MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)
Grade 'A' Accredited by NAAC
Sector-01, Kamothe, Navi Mumbai -410 209
Tel 022-27432471, 022-27432994, Fax 022 -27431094
E-mail: registrar@mgmuhs.com; Website :www.mgmuhs.com

Curriculum for

First M.B.B.S
Human Anatomy

Amended upto BOM 57/2019, Dated 26/04/2019

Amended History

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11. Amended upto BOM 55/2018, Resolution No. 4.5.1.2, Resolution No. 4.5.1.3, Resolution No. 4.13, Dated 27/11/2018.
12. Amended upto BOM 57/2019, Resolution No. 3.1.4.2, dated 26/04/2019.

GENERAL CONSIDERATIONS AND TEACHING APPROACH

(1) Graduate medical curriculum is oriented towards training students to undertake the responsibilities of a physician of first contact who is capable of looking after the preventive, promotive, curative & rehabilitative aspect of medicine.

(2) With wide range of career opportunities available today, a graduate has a wide choice of career opportunities. The training, though broad based and flexible should aim to provide an educational experience of the essentials required for health care in our country.

"Training should be able to meet internationally acceptable standards."

(3) To undertake the responsibilities of service situations which is a changing condition and of various types, it is essential to provide adequate placement training tailored to the needs of such services as to enable the graduates to become effective instruments of implementation of those requirements. To avail of opportunities and be able to conduct professional requirements, the graduate shall endeavour to have acquired basic training in different aspects of medical care.

(4) The importance of the community aspects of health care and of rural health care services is to be recognized. This aspect of education & training of graduates should be adequately recognized in the prescribed curriculum. Its importance has been systematically upgraded over the past years and adequate exposure to such experiences should be available throughout all the three phases of education & training. This has to be further emphasized and intensified by providing exposure to field practice areas and training during the internship period. The aim of the period of rural training during internship is to enable the fresh graduates to function efficiently under such settings.

(5) The educational experience should emphasize health and community orientation instead of only disease and hospital orientation or being concentrated – on - curative - aspects. As such all the basic concepts of modern scientific medical education are to be adequately dealt with.

(6) There must be enough experiences to be provided for self learning. The methods and techniques that would ensure this must become a part of teaching - learning process.

(7) The medical graduate of modern scientific medicine shall endeavour to become capable of functioning independently in both urban and rural environment. He/she shall endeavour to give emphasis on fundamental aspects of the subjects taught and on common problems of health and disease avoiding unnecessary details of specialization.

(8) The importance of social factors in relation to the problem of health and diseases should receive proper emphasis throughout the course and to achieve this purpose, the educational process should also be community based than only hospital based. The

importance of population control and family welfare planning should be emphasized throughout the period of training with the importance of health and development duly emphasized.

(9) Adequate emphasis is to be placed on cultivating logical and scientific habits of thought, clarity of expression and independence of judgment, ability to collect and analyze information and to correlate them.

(10) The educational process should be placed in a historic background as an evolving process and not merely as an acquisition of a large number of disjointed facts without a proper perspective. The history of Medicine with reference to the evolution of medical knowledge both in this country and the rest of the world should form a part of this process.

(11) Lectures alone are generally not adequate as a method of training and are a poor means of transferring/acquiring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstration and on firsthand experience. Students will be encouraged to learn in small groups, through peer interactions so as to gain maximal experience through contacts with patients and the communities in which they live. While the curriculum objectives often refer to areas of knowledge or science, they are best taught in a setting of clinical relevance and hands on experience for students who assimilate and make this knowledge a part of their own working skills.

(12) The graduate medical education in clinical subjects should be based primarily on out-patient teaching, emergency departments and within the community including peripheral health care institutions. The out-patient departments should be suitably planned to provide training to graduates in small groups.

(13) Clinics should be organized in small groups of preferably not more than 10 students so that a teacher can give personal attention to each student with a view to improve his skill and competence in handling of the patients.

(14) Proper records of the work should be maintained which will form the basis for the students' internal assessment and should be available to the inspectors at the time of inspection of the college by the Medical Council of India.

(15) Maximal efforts have to be made to encourage integrated teaching between traditional subject areas using a problem based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both understanding and resolution of the problem. Every attempt be made to de-emphasize compartmentalization of disciplines so as to achieve both horizontal and vertical integration in different phases.

(16) Every attempt is to be made to encourage students to participate in group discussions and seminars to enable them to develop personality, character, expression and other faculties which are necessary for a medical graduate to function either in solo practice or as a team leader when he begins his independent career. A discussion group should not have more than 20 students.

(17) Faculty member should avail of modern educational technology while teaching the students and to attain this objective, Medical Education Units/ Departments be established in all medical colleges for faculty development and providing learning resource material to teachers.

(18) To derive maximum advantage out of this revised curriculum, the vacation period to students in one calendar year should not exceed one month, during the 4 ½ years Bachelor of Medicine and Bachelor of Surgery (MBBS) Course.

(19) In order to implement the revised curriculum in Toto, State Govts. and Institution Bodies must ensure that adequate financial and technical inputs are provided.

(20) HISTORY OF MEDICINE –The students will be given an outline on "History of Medicine". This will be taught in an integrated manner by subject specialists and will be coordinated by the Medical Education Unit of the College.

(21) All medical institutions should have curriculum committee which would plan curricula and instructional method which will be regularly updated.

(22) Integration of ICT in learning process will be implemented.

OBJECTIVE OF MEDICAL GRADUATE TRAINING PROGRAMME:

(1) **NATIONAL GOALS** : At the end of undergraduate program, the medical student should be able to :

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

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

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

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

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

(2) **INSTITUTIONAL GOALS**: (1) In consonance with the goals each medical institution should evolve institutional goals to define the manpower (or professionals) they intend to produce. The undergraduate students coming out of a medical institute should:

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

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

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

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

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

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

(i) Family Welfare and Material and Child Health(MCH)

(ii) Sanitation and water supply

(iii) Prevention and control of communicable and non-communicable diseases
(iv) Immunization
(v) Health Education
(vi) IPHS standard of health at various level of service delivery, medical waste disposal.
(vii) Organizational institutional arrangements.

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

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

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

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

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

All efforts must be made to equip the medical graduate to acquire the skills as detailed under :

A comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Graduate:

1. **Clinical Evaluation**:

(a) To be able to take a proper and detailed history.
(b) To perform a complete and thorough physical examination and elicit clinical signs.
(c) To be able to properly use the stethoscope, Blood Pressure, Apparatus Auroscope, Thermometer, Nasal Speculum, Tongue Depressor, Weighing Scales, Vaginal Speculum etc.:
(d) To be able to perform internal examination-Per Rectum (PR), Per Vaginum (PV) etc.
(e) To arrive at a proper provisional clinical diagnosis.

II. **Bed side Diagnostic Tests**:

(a) To do and interpret Haemoglobin (HB), Total Count (TC), Erythrocytic Sedimentation Rate (ESR), Blood smear for parasites, Urine examination /albumin /sugar /ketones /microscopic:
(b) Stool exam for ova and cysts;
(c) Gram, staining and Siehl-Nielsen staining for AFB;
(d) To do skin smear for lepra bacilli
(e) To do and examine a wet film vaginal smear for Trichomonas
(f) To do a skin scraping and Potassium Hydroxide (KOH) stain for fungus infections;
(g) To perform and read Montoux Test.

