-

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

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

c. Communicate with patients, families, colleagues, and community in a methodological and skillful way using various approaches in family visits, family adoption program, clinic-social cases, clinical cases and AETCOM training programs.

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

e. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession and society. Training of humanities and social sciences will be useful for this training.

6. 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 fulfill the roles, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

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

- Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.
- Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence healthcare.
- Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to elicit and record from the patient, and other relevant sources. including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and

values.

- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that confirm to established national and regional health programmers and policies for the following:
    - Disease prevention,
    - Health promotion and cure,
    - Pain and distress alleviation, and
    - Rehabilitation and palliation.
- Demonstrate ability to provide a continuum of care at the primary (including home care) and/or secondary level that addresses chronicity, mental and physical disability,
- Demonstrate ability to appropriately identify and refer patients who may require· specialized or advanced tertiary care.
- Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

Leader and member of the health care team and system

- Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings. Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- Recognize and advocate health. promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

Communicator with patients, families, colleagues and community

- Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients, families, colleagues and community in a language that they understand and in a manner that will be mutually satisfying and beneficial to them as well as care givers cum learners to yield positive health care outcomes.
- Demonstrate ability to establish professional relationships with patients, families, colleagues and community that are positive, understanding, humane, ethical, empathetic, and trustworthy.

- Demonstrate ability to communicate with patients, families, colleagues and community in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

- Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making and overcoming hesitancy towards health initiatives.

Lifelong learner committed to continuous improvement of skills and knowledge

- Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
- Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
- Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning. Demonstrate ability to search (including through electronic means), and critically re- evaluate the medical literature and apply the information in the care of the patient.
- Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

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

- Practice selflessness, integrity, responsibility, accountability and respect.
- Respect and maintain professional boundaries between patients, colleagues and society.
- Demonstrate ability to recognize and manage ethical and professional conflicts.
- Abide by prescribed ethical and legal codes of conduct and practice.
- Demonstrate commitment to the growth of the medical profession as a whole.

A. CURRICULUM (subject wise competencies are given in Competency Based Undergraduate Curriculum 2024 on NMC website)

- **Phase 1 :**

1. ANATOMY

Subject Goals:

At the end of anatomy teaching, a student should be able to demonstrate:

i. Comprehension of normal structure, development and genetic pattern of organ and organ systems, as well as the clinical correlation of structures involved in diseases and its anatomical basis.

ii. Comprehension of the normal disposition, clinically relevant inter-relationships, functional and cross -sectional Anatomy of the various organs and structures of the body.

iii. Identification of the microscopic structure of various organs and tissues with the functions, as a prerequisite for understanding the altered state in various disease processes.

iv. Basic principles and sequential development of the organs and systems; recognize the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards.

v. Principles of karyotyping and identify the gross congenital anomalies.

vi. Principles of newer imaging techniques and interpretation of CT scan, sonogram, MRI & Angiography.

2. PHYSIOLOGY

Subject Goals:

At the end of physiology teaching, the learner must be able to:

i. Demonstrate knowledge of normal human physiology, organizational and functional relationship between cells, tissues and organs and body systems, age and sex related physiological changes in the organ functions that reflect normal growth and development.

ii. Explain physiological variations (Genotype/Phenotype) with healthy ageing through the course of life i.e. fetal, neonatal, childhood, adolescence and adulthood and demonstrate understanding of the physiological responses and adaptation to environment and exercise.

iii. Perform experiments to demonstrate physiological phenomenon and principles, interpret investigation results falling within the scope of physiology.

iv. Apply principles of Physiology in clinicopathological conditions, diagnosis, investigations and management of diseased conditions.

v. Conduct physical examination (general and system based) of normal subject in real or simulated conditions and demonstrate understanding of altered findings in physical examination of diseased conditions.

3. BIOCHEMISTRY

Subject Goals:

The learner after teaching learning in Biochemistry should be able to:

i. Understand and explain Biochemical and molecular processes involved in health and disease.

ii. Enlist and describe the cell organelles with their molecular and functional organization.

iii. Understand basic enzymology and emphasize on its clinical applications wherein regulation of enzymatic activity is disturbed.

iv. Describe Importance of nutrition in health and disease.

v. Describe digestion and assimilation of nutrients and consequences of

malnutrition.

vi. Describe function and interrelationships of various biomolecules and consequences of deviation from the normal.

vii. Describe and integrate metabolic pathways of various biomolecules with their regulatory mechanisms relevant to clinical conditions.

viii. Describe Biochemical basis and rationale of clinical laboratory tests, Perform biochemical analytical tests relevant to clinical screening and diagnosis using conventional techniques / instruments and interpret investigative data.

ix. Explain the biochemical basis of inherited disorders with their associated sequel.

x. Describe mechanisms involved in maintenance of water, electrolyte and acid base balance and consequences of their imbalances.

xi. Outline basics genetics, explain the molecular mechanisms of gene expression and regulation, basic principles of biotechnology and latest techniques and their applications in medicine.

xii. Demonstrate the skills of solving scientific and clinical problems and decision making.

- **Phase 2 :**

4. PATHOLOGY

Subject Goals:

At the end of the teaching learning in pathology learner should be able to:

i. Demonstrate knowledge of causes, mechanisms, alterations in gross and cellular morphology of organs in disease states.

ii. Explain, interpret and analyse the pathology with clinical condition including diseases which are locally and regionally relevant.

iii. Perform experiments to demonstrate routine pathological investigations on blood and explain principles, interpret investigation results.

iv. Perform experiments to demonstrate routine pathological investigations on the various biological samples and explain principles, interpret investigation results.

v. Demonstrate updated pathological investigations on the various biological samples.

5. MICROBIOLOGY

Subject goals

At the end of Microbiology teaching-learning activities learner should be able to:

i. Comprehend the immunological mechanisms in health and disease.

ii. Comprehend the of role of microbial agents in health and disease.

iii. Correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents.

iv. Comprehend the principles and application of infection control measures.

v. Comprehend the basis of choice of laboratory diagnostic tests and their interpretation.

vi. Comprehend the principles of antimicrobial therapy and the control and prevention of infectious diseases.

vii. Comprehend the mechanisms of antimicrobial resistance (AMR) and its prevention along with concept and application of the antimicrobial stewardship program.

viii. Demonstrate the knowledge of outbreak investigation and its control.

ix. Describe commensals, opportunistic and pathogenic organisms and explain host parasite relationship.

x. Describe the characteristics (morphology, cultural characteristics, resistance, virulence factors, incubation period, mode of transmission etc.) of different microorganisms.

xi. Explain the various defense mechanisms of the host against the microorganisms which can cause human infection.

xii. Describe the laboratory diagnosis of microorganisms causing human infections and disease.

xiii. Describe the prophylaxis for the particular infecting microorganisms.

xiv. Operate routine and sophisticated instruments in the laboratory.

xv. Demonstrate respect for patient samples, confidentiality pertaining to patient identity in laboratory results and effective communication skills in patient care.

6. PHARMACOLOGY

Subject Goals:

At the end of teaching learning in pharmacology, the student should be able to:

i. Know about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics.

ii. Apply pharmacokinetic and pharmacodynamic concept of drugs to drug selection and dosage regimens.

iii. Explain mechanism of action of commonly used drugs.

iv. Select and rationally prescribe drugs based on clinical condition and the pharmacologic properties, efficacy, safety and cost of medicines for common clinical conditions of national importance.

v. Understand generic, branded, over the counter (OTC) and prescription only drugs.

vi. Understand pharmacovigilance and identify adverse drug reactions and drug

interactions of commonly used drugs.

vii. Understand essential medicine concept and explore sources of drug information.

viii. Administer drugs through various common routes of administration.

ix. Understand and apply concept of evidence based medicine and rational use of drugs.

x. Communicate well in imparting drug related information to patients.

xi. Knows basics of new drug delivery and industry-doctor relationship.

xii. Critically analyze drug promotional literature and drug formulations.

xiii. Understand regulatory and ethical aspects of drug discovery and drug use.

- **PHASE III PART I**

7. FORENSIC MEDICINE AND TOXICOLOGY

Subject Goals:

At the end of teaching learning in forensic medicine and toxicology, the student should be able to:

i. Comprehend Medico-legal responsibilities of a general physician while rendering community service either in a rural primary health center or an urban health center.

ii. Comprehend of basic Medico-legal aspects of hospital and general practice.

iii. Understand the rational approach to the investigation of crime, based on scientific and legal principles.

iv. Understand the medico-legal framework of medical practice, codes of conduct, medical ethics, Professional Misconduct and Medical Negligence.

v. Conduct Medico-legal examination and documentation of various Medico-legal cases.

vi. Identify and interpret important post-mortem findings in common unnatural deaths.

vii. Conduct postmortem examination and Preparation of postmortem reports in unnatural deaths- Suicidal, Homicidal, Accidental.

viii. Prepare Medical Certificate of Cause of Death (MCCD) and Medico-legal reports of injuries and age estimation.

ix. Conduct examination and documentation of sexual offences, intoxication cases and preservation of relevant ancillary materials for medico-legal examination.

x. Analyse, Diagnose, manage legal aspects of common acute and chronic poisoning cases.

xi. Understand of latest Acts and laws related to medical professional including related Court judgements e.g. MTP Act, CPA, HOTA etc.

8. COMMUNITY MEDICINE

Subject Goals:

At the end of teaching learning in Community Medicine, the student should be able to:

i. Demonstrate understanding of role of primary care physician for preventive, promotive, curative, rehabilitative, palliative care & referral services.

ii. Demonstrate understanding of the concept of health and disease, demography, population dynamics and disease burden in National and global context, comprehension of principles of health economics and hospital management.

iii. Apply the understanding of physical, social, psychological, economic and environmental determinants of health and disease, ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes,

iv. Ability to implement and monitor National Health Programmes in the primary

care setting, ability to recognize, investigate, report, plan and manage community health problems including malnutrition and emergencies.

v. Apply understanding the role of nutrition in health promotion and disease prevention.

vi. Demonstrate role of researcher & community medicine physician by understanding the concepts of various epidemiological study designs and their application and epidemiology of diseases and ability to critically review.

vii. Demonstrate understanding of pandemic and epidemic situations with emerging and re-emerging diseases and able to investigate under supervision and plan, advise and promote preventive aspects as per international and national health regulations and programs.

viii. Demonstrate understanding of all principles of public health, community medicine, preventive aspects, social aspects utilizing family adoption program , providing services to the families adopted and being first care physician under the guidance of mentor.

ix. Apply the principles of behaviour change communication for improving health related aspects for communicable, non-communicable diseases, health promotive aspects, related to addictions, health related information and misinformation.

