

MBBS CURRICULUM

First Phase – Pre Clinical

Anatomy

Physiology

Biochemistry

Second Phase - Para Clinical

Pathology

Microbiology

Pharmacology

Forensic Medicine

Third Phase - Clinical

Part I

Ophthalmology

Otorhinolaryncology

Community Medicine

Part II

General Medicine

General Surgery

Obstetrics and Gynecology

Pediatrics

I YEAR MBBS SYLLABUS

HUMAN ANATOMY TOPICS DISTRIBUTION

Paper I

1. General Anatomy
2. General Embryology
3. General Histology
4. Upper Limb
5. Lower Limb
6. Abdomen and Pelvis

(Along with related Embryology and Related Histology)

Paper II

1. Genetics
2. Thorax
3. Head and Neck
4. Neuroanatomy

(Along with related Embryology and Related Histology)

I MBBS - SYLLABUS ANATOMY

GENERAL ANATOMY

Sub divisions of anatomy

Anatomical position and planes

Structure and classification of bones and skeleton

Classification of joints, muscles

Classification of vascular system

Classification of nervous system

Classification of Integumentary system

UPPER LIMB

Bones of upper limb.

Pectoral region

Gross and applied anatomy of breast

Brachial plexus

Axilla : Boundaries and contents – Axillary group of lymph nodes in detail

Back: Muscles of the back

Shoulder: Muscles and movements of shoulder joint

Free upper limb:

Muscles of arm, forearm, hand and their actions.

Cubital fossa- boundaries and contents

Flexor and extensor retinaculum

Applied anatomy of fascial spaces

Course and branches and applied anatomy of ulnar, median, radial, musculocutaneous and axillary nerve.

Joints, Blood vessels of upper limbs and their applied anatomy

Lymphatic drainage of upper limbs

Gross anatomy ,concerned radiology,and surface marking

LOWER LIMB

Bones of lower limb.

Fascia lata

Vascular and lymphatic drainage of Lowerlimb

Boundaries and contents of femoral triangle

Muscles of gluteal region, thigh, leg and foot.

Adductor canal.

Popliteal fossa-boundaries and contents.

Femoral, Obturator, Sciatic , Tibial and common Peroneal nerves- course and branches & their applied anatomy.

Course & branches of femoral artery & profunda femoris artery.

Movements of hip,knee,ankle and subtalar joints.

Arches of the foot.

THORAX

Osteology-Sternum,Ribs and Vertebrae

Boundaries of thoracic inlet,cavity,and outlet.

Muscles of thoracic wall

Thoracic spinal nerves – typical & atypical

Anterior and Posterior intercostal arteries.

Internal thoracic artery.

Pleural cavity: pleura,lungs,trachea,bronchi,phrenic nerve.

Mediastinum: Boundaries and contents.

Pericardium,heart,and coronary arteries.

Venous drainage and nerve supply of heart.

Thymus

Aorta, pulmonary trunk,superior venacava

Oesophagus,sympathetic chain,thoracic duct and azygos system of veins.

Joints of thorax.

ABDOMEN AND PELVIS

Abdominal wall-Muscles,bloodvessels,nerves.

Rectus sheath,Inguinal canal,

Testis-coverings and content

Penis –parts

Thoracolumbar fascia,Lumbar plexus.

Peritoneal cavity,Lesser sac,Greater sac,Mesentery.

Rectovesical,Rectouterine,Uterovesical pouches

Viscera

Liver&Extra hepatic biliary apparatus,,Spleen,Stomach,Pancreas.

Smallintestine,Caecum,Appendix,Colon,Rectum,Anal canal &their clinical significance.

Kidney,Ureter,Urinary bladder,Urethra,Suprarenals.

Portalvein,Inferior venacava,Renalvein.

Abdominal aorta,Coeliac artery,Superior and inferior mesenteric arteries.

Common,External,Internal iliac arteries.

Diaphragm: Attachments,Opennings,Nervesupply and action.

Pelvic muscles and their actions.