III. **Ability to Carry Out Procedures**:

(a) To conduct CPR (Cardiopulmonary resuscitation) and First aid in newborns, children and adults.
(b) To give Subcutaneous (SC) /Intramuscular (IM) /Intravenous (IV) injections and start Intravenous (IV) infusions.
(c) To pass a Nasogastric tube and give gastric leavage.
(d) To administer oxygen-by masic/catheter
(e) To administer enema
(f) To pass a ruinary catheter-male and female
(g) To insert flatus tube
(h) To do pleural tap, Ascitic tap & lumbar puncture
(i) Insert intercostal tube to relieve tension pneumothorax
(j) To control external Haemorrhage.

IV Anaesthetic Procedure

(a) Administer local anaesthesia and nerve block
(b) Be able to secure airway potency, administer Oxygen by Ambu bag.

V **Surgical Procedures**

(a) To apply splints, bandages and Plaster of Paris (POP) slabs;
(b) To do incision and drainage of abscesses;
(c) To perform the management and suturing of superficial wounds;
(d) To carry on minor surgical procedures, e.g. excision of small cysts and nodules, circumcision, reduction of paraphimosis, debridement of wounds etc
(e) To perform vasectomy;
(f) To manage anal fissures and give injection for piles.

VI **Mechanical Procedures**

(a) To perform thorough antenatal examination and identify high risk pregnancies.
(b) To conduct a normal delivery;
(c) To apply low forceps and perform and suture episiotomies;
(d) To insert and remove IUD's and to perform tubectomy

VII **Paediatrics**

(a) To assess new borns and recognize abnormalities and I.U. retardation
(b) To perform Immunization;
(c) To teach infant feeding to mothers;
(d) To monitor growth by the use of 'road to health chart' and to recognize development retardation;
(e) To assess dehydration and prepare and administer Oral Rehydration Therapy (ORT)
(f) To recognize ARI clinically;

VIII **ENT Procedures**:

(a) To be able to remove foreign bodies;
(b) To perform nasal packing for epistaxis;
(c) To perform trachesotomy

IX **Ophthalmic Procedures**:

(a) To invert eye-lids;
(b) To give Subconjunctival injection;
(c) To perform appellation of eye-lashes;
(d) To measure the refractive error and advise correctional glasses;
(e) To perform nasolacrimal duct syringing for potency

X. **Dental Procedures**:

To perform dental extraction

XI **Community Healthy**:

(a) To be able to supervise and motivate, community and para-professionals for corporate efforts for the health care;
(b) To be able to carry on managerial responsibilities, e.g. Management of stores, indenting and stock keeping and accounting
(c) Planning and management of health camps;
(d) Implementation of national health programmes;
(e) To effect proper sanitation measures in the community, e.g. disposal of infected garbage, chlorination of drinking water;
(f) To identify and institute and institute control measures for epidemics including its proper data collecting and reporting.

XII **Forensic Medicine Including Toxicology**

(a) To be able to carry on proper medico legal examination and documentation of injury and age reports.
(b) To be able to conduct examination for sexual offences and intoxication;
(c) To be able to preserve relevant ancillary material for medico legal examination;
(d) To be able to identify important post-mortem findings in common un-natural deaths.

XIII **Management of Emergency**

(a) To manage acute anaphylactic shock;
(b) To manage peripheral vascular failure and shock;
(c) To manage acute pulmonary oedema and LVF;
(d) Emergency management of drowning, poisoning and seizures
(e) Emergency management of bronchial asthma and status asthmaticus;
(f) Emergency management of hyperpyrexia;
(g) Emergency management of comatose patients regarding airways, positioning prevention of aspiration and injuries
(h) Assess and administer emergency management of burns

Syllabus for
HUMAN ANATOMY

INDEX

BROAD CURRICULUM AS PER MCI GUIDELINES (HUMAN ANATOMY)

(a) Goal

The broad goal of the teaching of undergraduate students in Anatomy aims at providing comprehensive knowledge of the gross and microscopic structure and development of human body to provide a basis for understanding the clinical correlation of organs or structures involved and the anatomical basis for the disease presentations.

(b) **Objectives** :

A) **Knowledge** :

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

a. Comprehend the normal disposition, clinically relevant interrelationships, functional and cross sectional anatomy of the various structures in the body.

b. Identify the microscopic structure and correlate elementary ultra-structure of various organs and tissues and correlate the structure with the functions as a prerequisite for understanding the altered state in various disease processes.

c. Comprehend the basic structure and connections of the central nervous system to analyze the integrative and regulative functions and systems. He / She should be able to locate the site of gross lesions according to the deficits encountered.

d. Demonstrate knowledge of the 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. He/She should be able to explain the developmental basis of the major variations and abnormalities.

(B) **Skills**:

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

(a) Identify and locate all the structures of the body and mark the topography of the living anatomy.

(b) Identify the organs and tissues under the microscope.

(c) Understand the principles of karyotyping and identify the gross congenital anomalies.

(d) Understand principles of newer imaging techniques and interpretation of Computerized Tomography (CT) Scan, Sonogram etc.

(e) Understand clinical basis of some common clinical procedures i.e., intramuscular & intravenous injection, lumbar puncture and kidney biopsy etc.

(C) **Integration**

From the integrated teaching of other basic sciences, student should be able to comprehend the regulation and integration of the functions of the organs and systems in the body and thus interpret the anatomical basis of disease process.

SYLLABUS & TEACHING HOURS DISTIBUTION
(1ST Year MBBS)

		Topic	Lect	Demo	LD	Diss	Practical
1.	**GENERAL ANATOMY**						--
		Introduction to Anatomy	1				
		Terminology			1		
		Bone	1	1		3	
		Joints	2				
		Skin & fascia	1				
		Muscle	1				
		Circulatory System	1				
		Nervous System	1				
		Lymphatic System	1				
2.	**UPPER LIMB**	**Region** Back	1			28.5	-
		Scapular region			1		
		Pectoral region			1		
		Mammary Gland	1				
		Axilla	1				
		Arm i. Back			1		
		ii. Front					
		Cubital fossa		1			
		Fore arm i. Front			1		
		ii. Back			1		
		Palm					
		Anatomical Snuff box		1			
		Palmar. Spaces		1			
		Bones Scapula		1		-	-
		Clavicle		1			
		Humerus		1			
		Radius		1			
		Ulna		1			
		Articulated hand		1			
		Muscles Intrinsic muscles of Hand			1	3	-

		Nerves	Brachial plexus	1			3	
			Radial nerve	1				
			Median nerve	1				
			Ulnar nerve	1				
			Axillary nerve			1		
		Vessels	Axillary Artery			1		-
			Anastamosis around scapula			1		
			Palmar arches			1	1.5	
		Joints	Shoulder	1			3	-
			Elbow	1				
			Wrist & 1st CMC	1				
			Radioulnar	1				
		Revision					6	
3.	**LOWER LIMB**	**Region**	Front of thigh			1	33	-
			Femoral Triangle	1				
			Femoral Sheath		1			
			Gluteal region	1				
			Adductor canal			1		
			Popliteal fossa		1	1		
			Back of thigh			1		
			Leg			2		
		Bones	Hip bone		2		-	-
			Femur		2			
			Tibia/fibula		2			
			Patella					
			Articulated foot with Talus & calcanium		1			
		Muscles	Layers of sole			1	3	
		Nerves	Femoral & Obturator nerve					
			Sciatic Nerve	1		1		
		Vessels	Femoral Artery				3	-
			Popliteal Artery					
			Vessels of Leg & sole			1		