9. OTO-RHINOLARYNGOLOGY (ENT)

Subject Goals:

At the end of training in ENT, the learner should be able to:

i. Demonstrate knowledge of the common Otorhinolaryngological (ENT) emergencies and problems.

ii. Recognize, diagnose and manage common ENT emergencies and problems in primary care setting.

iii. Perform simple ENT procedures as applicable in a primary care setting.

iv. Recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme.

v. Communicate to patients in respectful non-threatening non-judgmental empathetic manner appropriately Identify, discuss and defend medicolegal socio cultural and ethical issues as they pertain to consent for ENT surgical procedures and address patients queries in patient undergoing a basic ENT surgical procedure in a simulated environment.

10. OPHTHALMOLOGY

Subject Goals:

The student after teaching / learning in Ophthalmology should be able to:

i. Demonstrate knowledge of common eye disease in the community and the ability to diagnose and manage the common eye disease in primary care set up.

ii. Recognize diagnose and manage (primary management) of ocular emergencies in primary care setting and have knowledge of the indication for their referral.

iii. Demonstrate knowledge about various cause of blindness and visual impairment in the community.

iv. Know about various national programs for the control of blindness in the community and their implementation in the primary care setting.

v. Demonstrate knowledge about common Ocular drugs, their mechanism of action, their pharmaceutical, indications dosage schedule, side effects and complications.

vi. Demonstrate knowledge about common ocular surgeries, their indication and counselling regarding various ocular procedures and indications for referral from primary care setting.

vii. Demonstrate knowledge about eye donations, eye transplantation and eye bank.

viii. Perform simple ocular procedures as applicable in primary care setting.

ix. Be a team member of national program for control of blindness.

x. Have good rapport with public, colleagues, superiors and subordinates.

xi. Counsel patients and their families regarding various ocular conditions, management, indication for referral.

xii. Counsel the blind and visually impaired patients regarding their Rehabilitation.

- **Phase III PART** - II

11. GENERAL MEDICINE

Subject Goals:

At the end of training learning in general medicine, the learner should be able to:

i. Demonstrate understanding of the pathophysiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management.

ii. Competently interview and examine an adult patient and make a clinical diagnosis.

iii. Appropriately order and interpret laboratory tests.

iv. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures.

v. Follow up of patients with medical problems and refer whenever required.

vi. Communicate effectively, educate and counsel the patient and family.

vii. Manage common medical emergencies and refer when required.

viii. Independently perform common medical procedures safely and understand patient safety issues.

ix. Diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases.

x. Outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications.

xi. Propose diagnostic and investigative procedures and ability to interpret them.

xii. Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.

xiii. Recognize geriatric disorders and their management.

xiv. Develop clinical skills (history taking. clinical examination and other instruments of examination) to diagnose various common medical disorders and emergencies;

xv. Refer a patient to secondary and/or tertiary level of health care after having instituted primary care.

xvi. Perform simple routine investigations like hemogram, stool, urine, sputum and biological fluid examinations.

xvii. Assist the common bedside investigative procedure like pleural tap, Lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.

12. PEDIATRICS

Subject Goals:

At end of training on pediatrics, the student should be able to:

i. Assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal.

ii. Recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate.

iii. Perform procedures as indicated for children of all ages in the primary care setting.

iv. Recognize children with special needs and refer appropriately.

v. Promote health and prevent diseases in children.

vi. Participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy.

vii. Communicate appropriately and effectively.

viii. Describe the normal Growth and Development during fetal life, Neonatal period, Childhood and Adolescence and the deviations thereof.

ix. Describe the common Pediatric disorders and emergencies in terms of Epidemiology, Etiopathogenesis, Clinical manifestations, Diagnosis and also describe the rational therapy and rehabilitation services.

x. Workout age related requirements of calories, nutrients, fluids, dosages of drugs etc. in health and disease.

xi. Describe preventive strategies for common infectious disorders, Malnutrition, Genetic and Metabolic disorders, Poisonings, Accidents and Child abuse.

xii. Outline national programs related to child health including Immunization programs.

xiii. Take detailed Pediatric and Neonatal history and conduct an appropriate physical examination of children and neonates, make clinical diagnosis, conduct common.

xiv. Bedside investigative procedures, interpret common laboratory investigations, plan and institute therapy.

xv. Take anthropometric measurements, resuscitate newborn, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current National programs, perform venesection, start intravenous fluids and provide nasogastric feeding.

xvi. Must have seen diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural and ascitic tap, if not performed, and must know all steps of each procedure.

xvii. Distinguish between normal Newborn babies and those requiring special care and institute early care to all newborn babies including care of preterm and low birth weight babies, provide correct guidance and counseling about

breastfeeding and Complementary feeding.

xviii. Provide ambulatory care to all not so sick children, identify indications for specialized/ inpatient care and ensure timely referral to those who require hospitalization.

13. DERMATOLOGY, VENEREOLOGY AND LEPROSY

Subject Goals:

At the end of training, the learner should be able to:

i. Understand the principles of diagnosis of diseases of the skin, hair, nail and mucosa.
ii. Recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate.
iii. Learn a syndromic approach to the recognition, diagnosis, prevention, counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities.
iv. Recognize and treat emergencies including drug reactions and refer as appropriate.
v. Counsel and provide patient education on safe sexual behaviors/ disease prevention/ prognosis including pretest counseling for HIV.

14. PSYCHIATRY

Subject Goals:

At the end of training, the learner should be able to:

i. Promote mental health and mental hygiene.

ii. Identify clinical features, make diagnosis and manage common psychiatric disorders across all ages.

iii. Identify and manage psychotic disorders, mainly schizophrenia.

iv. Identify and manage stress related psychiatric disorders, institute preliminary treatment in disorders difficult to manage, and refer appropriately.

v. Identify alcohol/ substance abuse disorders and refer them to appropriate centers.

vi. Assess the risk for suicide and refer appropriately.

15. GENERAL SURGERY

Subject Goals:

At the end of training in general surgery, the student should be able to:

i. Understand the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children.

ii. Choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition.

iii. Apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice.

iv. Know common malignancies in India and their prevention, early detection and therapy.

v. Perform common diagnostic and surgical procedures at the primary care level.

vi. Know general knowledge about organ retrieval from deceased donor and living donor.

vii. Administer informed consent and counsel patient prior to surgical procedures.

viii. Describe etiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies in adult and children.

ix. Describe common malignancies in the country and their management including prevention.

x. Enumerate different types of anesthetic agents, their indications, contraindications, mode of administration, and side effects.

xi. Plan various laboratory tests for surgical conditions and interpret the results.

xii. Identify and manage patients of hemorrhagic, septicemia and other types of shock.

xiii. Recognize, resuscitate, stabilize and provide Basic Life Support to patients following trauma.

xiv. Monitor patient of head, chest, spinal and abdominal injuries, both in adults and children.

xv. Provide primary care for a patient of burns.

xvi. Acquire principles of operative surgery including preoperative, operative and post operative care and monitoring.

xvii. Treat open wound including preventive measures against tetanus and gas gangrene.

16. OBSTETRICS AND GYNAECOLOGY

Subject Goals:

At the end of training in Obstetrics and gynecology, the learner should be able to:

i. Provide preconceptional counseling and antenatal care.

ii. Identify high-risk pregnancies and refer appropriately.

iii. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings.

iv. Prescribe drugs safely and appropriately in pregnancy and lactation.

v. Diagnose complications of labor, institute primary care and refer in timely manner.

vi. Perform early neonatal resuscitation.

vii. Provide postnatal care, including education in breast-feeding.

viii. Counsel and support couples in correct choice of contraception.

ix. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient.

x. Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy (MTP), Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act) and other related Acts.

xi. Elicit gynecologic history, perform appropriate physical and pelvic examinations and PAP smear in the primary care setting.

xii. Recognize, diagnose and manage common reproductive tract infections in the primary care setting.

xiii. Recognize and diagnose common genital cancers and refer them appropriately.

17. ORTHOPAEDICS

Subject Goals:

At the end of training in orthopedics, the learner should be able to:

i. Demonstrate ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral.

ii. Recognize and manage common infections of bone and joints in the primary care setting.

iii. Recognize common congenital. metabolic, neoplastic, degenerative and inflammatory bone diseases, treat and refer appropriately.

iv. Perform simple orthopedic techniques as applicable to a primary care setting.

v. Recommend rehabilitative services for common orthopedic problems across all ages.

vi. Know the medico-legal aspects of trauma.

18. ANAESTHESIOLOGY

Subject Goals:

At the end of training in anesthesiology, the learner should be able to:

i. Explain principles of administration of general, regional and local anaesthesia including selection of cases, pre-operative evaluation, optimisation and recovery.

ii. Comprehend management of acute and chronic pain including labour analgesia

iii. Clear and maintain airway in an unconscious patient.

iv. Explain principles of oxygen therapy, select oxygen delivery devices and administer oxygen therapy judiciously.

v. Perform cardiopulmonary resuscitation with available resources and transfer the patient to higher centre for advanced life support.

vi. Comprehend the implications and obtain informed consent for various procedures and maintain the documents.

19. RADIODIAGNOSIS

Subject Goals:

i. Make rational choice of imaging modality and imaging procedure for common diseases

ii. Exhibit mindful behaviour regarding risks associated with imaging modalities

iii. Exhibit appropriate interdisciplinary conduct and documentation

iv. Image interpretation of normal x-rays, abnormalities in x-rays involving emergency conditions and diseases that would be treated by the primary care physician.