Prostate,Seminal vesicle,Vasdeferens,Ejaculatoryduct.

Ovary,Uterine tube,Uterus,Vagina.

Sacral plexus,Superficial,Deep perineal pouches.Ischiorectal fossa.

HEAD AND NECK

Skull and individual skull bones, foetal skull

Layers of scalp and its clinical importance.

Muscles of facial expression

Facial artery, vein, nerve &surgical importance of deep facial vein.

Boundaries and contents of posterior triangle.

Suboccipital triangle.

Cranial cavities and their foramina

Pituitary gland

Meninges & Dural venous sinuses.

Extraocular muscles and their actions.

Deep cervical fascia

Boundaries and contents of Anterior triangle.(carotid,digastric,muscular and submental)

Parotid gland, submandibular gland & sublingual gland and their ducts.

Boundaries and content of temporal and infra temporal fossa.

Temporomandibular joint.

Thyroid and para thyroid,tonsil and adenoid.

Common carotid, external and internal carotid arteries

Subclavian artery, vagus, spinal accessory nerves.

External, Internal & Anterior jugular veins

& Muscles of soft palate and pharynx

Nasal septum, cavity, lateral wall, paranasal sinuses.

Cartilages and ligaments of larynx.

Intrinsic and Extrinsic muscles of tongue & Larynx

External, middle, internal ear, mastoid antrum, auditory tube.

Parts and layers of eye ball.

Pre vertebral muscles.

Atlanto occipital,Atlanto axial joints and their movements.

Lymphatic drainage of Head and Neck

NERVOUS SYSTEM

Surfaces, Borders, sulci and gyri of cerebrum

White matters of Cerebrum

Lateral, Third, Fourth ventricles of brain.

Circulation of Cerebro spinal fluid, Blood brain barrier

Basal nuclei and its components.

Brain stem- Medulla oblongata, pons, Midbrain

Cerebellum.

Cranial nerves.

Vertebral canal & its contents

Coverings and blood supply of brain and spinal cord.

Thalamus, Hypothalamus, Limbic system and Pineal gland

GENETICS:

Chromosomes-Denvers classification

Karyotyping

Chromosomal aberrations.

Prenatal diagnosis and Genetic counselling.

HISTOLOGY

General

The Cell and Microscope

Epithelium

Connective tissue including cartilage and bone

Muscle

Nervous tissue : Peripheral nerve, optic nerve, spinal ganglion, sympathetic ganglion,

Blood vessels

Lymphoid tissue

Skin

Glands and Salivary glands (serous, mucous and mixed gland)

SYSTEMIC

Tooth, lip, tongue

oesophagus, cardio-esophageal junction, stomach

Duodenum , jejunum, ileum

colon, vermiform appendix

Liver, Pancreas, Gall bladder

Lung, Trachea

Thyroid gland , para thyroid gland , supra renal gland and pituitary gland

Kidney, Ureter, Urinary bladder

Male reproductive system-Testis, epididymis , prostate and seminal vesicle

Ovary, uterus, breast

Placenta and umbilical cord

Spinal cord

Cerebrum

Cerebellum

Eye-Retina, cornea, sclero –corneal junction

EMBRYOLOGY

General

Cell Division

Spermatogenesis & Oogenesis

ovarian cycle , Menstrual cycle

Fertilization & I week of development

2nd week of development

3rd week of development

Embryonic period

Placenta

Twin, Prenatal diagnosis, Teratology

Systemic

Cardiovascular system

Development of blood vessels and fetal circulation

Digestive system

Development of Peritoneal cavity and anterior abdominal wall

Development of foregut

Development of midgut

Development of hindgut

Urinary system

Male reproductive system

Female reproductive system embryology

Diaphragm, blood vessels and Adrenal gland

Head and Neck:

Development of face, palate

Development of teeth

Development of eyeball

Pharyngeal arch and pouches

Development of oral cavity and tongue

Development of thyroid and pituitary

CNS development

Development of skeletal system

Development of muscular system and skin

HUMAN ANATOMY PRACTICAL'S SCHEME

I	Gross Spotters
	Upper limb Lower limb Abdomen Pelvis perineum Thorax Head & Neck Brain & Spinal Cord
II	Histology Spotters
	General (4) Systemic (8) <input type="checkbox"/> Paper I <input type="checkbox"/> Paper II
III	OSPE
	2 stations - Surface Marking 1 from each paper 2 stations for charts / models without preformed questions (Questions have to be framed on the day of examinations by examiners)
IV	Discussion
	Gross – Paper I Paper II Histology – General Systemic

HUMAN ANATOMY PRACTICAL

VIVA SESSION

Radiology	5 marks
Osteology	5 marks
Clinical Anatomy & Genetics	5 marks
Embryology	5 marks
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Total	20 marks

PHYSIOLOGY SYLLABUS – THEORY

TOPICS DISTRIBUTION

Paper- I

- General Physiology
- Hematology
- Nerve-Muscle Physiology
- Gastro-Intestinal Physiology
- Renal Physiology
- Endocrine Physiology
- Reproductive Physiology

Paper- II

- Cardiovascular physiology
- Respiratory physiology
- Neurophysiology (Central Nervous System and Special Senses)
- Integrated Physiology

PHYSIOLOGY SYLLABUS

THEORY

List of systems in Physiology

General Physiology (PY 1.1-1.9)

Hematology: (PY 2.1 -2.13)

Nerve & Muscle Physiology: (PY 3.1 - 3.18)

Gastrointestinal Physiology: (PY 4.1 -4.10)

Renal Physiology: (PY 7.1 - 7.9)

Endocrine Physiology: (PY 8.1 - 8.6)

Reproductive Physiology: (PY 9.1 -9.12)

Cardiovascular Physiology: (PY 5.1 - 5.16)

Respiratory Physiology: (PY 6.1-6.10)

Neurophysiology: (PY 10.1 - 10.20)

Integrated Physiology: (PY 11.1 - 11.14)

PRACTICAL

The following list of practical is minimum and essential. Additional exercises can be included as **Procedures to be performed by the students:**

a. Haematology:

1. RBC count
2. WBC Count
3. Differential Leucocyte Count
4. Estimation of haemoglobin
5. Blood grouping
6. Bleeding time
7. Clotting time
8. Calculate RBC indices - MCV, MCH, MCHC.

b. Procedures to be performed on human subjects:

1. Mosso's ergography.
2. Recording of Blood Pressure, pulse rate at rest and effect of posture.
3. Effect of mild and moderate exercise on blood pressure, pulse rate and respiratory rate using Harvard step test.
4. Record and interpret Lead II ECG. Given a normal ECG, determine cardiac axis.
5. Spirometry – Lung volumes and capacities, MVV, Timed vital capacity.
6. Peak Expiratory Flow Rate
7. Demonstrate Basic Life Support in a simulated environment
8. Visual field by Perimetry

c. Clinical Examination:

1. Components of history taking and general physical examination
2. Examination of radial pulse
3. Examination of Cardiovascular system
4. Examination of Respiratory system
5. Examination of abdomen
6. Examination of Higher mental functions
7. Examination of Sensory system
8. Examination of Motor system including reflexes.
9. Examination of Cranial Nerves

ii. Demonstrations:

i. Haematology:

1. Erythrocyte sedimentation rate
2. Haematocrit
3. Reticulocyte count
4. Platelet count
5. Osmotic fragility
2. Record Arterial pulse tracing using Students Physiograph
3. Stethography
4. Tests of cardiovascular autonomic functions*

iii. Interpretation- charts: clinical case histories, graphs, charts, problems

SKILL CERTIFICATION:

The list of certifiable skills is given below. The general instructions, blank template, samples of

List and number of sessions for skill certification as prescribed by MCI:

	Topics	Number required to certify as per MCI
PY5.12	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	1 each x 3
PY6.9	Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment	1
PY 10.11	Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment	1 each (total 5)
PY 10.20	Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer / simulated environment	1 each (total 4)