			Venous Drainage of Lower limb	1				
		Joint	Hip	1			3	
			Knee	1				
			Ankle	1				
			Subtalar Joint. Inversion& Eversion	1				
			Arches of foot	1				
		Revision					9	
4	**THORAX**	**Bones**	Sternum		1		-	-
			Rib		1			
			Thoracic Vertebra		2			
		Thoracic cage	Intercostal space	1		1	19.5	-
			Mechanism & movement of respiration	1				
			Pleura	1				
			Lung & Bronchopulmonary segments	1	2			
			Pericardium	1				
			Coronary circulation	1				
			Heart –External & Internal features		2			
			Division of mediastinum and superior mediastinum					
				1				
			Posterior Mediastinum			1		
			Diaphragm	1				
		Vessels	Azygous system	1				
		Revision					4.5	
5.	**ABDOMEN & PELVIS**	**Bones**	Pelvis		2		-	-
			Lumber vertebra		1			
			Sacrum		1			

			Anterior Abdominal wall Rectus sheath	1			10.5	-
			Inguinal canal	1				
			Testis and spermatic cord	1				
			Peritoneum	2				
		Organs	Liver		1		19.5	
			Extrahepatic biliary apparatus	1				
			Portal Vein and Portocaval anastamosis	1				
			Stomach	1	1			
			Duodenum	1	1			
			Small & Large intestines		1	1		
			Posterior abdominal wall			1		
			Abdominal aorta			1		
			Anal canal	1				
			Rectum			1		
			Pancreas	1	1			
			Spleen			1		
			Kidney	1	1			
			Supra renal			1		
			Ureter					
			Prostate		1			
			Uterus	1				
			Fallopian tube, Ovary and Uterus		1			
			Urinary bladder	1	1			
		Pelvis	Perineal pouches	1			10.5	
			Ischiorectal fossa	1				
			Male urethra	1				
			Pelvic diagram	1				
		Revision					9	

6.	**NEURO ANATOMY**		Spinal cord	2				
			Lumber vertebra		1			
			Medulla	1			1.5	
			Pons	1				
			Cerebellum	1		1		
			CSF circulation			1		
			4th Ventricle	1		1		
			Mid brain	1	1			
			Cerebrum					
			Surfaces & borders		1		4.5	
			Sulci & gyri	1				
			Functional area	1				
			Blood supply	1		1		
			White matter of cerebrum & Corpus callosum	1		1	1.5	
			Internal capsule	1	1		1.5	
			Gray matter					
			Basal ganglion	1				
			Lateral Ventricle	1	1			
			Thalamus	1			1.5	
			3rd Ventricle	1				
			Blood supply & Circle of willis	1		1	1.5	
			CSF circulation & cisterns			1		
			Limbic System	1				
			Reticular formation	-				
			Autonomic nervous system	1				
		Meninges	Layers & folds			1	1.5	
			Dural Venous sinuses	2				
		Revision					7.5	
7	**HEAD FACE & NECK**	**Bones**	Normas		2			
			Mandible		1			
			Cervical Vertebra		1			
			Cranial fossa		2			
			Foetal skull		1			
			Scalp	1				

			Face	1		1		
			Neck	2		1		
			Midline structure					
			Deep cervical fascia	1				
		Muscle				2		
		Nerves	Introduction to functional components	1			46.5	
			III, IV, VI	1				
			VII	1				
			IX	1				
			XI			1		
			XII	1				
			X	1				
		Vessels	Common carotid & External carotid arteries			1		
			Jugular veins			1		
			Subclavian artery			1		
			Maxillary artery			1		
		Glands	Parotid	1	1			
			Thyroid	1	1			
			Submandibular & Sublingual	1				
			Pituitary	1				
			Infratemporal fossa					
			Muscles of Mastication		1			
			Introduction to Vth cranial nerve & Mandibular Nerve	1		1		
			Parasympathetic ganglion			2		
			Pterygoid plexus of veins			1		
			Temporomandibular joint	1				
			Tongue	1				
			Pharynx	1	1			

			Larynx	2				
			Orbit and extra ocular muscles	1				
			Nasal cavity	1				
			Ear			1		
			Middle ear	1				
			Tympanic membrane & auditory tube	1		1		
			Movements of eye		1			
			Palate	1				
			Tonsil					
			Paranasal air sinuses			1		
		Revision					12	
8	**HISTOLOGY**	**General Histo**	Microscope	1				2
			Cells & organelles	1				2
			Epithelium	1				2
			Connective Tissue	1				2
			Cartilage	1				2
			Bones	1				2
			Muscle	1				2
			Nervous System	1				2
			Blood vessels	1				2
			Lymphoid System	2				4
			Skin	1				2
		Revision						10
		Systemic Histo	Tongue & Salivary gland	1				
			Oesophagus & stomach	1				2
			Small & Large intestines & appendix	1				2
			Accessory organs of digestive system	1				
			Respiratory System	1				2
			Urinary system	1				2
			Male reproductive system	1				2
			Female reproductive	2				2

			system					
			Endocrines	1				4
			Nervous system	1				2
			Eye- retina & cornea	1				2
								2
		Revision	Cell division	1				15
9.	**EMBRYOLOGY**	**Gen Emb**	Spermatogenesis	1				
			Oogenesis & follicular devp	1				1
			Menstrual Cycle	1				
			Fertilization	1				1
			1st Wk of devp	1				1
			2nd Wk of Devp	1				
			3rd wk ofDevp	2				1
			4th wk of Devp					
			Folding of embryo	1				
			Derivatives of germ layer	2				1
			Choriinic villi					1
			Placenta	2				
								1
		Revision						4
		Systemic Emb	Primordial gut and its derivatives	1				
			Rotation of stomach & duodenum	1				
			Rotation of Gut	1				1
			Development of pancreas & Liver	1				1
			Development of Anal canal	1				1
			Cardiovascular system	3				1
			Urogenital system	2				2
			Respiratory system	1				2
			Pharyngeal Arch	1				
			Pouches, thyroid development	1				1
			Face	1				
			Palate	1				1

			Nervous system	3				1
			Skeletal system	1				
			Revision					
			Revision					6
10	**GENETICS**		Karyotyping	1				
			Chromosomal abnormalities and syndromes	5		1		
11	**RADIOLOGY**		Principles of Radiology	1		-	-	-
			Upper limb		1			
			Lower limb		1			
			Thorax		1			
			Abdomen		1			
			Pelvis					
			Head face and neck		1			
			Neuroanatomy		1			
					1			
		Revision			5			
12	**LIVING ANATOMY**		Movements of joints		1	-	-	-
			Upper limb		1			
			Lower Limb		1			
			Thorax		1			
			Abdomen and Pelvis		1			
			Head face and neck		1			
		Revision			5			

	THEORY		PRACTICAL			
	Lecture	**Lecture cum Demo**	**Demonstration**	**Dissection**	**Histology practicals**	**Embryology practicals**
TEACHING HOURS	167	53	78	252	71	29
TOTAL	**220**			**430**		

Horizontal Integration: Is done in collaboration with physiology and biochemistry departments on clinically relevant topics during the course.

DEPARTMENT OF ANATOMY
M. G. M. Institute of Health Sciences, Navi Mumbai

SYLLABUS

I General Anatomy

Introduction to Anatomy

Tissues of body (Organization)

Terminology

Bone

Joints

Skin and Fascia

Muscle

Circulatory System

Nervous System

Lymphatic System

Introduction of imaging techniques.

Must Know:

1. Bone – Classification, Sesamoid bone, Parts of a growing long bone blood supply of long bone. Parts of long bone, ossification and its classification; epiphysis and its types. Laws of ossification.

2. Tissues of body: organization of tissue; types of tissues and organization of organ systems with systemic organization.

2. Joints – Classification

Fibrous joints, cartilaginous joints, Synovial joints – Classification

3. Skin and fascia

~~Structure and Functions of Skin~~

~~Thick skin, thin skin, skin appendages.~~

Superficial fascia, deep fascia, modifications of deep fascia

4. Muscle

Classification – Structural (in detail during histology lect.), functional and morphological

Origin, Insertion, Tendon, ligaments, Bursae

5. Circulatory System

Types of circulation and its importance; classification of vessels (anatomical and physiological); Factors affecting venous return.