PHASE WISE TRAINING AND TIME DISTRIBUTION FOR PROFESSIONAL DEVELOPMENT

Subject wise competencies published in Competency Based Undergraduate Curriculum 2024 on NMC website and Attitude, Ethics and Communication (AETCOM) course, as published by the Medical Council of India and also made available on the NMC website, shall be the curriculum for the batches admitted in MBBS from the academic year 2024-25 onwards. **Teaching learning and assessment may be carried out using bilingual mode (Assamese, Bangla, Gujarati, Hindi, Kannada, Malayalam, Marathi, Odiya, Punjabi, Tamil, and Telugu) along with English language.**

In order to ensure that training is in alignment with the goals and competencies required for a medical graduate, there shall be a **Foundation Course to** orient medical learners to MBBS programme, and provide them with requisite knowledge, communication (including electronic), technical and language skills.

I. Training period and time distribution:

Universities shall organize admission timing and admission process in such a way that teaching in the phase I commences with induction through the Foundation Course at the beginning of academic year. There shall be no admission of students in respect of any academic session beyond dates specified for each academic year. **The Universities shall not register any student (in MBBS course) admitted beyond the said date.** Any student identified as having obtained admission after the last date for closure of admission shall be discharged from the course of study, or any medical qualification granted to such a student shall not be a recognized qualification by National Medical Commission.

The institution which grants admission to any student after the last date specified from the same shall also be liable to face such action as may be prescribed by National Medical Commission.

Every learner shall undergo a period of certified study extending over 4 ½ academic years, divided into four professional years from the date of commencement of course to the date of completion of examination which shall be followed by one year of compulsory rotating medical internship.

Each academic year will have at least 39 teaching weeks with a minimum of 39 hours a week.

Large group teaching shall not exceed one third of the total allotted hours for a subject. Two third of the total allotted hours shall include small group teaching, interactive sessions, practicals, clinical, small group teaching, self-directed learning and tutorials etc. The learning process shall include clinical experiences, problem- oriented approach, case studies and community health care activities.

Learner centered teaching learning methods shall include early clinical exposure, problem/case-based learning, case studies, community-oriented learning, self-directed, integrated learning, experiential learning & electives. Teaching and learning shall be aligned and integrated across specialties both vertically and horizontally for better learner comprehension.

At the end of each professional year university examination will be conducted. If any student fails to clear the regular university examination, student will appear in supplementary examination.

Supplementary examinations and declaration of results shall be processed by universities within 6-8 weeks from the date of declaration of the results of the main examination for every professional year, so that the candidates, who pass, can join the main batch for progression.

If the student fails in the supplementary examination in any phase of MBBS, the student goes to the junior batch for teaching learning as well as for university examinations. There shall be no supplementary batches. If a candidate has not appeared for university examination (both theory and practical) for a subject then it shall not be counted as an attempt for that subject. Partial attendance in examination (only theory or only practical) in any subject shall be counted as an attempt. No more than four attempts shall be allowed for a candidate to pass the Phase 1 examination. The total period for successful completion of phase I course shall not exceed four (4) years. A learner shall not be entitled to graduate later than ten (10) years of her/his joining the first MBBS course (including continuous rotatory medical internship).

Phase wise details are:

- A candidate, who fails in the Phase-I examination, shall not be allowed to join the Phase-II until the candidate passes all subjects of Phase-I examination.
- A candidate who fails in the Phase-II examination, shall be allowed to join the Phase-III Part I training, however candidate shall not be allowed to

appear for the university examination unless the candidate has passed Phase-II university examination and completed eligibility requirement for Phase-III Part I university examinations.

- A candidate who fails in the Phase-III Part I examination shall be allowed to join Phase-III part II training, however candidate shall not be allowed to appear for the university examination unless the candidate has passed Phase-III Part-I university examination and completed eligibility requirement for Phase-III Part II university examinations.

II. The period of 4½ years is divided as follows:

i) **Phase-I of 12 months including Foundation Course of two weeks and university exams.** It shall consist of - Anatomy, Physiology, Biochemistry, Introduction to Community Medicine, Humanities, Attitude, Ethics & Communication (AETCOM) module, family adoption programme through village outreach where-in each student shall adopt minimum of three (03) families and preferably at least five (05) families, simulation-based learning, early clinical exposure, alignment & integration and pandemic module integrated.

ii) **Phase-**II **of 12 months including university exams.** It will consist of Pathology, Pharmacology, Microbiology, family visit under Community Medicine, General Surgery, General Medicine, Obstetrics & Gynecology, AETCOM module, Forensic Medicine & Toxicology, alignment & integration and introduction to clinical subjects. Family Adoption Programme through village outreach where-in each student shall continue to follow up and provide necessary services under the supervision. Pandemic module integration & simulation-based learning to be continued with increasing complexity.

The clinical exposure to learners will be in the form of learner-doctor method of clinical training in all phases. The emphasis will be on primary, preventive and comprehensive health care. A part of training during clinical postings shall take place at the *primary level* of health care. It is desirable to provide learning experiences in secondary health care, wherever possible. This will involve:

- Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,
- Involvement in patient care as a team member,
- Involvement in patient management and performance of basic procedures.

iii) **Phase** III - **30 months**

a. Phase III Part I **(12 months, including University exams)**

Forensic Medicine and Toxicology, Community Medicine, Medicine & allied subjects, Ophthalmology, Otorhinolaryngology (ENT), Surgery & allied subjects, Pediatrics, Obstetrics& Gynecology, Radiodiagnosis, Anesthesiology, AETCOM, Pandemic module integration, alignment & integration and Clinical postings. Family Adoption Programme through village outreach and simulation- based learning to be continued with increasing complexity.

Electives (1 month) shall be in 2 blocks of 15 days each in Phase III part II. First 15days block starts after annual exam of Phase III MBBS part 1 and 2nd block after the end of 1st elective.

b. Phase 3 Part II(18 months, including University exam)-

Subjects include:

Medicine and allied specialties (General Medicine, Psychiatry, Dermatology, Venereology and Leprosy (DVL), Surgery and allied specialties (General Surgery, Orthopedics, Anesthesiology and Radiodiagnosis), Obstetrics and Gynecology (including Family Welfare), Pediatrics, AETCOM module, Pandemic module integration, alignment & integration and Clinical postings.

Ill. Distribution of teaching hours phase wise:

a Phase I, phase II and phase III- part 1 teaching hours:

Time allotted 12 months (approximately 52 weeks) out of which time available for teaching- learning: approximately 39 weeks.

(Excluded- 13 weeks: Preliminary/ University examinations and results: 9 weeks, vacations: 2 weeks, public holidays: 2 weeks)

Time distribution in weeks: 39 weeks x 39 hours = 1521 hours for Teaching-Learning.

b Phase-III Part-II, teaching hours:

Time allotted: 18 months (approx. 78 weeks)

Time available: Approx. 62 weeks (excluding 16 weeks) (39 hours/ week)

Prelim / University Exam & Results: 10 weeks

Vacation: 3 weeks

Public Holidays: 3 weeks

Time distribution in weeks: 62 x 39 hrs= 2418 hrs available for Teaching-Learning

(Clinical Postings: 15 hours/ week Phase II onwards included in academic schedule. These are attached in separate annexure with all relevant tables).

- Academic calendar is given in annexure.
- Distribution of subjects for Professional Phase-wise training is given in annexure
- Minimum teaching hours prescribed in various disciplines phase wise are given in annexures.
- Distribution and duration of clinical postings is given in annexure.

Time allotted excludes time reserved for internal /University examinations, and vacation.

Phase II clinical postings shall commence before / after declaration of results of the first professional phase examinations, as decided by the institution/ University.

Phase III part I and part II clinical postings shall start no later than two weeks after the completion of the previous professional examination.

Note:

A total of approximately 20% of allotted time of a Phase shall be utilized for integrated teaching learning with other subjects. This will be included in the assessment of subjects.

The period of training is minimum suggested. Adjustments where required depending on availability of time may be made by the concerned college/ institution. This period of training does not include university examination period. Pandemic module teaching hours are added to respective allocated subjects and these subjects will teach as per module.

An exposure to skills lab based teaching by each subject in each phase shall be there weekly or fortnightly.

c New teaching /learning elements (Refer to booklets on NMC website related to these elements)

1) Foundation Course

Goal: The goal of the Foundation Course is to prepare a learner to study medicine effectively.

Objectives:

(a) Orient the learner to:

- The medical profession and the physician's role in society
- The MBBS programme
- Alternate health systems i.e. AYUSH in India and history of Medicine
- Medical ethics, attitudes and professionalism
- Health care system, its delivery and visits to health centers
- National health programmes and policies
- Universal precautions and vaccinations
- Patient safety and biohazard safety
- Principles of primary care(general and community based care)
- Mental Health
- The academic ambience

(b) Enable the learner to acquire enhanced skills in:

- Language
- Interpersonal relationships
- Communication emphasis on clinico-laboratory communication
- Learning including self-directed learning
- Time management
- Stress management, Mental Health
- Use of information technology, and artificial intelligence

(c) Train the learner to provide:

- First-aid
- Basic /cardiopulmonary/emergency life support

In addition to the above, learners maybe enrolled in one of the following programmes which will be run concurrently:

- Local language programme
- English language programme
- Computer skills

These may be done in the last two hours of the day. These sessions must be as interactive as possible. Sports (to be used through the Foundation Course as protected 04 hours/week).Leisure and extracurricular activity (to be used through the Foundation Course).

Institutions shall develop learning modules and identify the appropriate resource persons for their delivery. The time committed for the Foundation Course may not be used for any other curricular activity. The Foundation Course shall have a minimum of 75% attendance of all students mandatorily. This will be certified by the Principal/Dean of the college.

The Foundation Course shall be organized by the Coordinator appointed by the Principal/ Dean of the college and shall be under supervision of the Heads of MBBS phase 1departments.

Every college shall arrange for a meeting with parents/ wards of all students and records of the same shall be made available to UGMEB of NMC. Mentor- mentee program shall be carried out judiciously, with the ratio of 1 Mentor to 3 mentees. Mentor may be selected from all disciplines from the level of Professor/ HOD to Assistant Professor. Mentor shall be allotted his mentees during the foundation course itself from Phase 1. The mentee shall stay connected with the Mentor throughout his career till he completes CRMI. Each year when 3 new mentees are added from phase 1 to the mentor, the senior batch students shall support the junior students and create a healthy sibling environment (instead of ragging).