SUGGESTED AREAS FOR INTEGRATION:

As per the “Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India”

EARLY CLINICAL EXPOSURE:

- **Clinical visits: 12 hours** (Suggested format for assessing participation in ECE sessions is provided as **ANNEXURE III which could be a part of the practical record book**)
Suggested hospital visits: (can include more than the below suggestions)
Anemia, Jaundice, Visit to blood bank, Computerized lung function tests, acid peptic disease, endoscopy procedure, dialysis unit, hemiplegia, etc.
- **Basic science correlations: 18 hours**
Discussion based on case vignettes, graphs, clinical videos, patient in classroom setting, etc linked to various systems in physiology.

SELF-DIRECTED LEARNING:

Twenty-five hours of dedicated time for self-directed learning is provided for physiology.

AETCOM MODULES TO BE COVERED UNDER PHYSIOLOGY:

AETCOM module number (as per MCI document) *	Topic
1.2	What does it mean to be a patient?
1.3	The doctor-patient relationship

Suggested format for reflective writing for the above AETCOM modules is given in

LOG BOOK:

Suggested Template of logbook is attached as annexure. The minimum elements that needs to be included are mentioned in the template provided **for log book.**

BIOCHEMISTRY SYLLABUS – THEORY

TOPICS DISTRIBUTION

Paper – 1

Section A:

- Cell, Cell Membrane, Transport across membrane and associated disorders
- Chemistry and Metabolism of Carbohydrate, Lipids and Proteins
- Bioenergetics and E.T.C
- Haemoglobin and Myoglobin
- Haeme Synthesis & Degradation and Porphyrins

Section B:

1. Enzymes, Clinical Enzymology
2. Vitamins
3. Minerals
4. Water and Electrolyte balance and disorders
5. Plasma Proteins
6. Diabetes

Paper – II

Section A:

1. Acid-base balance and disorders
2. Immunology
3. Free radicals and anti-oxidants
4. Xenobiotics, Detoxification and Environmental Biochemistry
5. Nutrition

Section B:

1. Hormones
2. Function tests: Liver, Kidney, Thyroid, Gastric, Panceratic, Adrenal,
3. Nucleotide and Nucleic acids, its metabolism and repair
4. Recombinant DNA technology and Diagnostics
5. Cancer Biochemistry and Tumor Markers.

Biochemistry syllabus-Theory

Basic biochemistry (BI 1.1)

Enzyme (BI2.1- 2.7)

Chemistry and Metabolism of Carbohydrates (BI3.1- 3.10)

Chemistry and Metabolism of lipids (BI4.1- 4.7)

Chemistry and Metabolism Protein (BI5.1- 5.5)

Molecular biology (BI 7.1- 7.7)

Nutrition (BI 8.1- 8.5)

Extracellular Matrix (BI9.1- 9.3)

Oncogenesis and Immunity (BI10.1- 10.5)

Biochemical Laboratory Tests (BI11.1- 11.24)

Metabolism and Homeostasis (BI6.1 – 6.15)

ACADEMIC PRACTICALS LIST

The following list of practical is minimum and essential. Additional exercises can be included as **Procedures to be performed by the students:**

1. Color reaction of Carbohydrates
2. Color reactions of Amino Acids
3. Color reactions of Proteins
4. Practical on protein precipitation, fractionation, denaturation
5. Estimation of Plasma Glucose
6. Estimation of Serum Total Protein
7. Estimation of Serum Albumin
8. Estimation of A/G ratio
9. Estimation of Blood urea
10. Estimation of Serum Creatinine
11. Estimation of Serum Uric Acid
12. Urinary Analysis - Normal
13. Urinary Analysis - Abnormal

Demonstrations:

1. Laboratory Instrumentation
2. Principles of Colorimetry and Spectrophotometry
3. Plasma Protein Electrophoresis
4. Estimation of AST, ALT, ALP, Calcium and Phosphorus

Interpretation:

Charts

- 1] Clinical case histories &
- 2] OGTT Graphs.