Structure of blood vessels, anastomosis, end arteries

6. Lymphatic System

Lymphatic circulation, circulating lymphocytes, lymphoid tissue

7. Nervous System

Classification – Central Nervous System, Peripheral nervous system (PNS) and autonomic nervous system (ANS)

CNS Brain and Spinal Cord

PNS – Cranial Nerves, Spinal Nerves Typical Spinal Nerve & Dermatomes

ANS-Sympathetic Parasympathetic

Classification Neurons & Nerve fibres

Glial cells

Desirable To Know

Bursitis Kinesiology, close packed and loose packed joints, range of movements, spin, swing, levers

Langer's lines, Flexure creases, Dermatoglyphics, Skin graft, atherosclerosis, Myelination

II Upper limb

Must Know:

1. Regions - Back, Scapular region, Pectoral region, Mammary gland, axilla, front of arm, back of arm, Cubital fossa, front of forearm, palm, back of forearm Anatomical snuff box.
2. Bones - Humerus, Scapula, Clavicle, Radius, Ulna, articulated hand. supracondylar fracture, colles fracture
3. Muscle Attachments, Nerve Supply, actions. Intrinsic muscles of hand
4. Nerves - Brachial plexus, Radial Nerve, Median nerve, Ulnar nerve, axillary nerve, musculocutaneous nerve.
5. Vessels – Axillary artery, Subscapular anastomosis, brachial artery, radial and ulnar arteries, superficial and deep palmar arches.
6. Joints – shoulder girdle, elbow joint wrist joint, Superior and inferior radioulnar joint 1st carpometacarpal joint.
7. Applied – Erb's palsy, klumpke's paralysis, winging of scapula, Tennis elbow, wrist drop, claw hand, dupuytren's contracture, carpal tunnel syndrome.

Desirable to know

Palmar spaces and its clinical importance, fracture of neck of Humerus.

III Lower limb

1. Regions: - Front of thigh, femoral triangle, femoral sheath. Gluteal region, adductor canal, popliteal fossa, back of thigh.

2. Bones-Hip bone, Femur, Tibia, Fibula, Patella, articulated foot, Special mention about talus and calcaneum.

3. Muscles – Attachments, nerve supply and actions of quadriceps femoris, gluteus maximus, Gluteus medius and minimus. Adductor group, hamstring group, Muscles of leg specially soleus and muscular layer of sole.

4. Nerves – Femoral nerve, Obturator nerve, Sciatic nerve, Tibial and common peroneal nerve, foot drop.

5. Vessels – Femoral artery, popliteal artery, vessels of leg and sole and venous drainage of lower limb.

6. Joints – Hip joint, knee joint, ankle joint, subtalar joint, arches of foot, trendelenburg sign and test, dislocation of hip joint.

Desirable to know

Femoral hernia, cruciate and trochanteric anastomosis, blood supply of head of femur, fracture neck of femur, Meniscal tear, cruciate ligament tear, varicose vein,

IV Thorax

Bones – Ribs, sternum, Thoracic vertebrae

Thoracic cage – Inlet, outlet, intercostal spaces with its blood supply and nerve supply with its clinical importance and mechanism of respiration.

Mediastinum – Divisions of mediastinum and boundaries and contents

Pleura, lung, Bronchopulmonary segments

Pericardium and heart

Diaphragm – development, Nerve supply, openings.

Vessels of thorax: Aorta, azygous venous system, superior vena cava and its tributaries.

pleuritis, pleural effusion, Pericardial effusion, myocardial infarction, congenital anomalies of heart

Diaphragmatic hernia

Desirable to know –

Intercostal drainage, Medistenal syndrome.

V Abdomen and pelvis

Must Know:

1. Bones – Pelvis: Types of pelvis, dimensions of pelvis and pelvimetry and difference between male and female, lumbar vertebrae, sacrum
2. Anterior abdominal wall – Muscles, nerves, blood supply, Rectus sheath and scrotum and inguinal canal.
3. Spermatic cord
4. Testis
5. Peritoneum – Greater sac, lesser sac, Epiploic foramen, Greater omentum lesser omentum, Vertical and horizontal disposition and mesentries.
6. Organs

    Liver, extrahepatic biliary apparatus portal vein, porto caval anastomosis

    Stomach

    Duodenum

    Small and large intestine

    Posterior abdominal wall: muscles, abdominal aorta and inferior vena cava.

    Rectum and anal canal

Pancreas, spleen, Appendix, kidney, suprarenal glands, ureter, prostate Uterus, fallopian tubes, ovary, urinary bladder – neurological bladder

6. Pelvis, Pelvic diaphragm

Perineal pouches, ischiorectal fossa, male urethra, Pelvic vessels and nerves. Abdominal incisions – hernia – inguinal and incisional; Peptic ulcer, carcinoma pancreas, pancreatitis, colonoscopy, proctoscope, splenomegaly, appendicitis, hydronephrosis ureteric stones, cystoscopy. prostatectomy, pouch of douglas. Tubectomy, ovarian cyst, cervical carcinoma, psoas abscess.

Desirable to know:

Abdominal incisions – hernia – inguinal and incisional, vasectomy, varicocele, hydrocele, subphrenic spaces, ascites and abdominal tapping, Hepatic Segments, cholecystitis, liver biopsy, gastroscopy,

V Neuroanatomy

Must Know:

1. Spinal cord – External features, internal features, spinal meninges ascending and descending tracts, lumbar puncture, Blood supply of spinal cord and its clinical anatomy.

2. Medulla oblongata

External and internal features, Blood Supply, sections at sensory, pyramidal and olivary with correlation of nuclei and functional aspect. With vascular lesions and syndromic approach.

3. Pons

External and internal features and sections with nuclei and functional aspect. With vascular lesions and syndromic approach.

4. Cerebellum

Classification – anatomical and functional.

Peduncles – Superior, middle and inferior cerebellar peduncles, deep cerebellar nuclei.

Intracerebellar connections, functions of cerebellum.

Blood supply and vascular lesions.

5. 4th Ventricle and overall view of ventricular system and its communication.

(Boundaries, floor, roof).

6. Mid brain

External and internal features sections with lesions and reflexes.

7. Cerebrum

Surfaces and borders, lobes, sulci and gyri, functional areas

Blood supply

White matter – Classification, corpus callosum, internal capsule – components, blood supply & applied anatomy

Grey matter – Basal ganglia and its connections

8. Lateral ventricle

9. Diencephalon

Parts of diencephalon

Thalamus, hypothalamus. Gross connections major nuclei.

10. 3rd ventricle

Boundaries, recess

11. Blood Supply of Brain

Circle of willis

CSF circulation cisterns,

12. Meninges

Layers, dural folds, Dural venous sinuses.

13. Limbic system with tela chor., fornix.

14. Reticular formation.

15. Autonomic nervous system.

Clinical correlation syringomychia, Brown Sequard Syndrome, poliomyelitis tractotomy. Vertebral venous plexus, medullary syndromes. Arnold chiari syndrome. Pontine haemorrhage, pontine tumors. Cerebellar dysfunctions. Weber's syndrome Benedict's syndrome.

Desirable to know

met thalamus, Subthalamus, epithalamus.

split brain syndrome. Lesions of Basal ganglia vantriculegsephy. Hydrocephalus V-A Shint. Quickenstedf's sign. Blood brain barrier Nerve supply of dura cavernous sinus thrombosis cerebral naemoerhage cisternal puncture. Epidural spaces choroid plexus.