2) Early Clinical Exposure

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

- Recognize the relevance of sciences basic to diagnosis, patient care and management,
- Provide a context that will enhance learning of sciences basic to clinical reasoning,
- Relate to experience of patients as a motivation to learn,
- Recognize attitude, ethics and professionalism as integral to doctor- Patient relationship,
- Understand the socio-cultural context of disease through the study of humanities.

Elements

- Phase I subject correlation: i.e. apply and correlate principles of phase I subjects as they relate to patient care (this shall be part of integrated modules as well as in routine teaching wherever relevant).

- Clinical skills: to include basic skills in interviewing patients, doctor- patient communication, ethics and professionalism, critical thinking and analysis and self-learning (this training shall be imparted in the time allotted for early clinical exposure).

- Humanities: to introduce learners to a broader understanding of the socio-economic framework and cultural context within which health is delivered through the study of humanities and social sciences.

3) Electives

Objectives: To provide the learner with opportunities:

- For diverse learning experiences.
- It is mandatory for learners to do an elective. The elective time shall not be used to make up for missed clinical postings, shortage of attendance or other purposes.
- Institutions will pre-determine the number and nature of electives, names of the supervisors, and the number of learners in each elective based on the local conditions, available resources and faculty.
- Electives on topics in areas such as Research methodology, Research ethics, Use of Artificial intelligence and computers in Health and Medical Education, Health Management, Health economics, Indian system of medicine, Medical photography /clinical photography, Global health, Evidence based medicine, Art and music, Physiotherapy, Nutrition, ethical use of technology including artificial intelligence etc. in medicine, Literary activities, etc. may be provided by the college/ institution.
- It shall be preferable that elective choices are made available to the learners in the beginning of the academic year.
- The learner must submit a learning log book based on both blocks of the electives.
- 75% attendance in the electives and submission of log book maintained during electives is required for eligibility to appear in the University MBBS examination/ NExT.
- Institutions may use part of this time for strengthening basic skill certification.

4) Attitude, Ethics and Communication Module (AETCOM)

Objectives of the programme: At the end of the programme, the learner must demonstrate ability to:

- Understand and apply principles of bioethics and law as they apply to medical practice and research, understand and apply the principles of

  clinical reasoning as they apply to the care of the patients,

- Understand and apply the principles of system-based care as they relate to the care of the patient,
- Understand and apply empathy and other human values to the care of the patient,
- Communicate effectively with patients, families, colleagues and other health care professionals,
- Understand the strengths and limitations of alternative systems of medicine,
- Respond to events and issues in a professional, considerate and humane fashion,
- Translate learning from the humanities in order to further his professional and personal growth.

Learning experiences:

- This will be a longitudinal programme spread across the continuum of the MBBS programme including internship.
- Learning experiences shall include small group discussions, patient care scenarios, self-directed learning, workshops, seminars, role plays, large/small group teaching etc.
- Application based subject oriented cases may be used as additional resources for this training and real life case studies are the best examples for this AETCOM training. Community based case studies must be used in communication aspects of health education, informed consent and counseling in addition to clinical case studies.
- Attitude, Ethics & Communication Module (AETCOM module) developed by the erstwhile Medical Council of India should be used longitudinally for purposes of instruction.
- 75% attendance in AETCOM Module is mandatory for eligibility to appear for all

university examinations of all subjects in each Phase.

(5) **Alignment and integration (AIT) teaching**

Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application.

Objectives

In the earlier phases, the purpose of vertical integration (across phases) is to emphasize the applicative use of the basic science concept taught. In the later phases, its purpose is to utilise and build on prior knowledge and emphasize the foundations of clinical practice.

Learning experiences

In order to achieve this, the MBBS curriculum will become -

a) aligned to the extent possible - meaning that as much as possible topics/systems in different subjects in the same phase will be grouped together in the same weeks/months in timetable for teaching learning. The purpose of horizontal integration (within a phase) is to remove redundancy and provide interconnectedness. Suggested formats for alignment in phase 1 & 2aregiven in annexures. Phase 3 part 1 and 2 can be aligned accordingly as needed.

b) integrated to a limited extent both vertically and horizontally.

Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). Teaching/learning occurs in each phase through study of organ systems or disease blocks in order to integrate the learning process. Clinical linker cases must be used to integrate and link learning across subjects.

The six integrated modules to be used across 4 years ½ are anemia, ischemic heart disease, diabetes mellitus, tuberculosis, hypertension and thyroid. The complete modules are part of documents on NMC website.

(6) Learner-doctor method of clinical training (Clinical Clerkship)

a. **Goal:** To provide learners with experience in:

- Longitudinal patient care,
- Being part of the health care team,
- Hands-on care of patients in outpatient and in-patient setting.

b. **Structure:**

- The first clinical posting in Phase II shall orient learners to the patient, their roles and the specialty.
- The learner-doctor programme shall progress as outlined in Table 9.
- The learner shall function as a part of the health care team with the following responsibilities:
- Be a part of the units' out-patient services on admission days,
- Remain with the admission unit until at least 6 PM except during designated class hours,
- Be assigned patients admitted during each admission day for whom he will undertake responsibility, under the supervision of a senior resident or faculty member,
- Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
- Follow the patient's progress throughout the hospital stay until discharge,
- Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients,
- Participate in unit rounds on at least one other day of the week excluding the admission day,
- Discuss ethical and other humanitarian issues during unit rounds,
- Attend all scheduled classes and educational activities,
- Document his observations in a prescribed log book /case record.

No learner will be given independent charge of the patient in the capacity of primary physician of the concerned patient.

The supervising physician shall be responsible for all patient care decisions and guide the learner from time to time as required.

(7) Assessment:

- A designated faculty member in each unit will coordinate and facilitate the activities of the learner, monitor progress, provide feedback and review the log book/ case record.
- The log book/ case record must include the written case record prepared by the learner including relevant investigations, treatment and its rationale, hospital course, family and patient discussions, discharge summary etc.
- The log book shall also include records of outpatients assigned. Submission of the log book/ case record to the department is required for eligibility to appear for the final examination of the subject. An e-logbook is desirable.

Assessment

I. **Eligibility to appear for Professional examinations**

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

(a) Attendance

- There shall be a minimum of 75% attendance in theory and 80% attendance in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase - the learner must have 75% attendance in theory and 80% attendance in practical in each phase of instruction in that subject. There shall be a minimum of 75% attendance in AETCOM and minimum of 80% attendance in family visits under Family adoption

programme. Each student shall adopt minimum 3 families/ households and preferably five families. The details shall be as per Family Adoption Program guidelines.

- If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have a minimum of 75% attendance in each subject including its allied branches, and 80% attendance in each clinical posting.

Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination/ NExT.

(b) Internal Assessment (IA): Internal assessment shall be based on day-to-day assessment. It shall relate to different ways in which learners participate in the learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/ problem solving exercise, participation in project for health care in the community. Internal assessment should have both subjective and objective assessment. Internal assessment shall not be added to summative assessment. However, internal assessment marks in absolute marks should be displayed under a separate column in a detailed marks card. The internal assessment marks for each subject will be out of 100 for theory and out of 100 for practical/clinical (except in General Medicine, General Surgery and Obstetrics & Gynaecology, in which theory and practical assessment will be of 200 marks each).

For subjects that teach in more than one phase, cumulative IA to be used as eligibility criteria. The final cumulative marks are to be used for eligibility. The details are:

I. General medicine: The IA of 200 marks in medicine shall be divided across phases as Phase II - 50 marks,
Phase III part 1 - 50 marks
Phase III part 2 - 100 marks.
Phase III part 2 - 100 marks is divided as
Medicine - 75 marks
Psychiatry - 13 marks

Dermatology- 12 marks.

The final cumulative IA for Medicine is out of 200 marks for theory and practical each.

II. General surgery: The IA in surgery shall be divided across phases as:

Phase II - 25 marks,

Phase III part 1 - 25 marks,

Phase III part 2 - 150 marks.

Phase III part 2 - 150 marks shall be divided as

General surgery - 75 marks,

Orthopedics -50 marks,

Anesthesia -13 marks

Radiodiagnosis - 12 marks.

The final cumulative IA for surgery is out of 200 marks for theory and practical each.

III. IA of Forensic Medicine and Toxicology is divided as 25 marks in phase II and 75 marks in Phase III part 1. The final cumulative IA is out of 100 for theory and practical each.

IV. IA in Community Medicine is divided as 25 marks in phase I, 25 marks in phase II, and 50 marks in Phase III- part 1. The final cumulative IA for Community Medicine is out of 100 marks for theory and practical each.

V. IA in ophthalmology and ENT is divided as 25 marks in phase II and 75 marks in Phase III part 1. The final cumulative IA is out of 100 for theory and practical each for each subject.

(c) Certifiable competence achieved:

1. Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.
2. Regular periodic examinations shall be conducted throughout the course. There shall be no less than three theory and practical internal assessment

examinations in each subject of phase 1 &II, and this mandatorily includes pre-university examination. There shall be no less than two theory and clinical examinations in each subject of Phase III part 1 & 2 and this mandatorily includes an end of posting assessment. Log book (including required skill certifications) to be assessed and marks given from 10-20% in internal assessment.

3. Learners must secure at least 50% of the total marks (combined in theory and practical / clinical; and minimum 40% in theory and practical separately) for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
4. The results of internal assessment should be intimated to students at least once in 3 months and as and when a student wants to see the results.
5. The faculty must discuss the examination results with the students in a class room so as to make them understand areas for improvement.

Remedial measures:

A student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below:

- *During the course:* If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures. These students should be provided remedial measures as and when needed to improve IA. Since regular classes are going on and students have time, they should complete remediation in regular classes for attendance and not in extra classes. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete the remedial measures and it should be documented. **In spite of all above measures, if student is still not meeting the criteria to be eligible for regular exam he shall be detained and offered remedial for same batch supplementary exam. For attendance, he will be allowed remedial measures only if attendance**

is more than 60% for each component.