Spinal cord Cervical, thoracic lumar, sacral spinal, parasympathelic ganglia.

VI Head, Face & Neck

Must Know:

1. Bones skull – Normas, Parietal, Frontal, occipital, temporal, Mandible, Cervical vertebrae, fetal skull and Cranial fossa.

2. Scalp

3. Face – Muscles, Blood supply and nerve supply.

4. Neck – Triangles of neck – Boundaries and contents

Midline structure of neck

Deep cervical fascia

Muscles – Sternocleidomastoid, Trapezius, hyoglossus, Mylohyoid, Strap muscles.

Nerves – Over view of cranial nerves with its functional components and Trigeminal, Occulomotor nerve with abducent and trochlear, Hypoglossal nerve, vagus nerve, glossopharyngeal nerve, spinal accessory Nerve and fascial nerve.

Blood vessels – External carotid artery, subclavian artery.

Veins – Common carotid artery and Internal and external jugular veins

Glands – Parotid, thyroid, submandibular and sublingual glands.

5. Infratemporal fossa.

Muscles of mastication

Mandibular nerve

Maxillary artery

Parasymphathetic ganglions of HNF: Otic, Submandibular, Pteriogopalatine and ciliary ganglion.

Pterigoid plexus

Temporo Mandibular joint

6. Organs – Tongue, pharynx, larynx, Nasal cavity, orbit – muscles, nerves and vessels

Ear – Middle ear, tympanic membrane

Eye Ball, Extraocular muscles its attachments, nerve supply and movements.

Pallete, Tonsil and Para nasal sinuses.

Clinical anatomy: Dangerous area of face, Bell's palsy, dislocation of temporomandibular joint. Thyroidectomy. Subclavian steal syndrome, posterior triangle cold abscess, carcinoma tongue.

Desirable to know: -

Dangerous area of face, Bell's palsy, dislocation of temporomandibular joint. Thyroidectomy. Subclavian steal syndrome, posterior triangle cold abscess, carcinoma tongue, Nerve palsies of vocal cord, Internal ear, external ear tympanoplasty.

VII Histology

A. General histology

1. Microsopy and Types of microscope and lab techniques for H & E staining

1a: cell: Organelles and cytoskeleton.

2. Epithelia & glands – classification, cell surface modification

3. Connective tissue classification and formation its cellular component and matrix and tis clinical importance.

4. Cartilage classification and its composition.

5. Bone classification and its structure and cellular components.

6. Muscle

Classification and its structure and differences

Skeletal muscle, cardiac muscle and smooth muscle

7. Nervous tissue : Peripheral nerve.

Neurons, Glial, cells, myelination

8. Blood vessels: endothelium its modifications and functions.

Elastic artery, muscular artery, capillaries and vein

9. Lymphoid tissue

Thymus, spleen, lymphnode, tonsil – payer's patches, MALT

10. Skin - Thick skin, Thin skin, hair follicle and appendages.

B. Systemic histology

1. GIT

Lip, tongue, salivary glands

Submandibular parotid and sublingual glands

Oesophagus, Stomach, fundus, pylorus SI – Duodenum, Jejunum ileum

Large intestine, appendix

Accessory glands Liver, pancreas (Exocrine and endocrine) , gall bladder

2. Respiratory system (Overveiw of respiratory epithelum).

Epiglottis, Trachea, lung, Bronchi

3. Urinary system

Kidney, ureter, urinary bladder

4. Male reproductive system

Testis, Epididymis. Vas deferens, prostate

5. Female RS

Ovary, Fallopian tube, uterus, mammary gland and placenta, Umbilical cord.

6. Endocrine system

Pituitary gland, Thyroid and parathyroid glands, suprarenal gland

7. Nervous system: Spinal cord, Cerebrum and Cerebellum

8. Eye – Retina Cornea

9. Internal ear.

10. Intercelilular junctions developing bone. Growth of bone. Hypertophy, hyperplasia. Blood thymus barrier. Open and closed circulation. Hyprothalamo pituitary porta system.

Desirable to Know

Electron microscopy

Diabetes mellitus Hyaline membrane disease. Heart failure cells, juxta glomerular apparatus.. Pheochromocytoma

VIII Embryology

A. General – Cell division – mitosis & meiosis, crossing over.

Gametogenesis, spermatogenesis Oogenesis, follicular development and fertilization.

1st week of development – Zygote, cleavage division, Morula, blastocyst, implantation

2nd week of development -

Bilaminar embryonic disc, embryoblast, trophoblast, amniotic cavity, yolk sac chorion.

3rd week of development

Trilaminar embryonic disc, primitive streak, notochord, development of neural tube, Neural crest cells, vasculogenesis.

4th week of development

Folding of embryo – craniocaudal and lateral, foetal membrane – chorion, amnion, yolk sac, allantois umbilical cord.

Derivatives of 3 germ layers. Ectoderm, endoderm, mesoderm

Placenta

Role of molecular basis of primitive streak and Notochord on axis development.

Twining.

Teratology.

B. Systemic

1. GIT – Foregut, midgut, hindgut; Derivatives of each and Rotation of stomach and Gut.

Pancreas, liver

2. Urogenital

Kidney, ureter, UB, Uterus, FT, ovary & testis, external genitalia

3. Cardiovascular system

Development of heart folding of heart tube development of 4 chambers and Interatrial septum and ventricular septum and ASD and VSD and Fallot's tertralogy, aortic arches, foetal circulation

4. Respiratory system

Development of lungs

4a. Development of face,

Pharyngeal arches and pouches.

5. Nervous system

Development of functional components, neural crest cells. Neural tube folding formation of brain vesicles.

6. Development of skeletal system and concept of ectodermal and mesodermal interactions.

Developmental anomalies of GIT urinary system.

Development anomalies of heart & aortic arches. Development – IVC & portal vein tracheo esophageal fistula.

Desirable to know

Contraceptive methods, artificial-reproductive techniques chorionicvillis biopsy amniocenteris, fetoscopy USG, pregnanacy test. Sacrocoecygeal teratoma neural tube defects.

IX Genetics

Introduction

Mendel's Laws Chromosome-classification

Common syndrome, Gene, Codon.

Developmental genetics.

Numerical & structural aberrations Mendelian inheritance.

Hemoglobin disorders, thalassemia and sickle cell anaemia.

Cell cycle and cancer genetics.

Pedigree chart, prenatal genetic diagnosis, Genetic counseling.

Human Genome project.

X Radiological Anatomy

Principle of plain radiograms and CT scan, Ultrasonography, Color dopplar, MRI and PET scan and Nuclear Medicine. _Overview of various imaging techniques and role in diagnosis of human diseases or diorders.

Plain X – Concept of AP and Lateral view and X-Rays of shoulder elbow & wrist, hand hip joints, knee, ankle and foot, head. Concept of Estimation of age with x-rays.

AP and lateral x-ray of Skull and Paranasal sinuses water's view, cervical vertebra and lumbar vertebra lateral view.

Thorax – Plain X-ray of thorax AP and lateral

Abdomen – plain AP and lateral, contrast - Barium swallow, meal enema & follow through

Cholecystography,

pylography cystogram,

hysterosalpingography,

myelography bronchogram. Carotid angiogram, Abdominal aortogram.

Ultrasonography in developing fetus.

CT Scan. Plain and contrast, MRI

XI Living anatomy

Peripheral arterial pulsations

Bony prominences with relevant vertebral levels.

Joint movements: Shoulder joint, Pronation and supination, movements of thumb.

Movements of neck, trunk and knee joint, movements at fingers and ankle and subtalar joint.

Muscle testing: Tendon reflex with root values.