- *At the end of phase:* If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book at the end of regular classes in a phase, the student is detained to appear in regular university examination of that batch.

The colleges should provide enough support to students to implement remedial measures so that student gets a chance to improve IA for supplementary exam/next batch regular exam. The remedial measure should be specific and targeted to the deficiencies. Colleges should make sure that these remedial measures are not misused i.e. extra classes just to complete attendance where students complete a big percentage in a few days in all subjects. There should be regular classes for students with deficiencies to improve their learning. Similarly, tests should be conducted at appropriate intervals and not one after other to complete the IA marks. The detained student is required to attend all the classes/ tests planned by the departments as part of remedial measures to be eligible to sit for the university examination.

All students who are detained or fail for various reasons should be provided with:

a) Regular classes in that subject at appropriate intervals. These classes should be spread over time if multiple subjects are involved. The classes should be scheduled for improvement.
b) Similarly, regular tests can be planned with atleast one-week intervals in between tests. Test should include theory as well as practical/clinical tests.
c) Attendance of same phase-should be added to previous attendance to calculate percentage. The absolute number of classes attended should be added to earlier attended classes. The number will not be added to denominator provided the denominator is as per regulations. Clinical posting attendance shortage should be addressed by posting students in the specific subjects for the duration as per regulations in that phase.
d) Attendance of next phase- For students who have failed in regular examinations of phase 2 onwards, they can attend classes of next phase. If these students pass the supplementary exam of original phase, then the attendance of next phase will be considered. However, if they fail in supplementary examination, the attendance of next

phase will not be considered and they have to attend teaching and assessment with the junior batch.

2.University Examinations: University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him to function effectively and appropriately as a physician of the first contact.

1. Nature of questions in theory examinations shall include different types such as structured essays like Long-Answer Questions (LAQ), Short-Answer Questions (SAQ) and Multiple-Choice Questions (MCQ). Scenario based MCQs shall be accorded a weightage of 10-20% of the total marks of each theory paper. Blueprint must be used for theory question papers. A format of sample paper is given in module 3 assessment on NMC website. Q. no 4 as per this format should be on integrated topics as applicable to subjects (in subject that has competencies in integrated modules). A sample format with marks is given in annexures.

2. Practical/clinical examinations shall be conducted in the laboratories and /or hospital wards and a blueprint must be used. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form logical conclusion. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and develop a management plan.

3. Viva/oral examination should assess approach to patient management, emergencies and attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data like X-rays, identification of specimens, ECG, etc. is to be also assessed.

4. Application based questions should be included for newer CBME components like foundation course, ECE, AETCOM, Integrated topics, student-learner methods etc

in all theory, practical and clinical examinations of all internal assessments and university assessments.

University Examinations shall be held as under:

a) **Phase-I** shall be held at the end of Phase I training (in the 12th month of that training), in the subjects of Anatomy, Physiology and Biochemistry**.**

b) **Phase-II** examination shall be held at the end of Phase II training (12th month of that training), in the subjects of Pathology, Microbiology, and Pharmacology

c) **Phase III Part 1**examination shall be held at the end of Phase III part 1 of training (12th month of that training) in the subjects of Community Medicine, Forensic Medicine &Toxicology, Ophthalmology and Otorhinolaryngology.

d) **Phase III Part 2** / National Exit Test (NExT) as per NExT regulations- (Final Professional) examination shall be at the end of 17th / 18th month of that training, in the subjects of General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, and allied subjects as per NExT Regulations**.**

Criteria for passing in a subject: A candidate shall obtain a cumulative 50% marks in University conducted examination including theory and practical and not less than 40% separately in Theory and in Practical in order to be declared as passed in that subject. **In subjects that have two papers, the learner must secure a minimum** 40% marks in aggregate (both theory papers together).

Appointment of Examiners:

(1) Person appointed as an examiner in the particular subject must have at least three years of total teaching experience as Assistant Professor after obtaining postgraduate degree following MBBS, in the concerned subject in a college affiliated to a recognized medical college (by UGMEB of NMC).

(2) For Practical /Clinical examinations, there shall be at least four examiners for every learner, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner shall act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of

candidates is maintained.

(3) A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college. External examiners may be from outside the college/ university/ state/ union territory.

(4) There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall mandatorily moderate the theory question paper(s).

(5) All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.

(6) All theory paper assessment should be done as a central assessment program (CAP) of the concerned university.

(7) Internal examiners shall be appointed from the same institution for unitary examination in the same institution. For pooled examinations at one centre, the approved internal examiners from the same university may be appointed.

(8) The Examiners for General Surgery and allied subjects shall be from General Surgery and 25% from orthopedics. There shall be one orthopedics examiner out of four examiners (either internal or external).

(9) Ophthalmology and ENT examinations to be held as separate examinations and not combined with other subjects.

(10) There shall be no grace marks to be considered for passing in an examination.

ANNEXURES:

1. AETCOM module curricular governance and blueprinting
2. Academic calendar
3. Phase wise distribution of subjects
4. Foundation course hours distribution
5. Distribution of hours phase wise
6. Clinical postings distribution
7. Learner doctor method

8. University examination marks
9. Sample format of paper theory with marks distribution
10. Alignment Phase I
11. Alignment Phase II
12. Family adoption programme
13. Guidelines for manpower requirement for research facilities
14. Disability criteria for admission to MBBS

Annexure 1

AETCOM Modules teaching and assessment

The tables below show the suggested AETCOM blueprinting for various university papers and for module leader/in-charge for coordinating Module teaching. Each module leader/in-charge should select a multi-subject team and then the module is taught by various members of the team. The module teaching learning activities should be planned and conducted by this team.

Assessment: All internal and University exams must have one question/application based question on AETCOM in each theory paper (5%) and it should be assessed in various components of practical/clinical exams.

AETCOM Phase I		
Subject	**Paper**	**Module number**
Anatomy	Paper 1	1.5
	Paper 2	1.4 foundations of communications
Physiology	Paper 1	1.2
	Paper 2	1.3
Biochemistry	Paper 1	1.1 ● Enumerate and describe professional qualities and roles of a physician ● Describe and discuss commitment to lifelong learning as an important part of physician growth
	Paper 2	1.1 ● Describe and discuss the role of a physician in health care system ● Identify and discuss physician's role and responsibility to society and the community that she/ he serves

AETCOM Phase II		
Subject	**Paper**	**Module number**
Microbiology	Paper 1	2.1
	Paper 2	2.8
Pharmacology	Paper 1	2.2, 2.3
	Paper 2	2.5
Pathology	Paper 1	2.4
	Paper 2	2.7

AETCOM Phase III part I		
Subject	**Paper**	**Module number**
Ophthalmology	Single paper	3.1
ENT	Single paper	3.3
Forensic Medicine & Toxicology	Single paper	3.4
Community Medicine	Paper 1	3.2
	Paper 2	3.5

AETCOM Phase III part 2		
Subject	**Competency Number**	**Competency**
Medicine and Allied Subjects, integration	Paper 1	4.1
	Paper 2	4.3
Surgery and Allied Subjects,	Paper 1	4.4
	Paper 2	4.5, 4.6
Obstetrics and Gynecology	Paper 1	4.2, 4.7
	Paper 2	4.8
Pediatrics	Single paper	4.9

Annexure 2 Time distribution of MBBS Teaching & Examination Schedule

Academic calendar for admission batch 2024-2025												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Adm year										1 14 Oct	2	3
Phase 1 exam	4	5	6	7	8	9	10	11	12 Phase 1 exam, result	13 Phase 2 starts	14	15
Phase 2 exam	16	17	18	19	20	21	22	23	24 Phase 2 exam, result	25 Phase 3 part 1 starts	26	27
Phase 3 part 1 exam	28	29	30	31	32	33	34	35	36 Phase 3 Part 1 exam, result	37 Phase 3 part 2 starts	38	39
	40	41	42	43	44	45	46	47	48	49	50	51
Phase 3 part 1 exam	52	53	54 Proposed NExT step1	1 CRMI	2	3	4	5	6	7	8	9
Internship	10	11	12 Proposed NExT step2									

Legends:

CRMI-Compulsory rotating medical internship

Proposed time distribution of MBBS Teaching & Examination Schedule

Generic proposed academic calendar from admission batch 2025-2026 onwards												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Adm year									1	2	3	4
Phase 1 exam	5	6	7	8	9	10	11	12 Phase 1 exam, result	13 Phase 2 starts	14	15	16
Phase 2 exam	17	18	19	20	21	22	23	24 Phase 2 exam, result	25 Phase 3 part 1 starts	26	27	28
Phase 3 part 1 exam	29	30	31	32	33	34	35	36 Phase 3 Part 1 exam, result	37 Phase 3 part 2 starts	38	39	40
	41	42	43	44	45	46	47	48	49	50	51	52
Phase 3 part 1 exam	53	54 Proposed NExT step1	1 CRMI	2	3	4	5	6	7	8	9	10
Internship	11	12 Proposed NExT step2										

Legends:

CRMI-Compulsory rotating medical internship

Annexure 3

Distribution of subjects in each Professional Phase

Phase & year of MBBS training	Subjects & Teaching Elements	Duration (months)	University Examination
Phase-I	1. Foundation course of 2 weeks at start of course 2. Anatomy, Physiology & Biochemistry, Introduction to Community Medicine, including Family adoption programme (FAP) through village outreach 3. Early Clinical Exposure 4. Attitude, Ethics, and communication Module (AETCOM) including Humanities	12 months	Phase 1
Phase-II	1. Pathology, Microbiology, Pharmacology 2. Forensic Medicine and Toxicology 3. Introduction to clinical subjects 4. Clinical postings, Family visits for FAP 5. AETCOM	12 months	Phase 2
Phase-III Part-I including Electives 1 month	1. Community Medicine, Forensic Medicine and Toxicology, Medicine & allied, Surgery & allied, Pediatrics, Obstetrics & Gynecology 2. Family visits for FAP 3. Oto-rhinolaryngology, 4. Ophthalmology 5. Clinical postings 6. AETCOM 7. Electives- 1 month, 2 blocks, 15 days each	12 months	Phase 3 Part 1
Phase-III Part- II, MBBS	1. General Medicine, Dermatology, Psychiatry, Pediatrics, General Surgery, Orthopedics, Radiodiagnosis, Anesthesiology, Obstetrics & Gynecology 2. Clinical postings 3. AETCOM	18 months	Phase 3 Part II