Nerve palpation – ulnar N. Common Peroneal Nerve

Landmarks seen externally and its clinical importance.

Anatomical snuff box

Skills – Site for lumbar puncture, sternal pericardial tapping, liver biopsy. Locate veins for venesection, locate site for emergency tracheostomy.

List of Prescribed books:

Prescribed Books for MBBS course, for *Anatomy*
MGM Indstitute of Health Sciences, Navi Mumbai.

Text Books

	Gen. Anatomy	Author	Edition
1	Hand book of General Anatomy	B. D. Chaurasia	5th
2	General Anatomy	Vishram Singh	2nd
	Gross Books		
1	Human Anatomy Vol I, II, III	B. D. Chaurasia	6th
2	Anatomy Vol I, II, III	Vishram Singh	2nd
3	Clinical Anatomy	Neeta Kulkarni	3rd
4	Manual of Practical Anatomy	Cunnigham's	15th
5	Grants Dissector	Tank	2nd
	Atlas		
1	Grant's Atlas of Anatomy	Agur	13th
2	Netter's Atlas of Anatomy		5th
	Histology		
1	Textbook of Human Histology	Inderbir Singh's	7th
2	Textbook of Histology (A Practical Guide)	J.P. Gunasegaran	2nd
3	Textbook of Histology	Krishna Garg	3rd
	Embryology		
1	Human Embryology	Inderbir Singh's	10th
2	Medical Embryology	Langman's	11th
	Neuroanatomy		
1	Textbook of Human Neuroanatomy	Inderbir Singh's	9th
2	Textbook of Clinical Neuroanatomy	Vishram Singh	2nd
	Genetics		
1	Medical Genetics	G P Pal	1st
2	Human Genetics	S. D. Gangane	4th

Prescribed Books for MBBS course, for *Anatomy*
MGM Indstitute of Health Sciences, Navi Mumbai.

Reference Books

	Anatomy	Author	Edition
1	Gray's Anatomy		40th
2	Clinical Anatomy by Regions	R. Snell	8th
3	Last's Anatomy (Regional and Applied)	Sinnatamby	12th
4	Recent Human Anatomy Vol: I, II, III	J Prasad	2nd
5	Atlas of Anatomy (Thieme)	Gilroy	3rd
	Histology		
1	Basic Histology Text and Atlas	Junqueira	13th
2	Functional Histology (A Text and Atlas)	Wheater's	6th
	Embryology		
1	The Developing Human	Keith Moore	9th
2	Human Embryology and Developmental Biology	Carlson	5th
	Neuroanatomy		
1	Functional Neuroanatomy (Text and Atlas)	Afifi	2nd
	Genetics		
1	Medical Genetics	Jorde	4th
2	Essentials of Human Genetics	Kothari	5th
3	Genetics in Medicine	Thompson & Thomson	8th

RULES & REGULATIONS OF EXAMINATION FOR THE SUBJECTS OF FIRST MBBS COURSE AT CONSTITUENT COLLEGES OF MGM UNIVERSITY OF HEALTH SCIENCES, NAVI MUMBAI
(Approved vide BOM – 04/2007 Resolution No. 4 and amended vide BOM-07/2008 Resolution No. 3.2)

1. **THEORY EXAMINATION IN ANATOMY**
   - 1.1. There shall be two papers in preliminary/university examination in the Anatomy The course content shall be distributed as per given below:
   - 1.2. **ANATOMY PAPER-I-** shall includes gross anatomy, systemic histology and systemic embryology of the region Superior extremity, head face, neck and neuro Anatomy.
   - 1.3. **ANATOMY PAPER –II:** shall includes the gross anatomy, systemic histology and systemic '1 embryology of the region Thorax, Abdomen, Pelvix, interior extremity , General histology, General embryology, general anatomy & genetics.
2. **PRACTICAL EXAM. PATTERN:**
   - 2.1. Total Marks for Orals (Viva) — 20 marks
     - 2.1.1. i) Axial Skeleton — 10 marks
     - 2.1.2. ii) Appendicular skeleton — 5 marks
     - 2.1.3. iii)Embryology models — 5 marks
3. **DISTRIBUTION OF PRACTICAL MARKS**
   - 3.1. Soft parts dissected body, organs, viscera, brain Histology — 20 marks
   - 3.2. spotting — 6 marks
   - 3.3.one slide for discussion — 4 marks
   - 3.4.Radiology — 5 marks
   - 3.5.Surface anatomy — 5 marks

Resolution No. 3.1(c): Resolved to shift 'Thorax' portion from Anatomy (1st MBBS) Paper II to Paper I to have proper distribution in two papers for the batch of Students to be admitted in 1st MBBS from the academic year 2016-17 onwards.

(Approved vide BOM – 43/2015, Resolution No. – 3.1(c))

BOM-23/2012, dated 30.03.12, Resolution No 4

Annexure - III

Mahatma Gandhi Mission's Institute of Health Sciences ,
Sector – 18 Kamothe, Navi Mumbai - 410 209

TOPICS FOR HORIZONTAL INTEGRATION IN I-MBBS

(Anatomy , Physiology , Biochemistry)

Sr. no	Month	Name of the Topic	Anatomy	Physiology	Biochemistry
1	1st &2nd week of August	Cell	Cell membrane organelles (1)	Function of cell membrane , cell organelles & transport across cell membrane (3)	Biochemical function carried out by organelles, fluid mosaic model ,transport (2)across cell membrane
2	3rd week of August	Nerve Muscle	Structure of muscle & Structure of Nerve(1)	Types of Muscles ,Molecular Structure of muscle,Classification of Nerve fibres (3)	–
3	3rd week of August	Blood	Overview of circulatory system (1) structure of bone(1)	Blood – composition & functions (1), Hemopoiesis(1)	structure of Hb Physiological functions of Hb Hb derivatives abnormal Hb(3) Plasma proteins(2) Immunochemistry (1)
4	Sept	Respiratory System	Organization of RS. Thoracic cage lungs, Pleura Tracheobronchial tree(2)	Respiratory System Organisation(1) Mech. Respiration(1) Muscle movements (1)	Phospholipids (1)
5	Sept	Cardio vascular system	Mediastinum, pericardium , Heart, Great vessels (2)	Cardio vascular system Organisation(1) Structure & function of Heart & blood vessels (1)	Lipoproteins (1)
6	Nov & Dec	Digestive system	Gross anatomy of GIT with microscopic structure & development -Liver & hepatobiliary apparatus Pancreas(5)	Digestive system(10) Liver& gallbladder bile entrahepatic circulation (2)	General idea of digestion & absorption of carbohydrates , proteins , lipids (1) LFT (1) Hb metabolism (2) Iron Metabolism(1)

7	Jan	Excretory system	Gross anatomy& development, Microanatomy of kidney, ureter bladder, ,urethra(4)	Excretory system(10)	RFT(1) Protein metabolism(7) water & electrolytes(1) Na+, K+ (1)
8	3rd week of Jan	Endocrine system	Demonstration of pituitary gland , thyroid , Pancreas& suprarenal (3)	Endocrine system(8)	Mechanism of Hormone action (1) TFT (1),Ca-P metabolism, (1) trace elements (1)
9	Feb	Reproductive system	Mammary gland Reproductive system- male & female with development, structure(9)	Reproductive system(7)	----
10	Feb – March	Special senses	Eye, Ear, Tongue, vestibular apparatus Nose Olfactory system (4)	Special senses(12)	--
11	March-April	Nervous system	Overview –spinal cord, Brain meninges, Autonomic nervous system(10)	Central Nervous system(20)	---

Prof & HOD
Anatomy

Prof & HOD
Physiology

22/3/12
Prof & HOD
Biochemistry

BOM-38/2014

A-3(B)

MGM/MC/Biochem/2014/581

Date-10/01/2014

To

The Registrar,
MGMIHS, Kamothe,
Navi Mumbai

MGM University of Health Sciences
INWARD NO. 928
DATE: 10-1-14
REF: DIPN

Reference: Acad. 15/2014 dated 01.01.2014 received on 09.01.2014

Subject: Topics for Horizontal and Vertical Integration for 1st MBBS

Dear Sir,

It was decided in the BOS that as of now Vertical Integration is not feasible at the 1st MBBS level, but it can be done at higher level (II & III MBBS) as per current MCI Curriculum. Therefore I am not submitting the topics of Vertical Integrated Teaching.

Following are the topics for Horizontal Integrated Teaching -

Sr. No.	Topics	Anatomy	Physiology	Biochemistry
1.	Diabetes Mellitus	Endocrine part of pancreas	Control of Insulin Secretion & Functions	Lab Diagnosis & GTT
2.	Endemic Goiter	Thyroid Gland	Formation & Regulation of T_3, T_4 & TSH	Iodine Metabolism & Function Tests
3.	Myocardial Infraction	Coronary Arteries	ECG	Cardiac Markers
4.	Fatty Liver	Liver Histology	Functions of liver – Transport of Fat from the liver	Lipotropic Factors
5.	Obstructive Jaundice	Hepato-Biliary Tree	Bile Juice, Entro-hepatic recirculation	Diagnostic Biochemical Markers
6.	Glomerular Filtration	Nephron	Physiology of Glomerular Filtration	Inulin & creatinine clearance test

Dr. A. D. Deepak
Chairperson BOS- Preclinical,
Dept of Biochemistry,
MGM Medical College,
Kamothe, NM

10/1/14

(Approved in BOM 38/2014, dated 28/11/2014, Resolution No. - 3.1)

MGM MEDICAL COLLEGE ,AURANGABAD
HORIZONTAL INTEGRATION 1ST M.B.B.S. TEACHING

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	ANATOMY INTRODUCTION TO ANATOMY	PHYSIOLOGY EXTERNAL ENVIRONMENT LIFE PROCESS	BIOCHEMISTRY BIOCHEMICAL COMPOSITION OF CELL	PHYSIOLOGY HOMEOSTASIS	BIOCHEMISTRY CARBOHYDRATES	ANATOMY CONNECTIVE TISSUE (TISSUES OF BODY)
10 TO 11 A.M.	BIOCHEMISTRY INRODUCTION TO BIOCHEMISTRY	ANATOMY CELL	PHYSIOLOGY INTERNAL ENVIROMNMENT (BODY FLUIDS)	ANATOMY TERMINOLOGY	PHYSIOLOGY CONTROL SYSTEM BIOFEEDBACK	PHYSIOLOGY TRANSPORT ACROSS CELL MEMBRANE I
11 TO 01P.M.	PHYSIOLOGY INTRODUCTION BIOCHEMISTRY INTRODUCTION	PHYSIOLOGY PHYSICAL EXAM. BIOCHEMISTRY INTRODUCTION TO LAB	PHYSIOLOGY PHYSICAL EXAM. BIOCHEMISTRY PRACTICAL LAB	PHYSIOLOGY MICROSCOPE COLLECTION OF BLOOD BIOCHEMISTRY BIODATA WRITING	PHYSIOLOGY MICROSCOPE COLLECTION OF BLOOD BIOCHEMISTRY BIODATA WRITING	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD INTRODUCTION TO SUP. EXT. AND PECTORAL REGION DISSECTION GENERAL INRODUCTION	LECT MAMMARY GLAND DISSECTION GENERAL INRODUCTION	LCD CLAVICLE DISSECTION PECTORAL REGION I	LCD AXILLA DISSECTION PECTORAL REGION II	LECT AXILLARY ARTERY AND AXILLARY NERVE DISSECTION PECTORAL REGION III	LCD SCAPULA DISSECTION AXILLA I

ANNEXURE – 28

Received from Dean, MGM MC, Aurangabad on 15/4/2015 (AC meeting)

BOM-40/2015

MGM MEDICAL COLLEGE ,AURANGABAD
HORIZONTAL INTEGRATION 1ST M.B.B.S. TEACHING

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	ANATOMY BONES AND CARTILAGE	PHYSIOLOGY COMPOSITION AND FUNCTIONS OF BLOOD	BIOCHEMISTRY PROTEIN I	PHYSIOLOGY PLASMA PROTEINS	*HOLIDAY*	ANATOMY HISTOLOGY INTRODUCTION
10 TO 11 A.M.	BIOCHEMISTRY CHEMISTRY OF CARBOHYDRATES II	ANATOMY MUSCLE	PHYSIOLOGY TRANSPORT ACROSS CELL MEMBRANE II	ANATOMY GENERAL CNS	*HOLIDAY*	PHYSIOLOGY ERYTHROCYTES FUNCTIONS
11 TO 01P.M.	PHYSIOLOGY MICROSCOPE COLLECTION OF BLOOD BIOCHEMISTRY TASTE ON MONOSACCHARIDE I	PHYSIOLOGY MICROSCOPE COLLECTION OF BLOOD. BIOCHEMISTRY TASTE ON MONOSACCHARIDE I	PHYSIOLOGY TUTORIAL (GEN. PHSIOLOGY) BIOCHEMISTRY	PHYSIOLOGY STUDY OF NEUBAUER'S CHAMBER AND PCV BIOCHEMISTRY TASTE ON MONOSACCHARIDE I	*HOLIDAY*	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD BACK DISSECTION AXILLA II	LECT BRACHIAL PLEXUS DISSECTION BRACHIAL PLEXUS	LCD SCAPULAR REGION DISSECTION BACK AND SUBSCAPULAR REGION I	LCD HUMERUS DISSECTION BACK AND SUBSCAPULAR REGION II	*HOLIDAY*	LCD FRONT AND BACK OF ARM DISSECTION BACK AND SUBSCAPULAR REGION III

MGM MEDICAL COLLEGE ,AURANGABAD
HORIZONTAL INTEGRATION 1ST M.B.B.S. TEACHING

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	ANATOMY HISTOLOGY OF MUSCLE	PHYSIOLOGY MEMBRANE POTENTIAL RMP	BIOCHEMISTRY CHEMISTRY OF HAEMOGLOBIN I	PHYSIOLOGY ACTION POTENTIAL	BIOCHEMISTRY CHEMISTRY OF HAEMOGLOBIN II	ANATOMY HISTOLOGY OF NERVOUS TISSUE
10 TO 11 A.M.	BIOCHEMISTRY PROTEIN II	ANATOMY JOINT I	PHYSIOLOGY ERYTHROPOIESIS . FACTORS EFFECTING	ANATOMY JOINT II	PHYSIOLOGY HB FUNCTIONS ANAEMIA	PHYSIOLOGY NEURON AND CLASSIFICATION OF NERVES
11 TO 01P.M.	PHYSIOLOGY STUDY OF NEUBAUER'S CHAMBER AND PCV BIOCHEMISTRY TASTE ON MONOSACCHARIDE II	PHYSIOLOGY STUDY OF NEUBAUER'S CHAMBER AND PCV BIOCHEMISTRY TASTE ON TRISACCHARIDE I	PHYSIOLOGY TUTORIAL (GEN. PHYSIOLOGY) BIOCHEMISTRY	PHYSIOLOGY STUDY OF NEUBAUER'S CHAMBER AND PCV BIOCHEMISTRY TASTE ON TRISACCHARIDE I	PHYSIOLOGY R.B.C. COUNT AND ESR BIOCHEMISTRY TASTE ON TRISACCHARIDE II	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD RADIUS DISSECTION HISTO FRONT OF ARM I	LECT DERMATOMES AND VENOUS DRAINAGE DISSECTION HISTO FRONT OF ARM II	LCD FRONT OF FORE ARM (SUPERFICIAL) DISSECTION HISTO BACK OF ARM I	LCD ULNA DISSECTION BACK OF ARM II	LECT CUBITAL FOSSA AND ELBOW JOINT DISSECTION SHOULDER JOINT I	LCD WRIST AND PALM I DISSECTION SHOULDER JOINT II