Annexure 4

Foundation Course- 2 weeks at start of course

Subjects/Contents	**Teaching hours**
Orientation Module including History of Indian Medicine	15
Skills Module	15
Community orientation module	5
Professional Development and Ethics Module (P&E) including Mental health	20
Enhancement of Language and Computer Skills Module including clinico-laboratory communication	10
Sports and Extra curricular Activities	15
Total	**80**

Annexure 5

Distribution of Subject Wise Teaching Hours for Phase -1 MBBS

Subject	Large group teaching	SGT/ Practical/ Tutorials/ Seminars	SDL	Total
Foundation Course				80
Anatomy	180	430	10	620
Physiology	130	305	10	445
Biochemistry *	82	157	10	249
Early Clinical Exposure (ECE)**	-	27	-	27
Community Medicine	20	20	-	40
Family adoption Program (FAP)	-	24	-	24
(AETCOM)***	-	26	-	26
Sports and extra-curricular activities	-	-	-	10
Total	**412**	**989**	**30**	**1521**

SGT: Small group teaching SDL: Self-directed learning

*Including Molecular Biology

**Minimum ECE hours. These hours are to be divided equally by anatomy, physiology & biochemistry.

***AETCOM module is a longitudinal programme.

Distribution of Subject Wise Teaching Hours for Phase-II MBBS

Subjects	Large group teaching	SGT/ Practicals/ Tutorials/ Seminars	Clinical Postings*	SDL	Total
Pathology	80	170	-	10	260
Pharmacology	80	170	-	10	260
Microbiology	75	143	-	10	228
Community Medicine	25	0	0	10	35
FAP	0	0	24		24
Forensic Medicine and Toxicology	12	25	-	08	45
Clinical Subjects	60		540	-	600
AETCOM	-	29	-	8	37
Sports, Yoga & extra-curricular activities	-	-	-	32	32
Final total	**332**	**537**	**564**	**88**	**1521**

SGT: Small group teaching SDL: Self-directed learning

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Friday.

There will be 15 hours per week for all clinical postings.

Distribution of Subject Wise Teaching Hours for MBBS Phase-III part 1.

Subject	Large group teaching	SGT/ Practicals/ Tutorials/ Seminars	SDL	Total
Electives	0	156	0	156
Gen. Medicine	20	30	10	60
Gen Surgery	20	30	10	60
Obstetrics & Gynecology	20	30	10	60
*Forensic Medicine and Toxicology	35	65*	20*	120
Community Med	50	80	20	150
FAP (Visits +log book submission)	-	26	10	36
Otorhinolaryngology (ENT)	30	50	20	100
Ophthalmology	30	50	20	100
Clinical posting*				648
AETCOM	0	19	12	31
Total	**205**	**536**	**132**	**1521**

*Out of this, 21 Hours (07 days x 03 hours) must be utilised for demonstration of post mortem examinations

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Saturday.

There will be 18 hours per week for all clinical postings.

'

Distribution of Subject wise Teaching Hours for Phase 3 part-2 MBBS

Subjects	Lectures	SGL	SDL	Total
General Medicine	110	185	40	335
General Surgery	90	153	30	273
Obstetrics and Gynecology	80	150	30	260
Pediatrics	50	70	30	150
Orthopedics	30	50	20	100
AETCOM	30	0	22	52
Dermatology, Venereology & Leprosy	13	17	10	40
Psychiatry	13	17	10	40
Radiodiagnosis	8	10	8	26
Anesthesiology	8	10	8	26
Clinical postings*				1116
TOTAL	**432**	**662**	**208**	**2418**

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Saturday.

There will be 18 hours per week for all clinical postings.

Extra hours may be used for preparation of NExT or SDL.

Annexure 6

Clinical Posting Schedules in weeks phase wise

Subjects	Period of training in weeks			Total Weeks
	Phase II	Phase III Part 1	Phase III Part 2	
Electives	0	4	0	4
General Medicine	8	4	12	24
General Surgery	6	6	12	24
Obstetrics & Gynaecology	6	4	12	22
Pediatrics	4	2	6	12
Community Medicine	4	4	0	8
Orthopaedics	0	2	6	8
Otorhinolaryngology	4	4	0	8
Ophthalmology	4	4		8
Psychiatry	0	2	4	6
Radio-diagnosis	0	0	2	2
Dermatology, Venereology & Leprosy	0	0	6	6
Anaesthesiology	0	0	2	2
Total	**36**	**36**	**62**	**134**

Annexure 7: Learner- Doctor programme (Clinical Clerkship)

Year of Curriculum	Focus of Learner-Doctor programme
Phase-I	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness, family adoption program
Phase-II	History taking, physical examination, assessment of change in clinical status, communication and patient education, family adoption program
Phase-III Part -1	All of the above and choice of investigations, basic procedures and continuity of care
Phase-III Part -2	All of the above (except Family adoption programme) and decision making, management and outcomes

Annexure 8

Marks distribution for various subjects for University Annual Examinations

Phase of Course	Theory	Practicals	Passing criteria
Phase-I MBBS			
Anatomy- 2 papers	Paper **1-** 100	100	Mandatory to get 40% marks separately in theory and in practicals; and totally 50% for theory plus practicals.
	Paper 2 -100		
Physiology- 2 papers	Paper **1-** 100	100	
	Paper 2 -100		
Biochemistry- 2 papers	Paper **1-** 100	100	
	Paper 2- 100		
Phase-II MBBS			
Pathology - 2 papers	Paper 1- 100	100	
	Paper 2 -100		
Microbiology- 2 papers	Paper 1- 100	100	
	Paper 2- 100		
Pharmacology- 2 papers	Paper 1 -100	·100	
	Paper 2- 100		
Phase-III MBBS part 1			
Forensic Medicine and Toxicology- 1 paper	Paper 1 – 100	100	
Community Med- 2 papers	Paper 1 -100	100	
	Paper 2- 100		
Otorhinolaryngology	Paper-1 100	100	
Ophthalmology	Paper-1 100	100	
Phase-III MBBS part 2			
Medicine & allied	Paper 1- 100	100	
	Paper 2- 100		
Surgery & allied	Paper 1- 100	100	
	Paper 2- 100		
Obstetrics and Gynecology	Paper 1- 100	100	
	Paper 2- 100		
Pediatrics	Paper-1 100	100	

Medicine & allied Paper-2 to have Medicine 50%, Psychiatry 25% and Dermatology 25% questions.

Surgery & allied Paper-2 to have General Surgery 40%, Orthopedics 40%, Anesthesia 10% and Radiodiagnosis 10%.

Any further updates as per NEXT regulations.

Annexure 9

Suggested format for a Theory paper		
	Duration-3 hours	**100 marks**
	Type of question/ Number of questions	**Marks per question**
Q No 1	Scenario based MCQ/ 10-20	1-2
Q No 2	Long essay question/ ONE	10-12
Q No 3	Reasoning Questions/ FIVE	3
Q No 4	Short notes (applied aspects)/ FOUR All four subparts related to six integrated topics if subject is part of integrated modules. However, if a subject has less competencies in integrated module than atleast 2 sub-parts from integrated modules.	4-5
Q No 5	Short notes / THREE	5-6
Q No 6	Short notes / FOUR (one subpart of 5 marks from AETCOM)	4-5

A nnexure 10- Phase I Alignment

Suggested Phase-1 AJlignrnent Table 1 (A111aitomy, Physiology & B'iochemistry) {Topics written here are indicatilfe and can be adjusted ifrequired)			
Mlo:111th	**Anatomy**	**Phrysiofogy**	**B iocbemilstry**
1	-General Anatomy -Lower Limb {LL)	General Physiology, Blood	Cell membrane and organelllles, extracellular matrix, Chem iistry of carbohydrates, amino-add & proteins, lab Safety and Bio medical Waste Management and Chromatograp!hy (Demo)
2	**-LL/UL** -Generali Embryology & l-liistology	Blood, **N-M**	Plasma protein, immu1noglobulins, Enzymes, Hemoglobin stru:cture and Hlemoglobinopathies, Electrophoresis (Demo), Heme synthesis, Porphynia's, Hemecatabolism, **iiron** metal::mlism (mineral) Billiirnb:in formation, Jaundice, oolo:nimetry (Demo)
3	m -Generali Embryology & l-liistology	**ANS,** 0/S	ClinicallEnzymology, Chemiistry of liipids, and liipoprotein metabolism, carbohydrate metabolism, vitamins, Estimation of Protein and albumin
4	-Abdomen -Related Systemic Embryology & l-liistology	GIIT, Renal	Vitamins, Nutrition, Liver Ftmctiion Tests, RenallF,unctio:n Tests, acid-base balance and its disorders, water and el'edm!lyte 110 rmal and abnormal analysis of urine{ DOAP}, Estimation of Urea, creatinine
5	-Abdomen,Pelvisl -Related Systemic Embryology & l-liistology	GIIT (contd.}, Repro.	Metaboliism of proteiins and their metabolic diisorders, Metaboliism of carbohydrates and their me·tabolic disi0rder.s, Diabetes mellitm, Hedrn:n transport chain and oXJidative phos:pho:rylation, Xenobiotics, Estimation of Glucose,.
6	-Thorax -Related systemic Embryology & l-liistology	Repro (contd.}, RS	Metabolism of lipidis (remaining) and disorders, Metabolism of proteins, minerals, virtamins, Re[Productive Hormones, Prenatal screening, new born screening.
7	1-1 & N:--ll -Related Systemic Embryology & l-liistology, Ge:netiics	Endocnine (Neck region), CNS	Hormone Biochemistry; Tumour markers and, Thyroid Functiion Tests., Adrenal! Functiion tes.ts., Free radicals, and antioxiidants
8	1-1 & N:--lll -Related Systemic Embryology & l-liistology, Ge:ne-tiics	CNS conM, Special senses	Purine and pyrimidines metabolism, gout, purine salvage pathway, replicatiion, DNA damage and repair me·chanism, trransaniption, translatiion, post-tra mlational modificat1ions, protein synthesis inllibiitors, genetic code, and mutations, estirnation of trnic aoid
9,	- Neuroanatomy -Related Systemic Embryology & l-liistoloJN	CNS (Contd.) Integrated physiolloRY	Molecullar biollogy techniques and Miscellaneous.,

Annexure 11- Phase II Alignment

	Pathology	Microbiology	Pharmacology
1st month	Gen. Path	Gen. Micro, Communication and Ethics(14 competencies)	Gen. Pharm
2nd month	Gen. Path	Gen. Micro, Communication and Ethics(14 competencies)	Gen. Pharm
3rd month	Inflammation Immunology HIV	Immunology and Immunological Disorders (8 competencies)	(ANS/PNS) NSAIDs
4th month	Immunology	Immunology and Immunological Disorders	Immunosuppressants CVS
	CVS	CVS & Bloodstream infections (1.5 months)	
1st Internal Assessment			
5th month	CVS Hematology	CVS & Bloodstream infections (1.5 months)	CVS Blood
6th month	Respiratory System (2-3 weeks)	Respiratory System (2.5 weeks) Tb	Chemo
7th month	Respiratory system CNS 2 hours Kidney	CNS 1.5 weeks	Respiratory System TB (7 hours) CNS 4weeks
2nd Internal Assessment			
8th month	Kidney Genito-urinary 2 weeks	Genito-urinary and STI 2 wks GIT Hepatobiliary	Chemotherapy
9th month	GIT Hepatobiliary	GIT Hepatobiliary	GIT
10th month	Bone Breast Skin, eye, joints Endocrine	Musculoskeletal system, Skin and Soft Tissue Infections (2 weeks) Zoonotic & Miscellaneous Infections (2 weeks) HAI and Antimicrobial Stewardship Hospital Infection Control	Drugs on skin, ocular Endocrine
3rd Internal Assessment/ Pre University			
11th month	**Phase 2 University Exam**		

Annexure 12-FAMILY ADOPTION PROGRAM

CURRICULUM FOR FAMILY ADOPTION PROGRAMME (FAP)

The National Medical Commission (NMC) envisages the FAP as an opportunity for the Institute(s) to discharge its social responsibility and as a critical platform to facilitate *Authentic learning* of the under-graduate students to sensitize them with the real-life challenges of working for the Universal health coverage (UHC). The FAP will present an opportunity for the students to experience the health inequities and understand the social factors contributing to it.

The FAP is expected to complement the other Competency-Based Medical Education (CBME) reforms e.g., posting of interns in the public health facilities under the Compulsory Rotating Medical Internship (CRMI) and the District Residency Program (DRP) for producing socially-responsive competent Indian Medical Graduates who would contribute for the cause of reducing inequities in health and society in the future. Institute(s) should leverage collaboration and partnership with the community and the public health care delivery system for effective implementation of the FAP so as to serve the larger purpose of the CBME reforms in the country.

TARGETS TO BE ACHIEVED BY STUDENTS:

Phase 1:

1. Rapport building and connect with the families
2. Learning communication skills and inspire trust building amongst families
3. Understand the dynamics of community set-up of that region
4. Mobilize families for participation in Screening programs
5. Undertake detailed family study and prepare the family diagnosis to identify diseases/ ill-health/ malnutrition of allotted families/ risk factors / scope for health promotion
6. Formulate objectives to be achieved for each family

Phase 2:

1. Continue active involvement to become the first doctor /reference point of the family by continued active interaction
2. Ensure follow-up of members from adopted families for vaccination, growth monitoring and promotion, menstrual hygiene, IFA prophylaxis, health lifestyle adoption, nutrition, vector control measures, compliance to medications etc.
3. Work collaboratively with adopted families to achieve the formulated objectives
4. Inform families about ongoing government sponsored health related programs
5. Ensure appropriate referral of family members considering their choice for additional or annual screening at higher health facilities.

Phase 3:

1. Work collaboratively with adopted families to achieve the formulated objectives
2. Observation of services delivered at the community level during Village Health Nutrition Days (VHND), Community-based events (CBEs), Health and Wellness Centres (HWC) camps under the different national health program
3. Build understanding regarding work of frontline workers (ANM, ASHA/USHA, AWW, MPW) through interaction
4. Build understanding around intersectoral action for health through Local self-governing bodies, NGOs, SHGs etc for health promotion
5. Undertake short term action projects for improving health in the adopted families or community
6. Analysis of their own involvement and impact on improving the health conditions in the adopted families

Final visit to have last round of active interaction with families - prepare a report to be submitted to department addressing:

1. Improvement in overall health of the family
2. Immunization

3. Sanitation,
4. De-addiction
5. Whether healthy lifestyles like reading good books. Sports/yoga activities have been inculcated in the house-holds
6. Improvement in anaemia, tuberculosis control
7. Health awareness
8. Any other issues
9. Role of the student in supporting family during illness / medical emergency
10. Social responsibility in the form of environment protection programme in form of plantation drive (medicinal plants/trees) cleanliness and sanitation drive with the initiative of the medical student

Phase wise competencies to be achieved through the FAP

Professional year and topics for visit	**Competency**	**Objectives**	**Suggested T-L methods**	**Suggested Assessment methods**	**Teaching Hours**
First year Visit 1 – Rapport building with the Families and Orientation Socio-demographic and Socio-economic profile Visit 2 – Environmental health	Collect demographic profile of allotted families, take history and conduct clinical examination of all family members	By the end of this visit, students should be able to compile the basic demographic profile of allocated family members and formulate objectives for each family	Family survey, Screening camps Field visit clinics	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 24 hours [A minimum of 4 visits of full day of around 6 hours] OR [If 3 hours visit then 8 visits to be conducted]
	Mobilize the adopted family members for participation in screening camps and coordinate treatment of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the basic health profile and treatment history of allocated family members	Screening camps Field visit clinics PLA techniques (sorting, ranking etc)	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	

Drinking Water supply, Sanitation and Vector control Visit 3 – Individual health profile including Anthropometry Visit4 – Addictions Tobacco, Alcohol, Screen addiction and other addictions	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members for follow up of treatment and suggested remedial measures.	Family survey, Screening camps Field visit clinics Reporting of follow up visits.	Community case presentation. OSPE, FAP logbook based verification of competency, Multi-source feedback Reflections	
	Take part in health promotion, environment protection and sustenance activities	By the end of this visit, students should be able to report the activities undertaken for health promotion, environment protection and sustenance like tree plantation, herbal plantation activities conducted in the community	Participation in and process documentation of activities (NSS activities) along with reporting of case studies	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	
Second year Visit 5 – Healthy Lifestyle Dietary assessment,	Take history and conduct clinical examination of all family members	By the end of this visit, Students should be able to compile the updated medical history of family members through family follow-up	Family survey, Field visit clinics Referral and follow-uo	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 24 hours [A minimum of 4 visits of full day of around 6 hours] OR

f>i'l'\\l'Saical activ-,y-and Exeiroise Visit 6-Mlicronutrie nt deficiencies - Nutritional arnemia, Iodine deficiency di,s.orders Care of under-5 ,chil clr,en Visit 7-Feeding, vaccination, **HBYC** Maternal healith Visit 8-Care of Pregnant **and** Lactatting moti'le:r.s	Facilitate ,chedkurp nd/or referral ot adop,ted famiily l!Jncler overall gl!Jid arnce ,I) mento.r	By the end ,of this visit, students, :slll0UId be able to report the d)etails of cliniical examirnation and in,vestiga1ti,on:slilke **HB** %., blood gmu p urine mutirne and bl)oocl sugar or any other inrvestiga1ti:on allung wiith treatm.ent history, mmpiliance to treatm.ent; oiff alllocatecl f,amily members	Field visit cliinics Refer1r,al Field visit cliinics Reporti:ng of follow up visits_	Communi1tv ,case pre-sentaticm. OSP'E, FAP logbook Case :studies Mlulltii-source feedlJadk	‖lf 3 i'lollrs visit then 8 visits to be mnclu,cted]
	Mlai1ntain rnmmllnication and ollow-llp of rem eclial measures	By the end ,oftihis visit, stu:clerntts, should be able to pmvid,edetairls of comm1m ication maintain eel with fami1ly members incllllding in, onnation albourlt Nlatlionail pmgrams pmvid,e,ct Students shoulld allso l:le alble to follow up on treatm.ent and :su.ggested remedial measures 11.111dier the guidance of ,a mentor. Documentation of ref,erral in logbook	Famiilyurvey, Screer11ing camps Field visit cli1nics Reporting of follow up visits_	Communi1ty ,case presentatiion. OSP'E, FAP logbook based verificati:on **of** rnmpetency, Mlulltii-source feedlJadk Reflections	
Third year Visit 9-Communi:ca1b le diseases - Tullerrnllmis, Influenz.a and others Vis- 10-	Talke histo:ry and ,mnclu,ct cl inrical ,e:,;a1mination of **al-llamily** memllersarnd fadli,tate health ,chedk-llp•if requ1ired	By the end ,of tthis visit, stuclenitt :should be able to maintain follmv-up wi,tti'lthe fami1lie-s andl update the medi:cal hiistmy oi fami1ly members	Fam1ilyurvey, Field visit cli1nics Referir,al and follow-up	Communi1ty ,case presentatti on. OSP'E, Observatti011, FAIP logjbook Mlulltii-source feedlJadk Reflections Case :studies	Tota1 ‖3-6 hours [A minimum oiff 6 visits of full day of amund 6 hours] OR [‖lf 3 i'lollrs visit then

Non-communicable diseases – HTN, DM and others Visit 11 – Adolescent health / School health Menstrual hygiene, Life skills Visit 12 – Healthy ageing Health care of the Elderly Visit 13 – Mental health Healthy coping strategies and Resilience Visit 14 – Well-being of the Families Final visit and Report submission	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members and collaborative efforts undertaken with family members for improving their health.	Family survey, Field visit clinics Referral and tracking Reporting of follow up visits.	Community case presentation. OSPE, Observation, FAP logbook based verification of competency, Multi-source feedback Reflections	12 visits to be conducted]
	Counsel the family members of allotted families and analyze the health trajectory of adopted family under overall guidance of mentor	By the end of this visit, students should able to analyze and report the findings of short term action projects and its effect on health trajectory at individual Family and community level	Participation in and process documentation of activities (NSS activities) along with reporting of photographic evidences. Small group discussion (report of the health trajectory of adopted family)	Community case presentation. OSPE, Logbook based verification of competency. Observation Viva-voce Multi-source feedback Reflections	
	Work as a member of Health Team and facilitate intersectoral action for health	By the end of this visit, students should able to report the role of various frontline functionaries' delivery primary health care and Local self-governing bodies, NGOs, SHGs etc for health promotion	Observation and reporting of events Exposure visits Interaction with frontline functionaries	Logbook based verification of competency, Observation Viva-voce Multi-source feedback Reflections	

LOG BOOK FOR FAMILY ADOPTION PROGRAM

(To be modified by the Institute as per their requirement)

Institute:

University:

Name of the Student:

Roll No: **Batch:**

Address of Community for FAP:

Number of Adopted Families:

Names of Head of Household of Adopted families:

Dates of Screening Camp: _____

Name of Faculty Guide/Mentor

Names of PGs/SRs Guide/Mentor

Names of Para-medical staff Guide/Mentor

Annexure 13

DRAFT GUIDELINES FOR MANPOWER REQUIREMENT FOR RESEARCH FACILITIES IN A MEDICAL COLLEGE

Research labs may be under following categories:

1. Molecular lab
2. Stem cell research lab
3. Cytogenetics lab
4. HLA and tissue typing research lab
5. Integrative Research lab

Applied Clinical research for organ perfusion, cancer research, in vitro fertilization, etc. can be under any of the above research facilities.

For integrative research lab, qualified faculty from Yoga/ Ayurvedic/ Siddha etc can also be employed and man-power may be selected as per AYUSH guidelines.

MAN POWER

(1) Lab Director-post-1

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry/

Faculty with PhD/ MSc PhD may be taken if exceptional in research.

Lab work: 10 years experience

Lab research related publications- minimum 10 in last 10 years

(2) Lab Supervisor- post-1 (per research facility)

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry

Faculty with PhD (Medical subject) will be preferred

or MSc in life sciences with PhD from Medical college

Lab work: 7 years experience

Lab research related publications- minimum 5 in last 5 years

(3) Senior Scientific Research Officer- posts- 1 or more (per research facility)

Minimum Qualifications required**:**

PhD with MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry / PhD in medical college or MSc in life sciences with PhD from medical college

Lab work: 4years experience

Lab research related publications- minimum 3 in last 3 years

(4) **Junior Research Officer**-posts- 1 or more (per research facility)

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry or Diploma in Clinical Pathology/ MSc in life sciences, PhD scholar/ Postdoc fellow

Diploma holder in any branch may pursue PhD if experience / research inclinations proved for minimum of 1 year. They can be enrolled for integrated Master's PhD course.

Lab work: 1 year experience

Lab research related publications- preferably 1 in last 2 years

(5) Laboratory Technicians- Posts- minimum 2

Minimum Qualifications required**:** BSc/ MSc, in life sciences including Biotechnology, DMLT

(6) Data entry operator/ Clerk -1 (minimum)

Minimum Qualifications required**:**

Experience:

(7) **Store keeper** -1 (minimum)

Minimum Qualifications required**:Graduate**

Experience: 5 years

(8) **Biostatistician- 1**(minimum)-Asst Professor/ Above

Experience: 5 years

(9) Lab attendant

(10) Peon/ Multi-task worker

(11) **Clinical Monitors-**

Any MBBS or above with research inclination

(12) Social worker/ MSW with applied research inclinations

Annexure 14

Guidelines regarding admission of students with “Specified Disabilities” under the Rights of Persons with Disabilities Act, 2016 with respect to admission in MBBS.

Note 1. The “Certificate of Disability” shall be issued in accordance with the Rights of Persons with Disabilities Rules, 2017 notified in the Gazette of India by the by the Ministry of Social Justice and Empowerment [Department of Empowerment of Persons with Disabilities (Divyangjan)] on 15th June 2017.

2. The extent of “specified disability” in a person shall be assessed in accordance with the “Guidelines for the purpose of assessing the extent of specified disability in a person included under the Rights of Persons with Disabilities Act, 2016 (49 of 2016)” notified in the Gazette of India by the Ministry of Social Justice and Empowerment [Department of Empowerment of Persons with Disabilities (Divyangjan)] on 5th January 2018.

3. The minimum degree of disability should be 40% (benchmark disability) in order to be eligible for availing reservation for persons with specified disability.

4. **The term 'Persons with disabilities' (PwD) is to be used instead of the term ‘Physically Handicapped' (PH).**

Sno	Disability Type	Benchmark Disabilities	Specified Disability	Disability Range		
				Eligible for Medical Course, Not Eligible for PH Quota	Eligible for Medical Course, Eligible for PH Quota	Not Eligible for Medical Course
1	Physical Disabilities	A.Locomotor Disability / (Specified Disability a-f)	a. Leprosy cured person	Less than 40% disability	40-80% : Persons with more than 80% disability may also be allowed; but after their selection, their functional competency will be determined with the aid of assistive devices.	More than 80%
			b. Cerebral Palsy			
			c. Dwarfism			
			d. Muscular Dystrophy			
			e. Acid attack victims			
			f. Others			
		B. Visual Impairment	a. Blindness	Less than 40% disability (i.e. Category '0(10%)', 'I(20%)' & 'II(30%')	—	Equal to or More than 40% Disabilitiy (i.e. Category III and above)
			b. Low vision			
		C. Hearing impairment	a. Deaf	Less than 40% Disability	—	Equal to or more than 40% Disability
			b. Hard of hearing			

Sno	Disability Type	Benchmark Disabilities				
			SJ:i·QIIIIId DImIII y	IEJI9 Iai'fcr MIIidIcal Coura, !NotIE11g1b1afttr PH Quola	Eli,glbt_e,lfor Medical Couiw BIIglbt.e,for1PM Quota	Not BliglbL_e,lfor MedicalCour.s
		D. Speech & language disability	a. Organic/ neurological causes			
2	ntellectual disability		ai. Sped IIIili1img dis a es (l?arospb.aJI disab-l s, Dysleooa,. Dys!IaIIIIIIi & DEM!lopnenl'al apha.sa)	s:s IIIilan 40% IJtsa'bi Ly	qu tocr 1mora,IOii,... .ffi%	
			b· ilsm m , ordi!ff;	AbSIIDIIB Oli ill IJtsa'bi Ly.i\spergi!Ir :syndrorrtt• (disal!ii . o W-60,%as pl!Ir ls.AA) ihere'lli11!1, iildimualis de l'.BI!d fit for MBiBS cour.saby an expert parnl!Il	Cmelil Inl'.il alilmeddLII!Ito·lii a'bove-nIIIImlilld lack of dbjeciWernt1 , to es.1,._'hprie:S@l'.lce and ex o l'.IWI illfilsss. 1-bwnre.r,IIIile bl!Ine·fitaf msewa1lcnlquo1a ma:Y bi!! c:ms fu . •after d velopimglbe 1fiIIIIIil'.ids rexpe:rt · of disabilit assessm1111,1.	Equaj a 01imo1i1 100¾.disa'b-i . o !=fi!!S!Bnca,of mgmitiveJ1n1e.118dtlal asab aridor i 'ilili!!, per800 isde ad •11for peruq MBBSaitJli'Se lby
3	Mental behaviour		mmess	AbSIIDIIB Oli 111 IJtsa'bi ty: s:s IIIilan 40,% rIDEAS)	Cmelil mol Iri!IC8ITll'.ielilmed dUIli to·rne per800 isd ad above-n»Inl'ft.....I,ack of Lmit IIopeliilrrn dbjedtternt1 , to es.1 'h prieS8ilce and ex —o l'.IWI illfiless... S'lan • •!'MY b& 1-hwnrer IIIile bl!Inefil of msewa1lcnlquo1a nnybi!! c:ms• fu . after developimglbe 1mt111ill'.ids of , b ·yassessm1111,1.	"r1ormor e than 40¾.disa'bi. ·Oir the (hftl!Id for de.'fillilio.n o "'· s.'to e dicirle,•,as. as uSBdby severa1 bsti 'iioms. o'f reoumlliill!ls olli!!Br• India.
4	Disability caused due to	Disability due to Chronic Neurological Conditions	a. Multiple Sclerosis b.Parikilsonis	s:s IIIilan40% IJtsa'bi Ly		00%
		ility due to Blood	a. Haemophilia	s:s IIIilan40% IJtsa'bi Ly		00¾

Sno	Disability Type	Benchmark Disabilities	Specified Disability	Disability Range		
				Eligible for Medical Course, Not Eligible for PH Quota	Eligible for Medical Course, Eligible for PH Quota	Not Eligible for Medical Course
			b.Thalassemia			
			c. Sickle cell disease			
5	Multiple disabilities including deaf blindness		a. Combination of above	Combining Formula as notified by the Govt. $\frac{a + b\,(90-a)}{90}$ (where a= higher value of disability % and b=lower value of disability % as calculated for different disabilities) is recommended for computing the disability arising when more than one disabling condition is present in a given individual. This formula may be used in cases with multiple disabilities, and recommendations regarding admission and/or reservation made as per the specific disabilities present in a given individual		

••• That by virtue of the order dated 18.05.2023 passed by the Hon'ble Supreme Court of India in WP (C) no. I093 of 2023 titled Vishal Gupta Vs UOI &Ors., the Under Graduate Medical Education Board (UGMEB), an autonomous board under National Medical Commission. constituted an expert committee. Accordingly, on l4th July, 2023, the expert meeting was held and the issues related to the review of guidelines specifically with respect to Specific learning disabilities (SLD), Autism spectrum disorders (ASD) and Mental illness were discussed in detail. Thereafter recommendations based on the discussions held in the meeting were received in the commission and such recommendations were considered by UGMEB.

MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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