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9 TO 10 A.M.	ANATOMY GEN. CARDIOVASCULAR SYSTEM	PHYSIOLOGY LEUCOCYTES LEUCOPOIESIS	BIOCHEMISTRY CARBOHYDRATE IV	PHYSIOLOGY FUNCTIONS OF WBC AND MONOCYTE MACROPHAGE	BIOCHEMISTRY PROTEIN III	ANATOMY HISTOLOGY EPITHELIUM
10 TO 11 A.M.	BIOCHEMISTRY CARBOHYDRATE III	ANATOMY GEN. LYMPHATIC SYSTEM	PHYSIOLOGY PROPERTIES OF NERVE	ANATOMY INTEGUMENTARY SYSTEM	PHYSIOLOGY PROPERTIES OF NERVE II	PHYSIOLOGY IMMUNITY
11 TO 01P.M.	PHYSIOLOGY R.B.C. COUNT AND ESR BIOCHEMISTRY TASTE ON TRISACCHARIDE II	PHYSIOLOGY R.B.C. COUNT AND ESR BIOCHEMISTRY TEST ON POLYSACCHRIDE I	PHYSIOLOGY TUTORIAL/ LCD BLOOD AND RBC	PHYSIOLOGY R.B.C. COUNT AND ESR BIOCHEMISTRY TEST ON POLYSACCHRIDE I	PHYSIOLOGY RBC AND HB BIOCHEMISTRY TEST ON POLYSACCHRIDE II	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD WRIST AND PALM II DISSECTION HISTO CUBITAL FOSSA	LECT SHOULDER JOINT DISSECTION HISTO FRONT OF FOREARM I	LCD BONES OF HAND DISSECTION HISTO FRONT OF FOREARM II	LCD BACK OF FOREARM AND HAND DISSECTION PALM I	LECT RADIOULNAR JT. DISSECTION PALM II	LCD ELBOW AND WRIST JT DISSECTION BACK OF FOREARM I

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9 TO 10 A.M.	ANATOMY HISTOLOGY GLANDULAR EPITHELIUM	PHYSIOLOGY NUROMUSCULAR JUNCTION	HOLIDAY	PHYSIOLOGY BLOOD GROUPS	BIOCHEMISTRY PROTEIN V	ANATOMY HISTOLOGY OF BONE AND CARTILAGE
10 TO 11 A.M.	BIOCHEMISTRY PROTEIN IV	ANATOMY GENERAL EMBRYOLOGY I	HOLIDAY	ANATOMY GENERAL EMBRYOLOGY II	PHYSIOLOGY MUSCLE CLASS. AND STRUCTURE	PHYSIOLOGY RH INCOMPATIBILITY BOOD TRANSFUSION
11 TO 01P.M.	PHYSIOLOGY RBS AND HB BIOCHEMISTRY TEST ON POLYSAECHRIDE II	PHYSIOLOGY RBS AND HB BIOCHEMISTRY TUTORIAL ON CARBOHYDRATE	HOLIDAY	PHYSIOLOGY RBS AND HB BIOCHEMISTRY TUTORIAL ON CARBOHYDRATE	PHYSIOLOGY TLC AND BLOOD GR. BIOCHEMISTRY COLOUR REACTION OF PROTEIN I	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD RADIAL NERVE DISSECTION HISTO BACK OF FOREARM II	LECT MEDIAN AND ULNAR NERVE DISSECTION HISTO DISSECTION OF JTS	HOLIDAY	LCD X-RAYS AND LIVING ANAT.	LECT PALMER SPACES AND 1ST METACARPAL JT. DISSECTION HISTO SEMINAR	LCD INTRODUCTION OF THORAX DISSECTION INT. TO THORAX

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9 TO 10 A.M.	ANATOMY HISTOLOGY OF CONNECTIVE TISSUE	PHYSIOLOGY SARCOTUBULAR SYSTEM & EXCITATION	BIOCHEMISTRY LIPID II	PHYSIOLOGY MOLECULAR BASIS OF MUSCLE CONTRACTION	BIOCHEMISTRY LIPID III	ANATOMY HISTOLOGY OF BONE II
10 TO 11 A.M.	BIOCHEMISTRY LIPID I	ANATOMY GENRAL EMBRYOLOGY III	PHYSIOLOGY COAGULATION OF BLOOD	ANATOMY GENERAL EMBRYOLOGY IV	PHYSIOLOGY ANTICOGULATION INTRAVASCULAR CLOT FORMATION	PHYSIOLOGY PROPERTIES OF SKELETAL MUSCLE
11 TO 01P.M.	PHYSIOLOGY TLC AND BLOOD GR. BIOCHEMISTRY COLOUR REACTION OF PROTEIN I	PHYSIOLOGY TLC AND BLOOD GR. BIOCHEMISTRY COLOUR REACTION OF PROTEIN II	PHYSIOLOGY TUTORIAL	PHYSIOLOGY TLC AND BLOOD GR. BIOCHEMISTRY COLOUR REACTION OF PROTEIN II	PHYSIOLOGY DLC & BLOOD INDICES BIOCHEMISTRY PRECIPITATION REACTION OF PROTEIN I	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD INTERCOSTAL SPACE DISSECTION HISTO INTERCOSTAL SPACE I	LECT INTERCOSTAL SPACE DISSECTION HISTO INTERCOSTAL SPACE II	LCD THORACIC VERTEBRAE AND STERNUM DISSECTION HISTO INTERCOSTAL SPACE III	LCD PLEURA DISSECTION PLEURA I	LECT MEDIASTIMUM DISSECTION PLURA II	LCD LUNGS DISSECTION LUNGS I

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9 TO 10 A.M.	ANATOMY HISTOLOGY VASCULAR SYSTEM	PHYSIOLOGY PROPERTIES OF SKELETAL MUSCLE	BIOCHEMISTRY ENZYME I	PHYSIOLOGY INTRODUCTION TO CVS	BIOCHEMISTRY ENZYME II	ANATOMY HISTOLOGY OF RESPIRATORY SYSTEM
10 TO 11 A.M.	BIOCHEMISTRY LIPID IV	ANATOMY GENERAL EMBRYOLOGY V	PHYSIOLOGY SMOOTH MUSCLE	ANATOMY GENERAL EMBRYOLOGY VI	PHYSIOLOGY INTRODUCTION OF RESPIRATORY SYSTEM	PHYSIOLOGY PROPERTIES OF CARDIAC MUSCLE I
11 TO 01P.M.	PHYSIOLOGY DLC & BLOOD INDICES BIOCHEMISTRY PRECIPITATION REACTION OF PROTEIN I	PHYSIOLOGY DLC & BLOOD INDICES BIOCHEMISTRY COLOUR REACTION OF PROTEIN II	PHYSIOLOGY TUTORIAL	PHYSIOLOGY DLC & BLOOD INDICES BIOCHEMISTRY COLOUR REACTION OF PROTEIN II	PHYSIOLOGY DLC AND BTCT BIOCHEMISTRY LCD PH METER	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD PERICARDIUM & EXT. FEATURE OF HEART DISSECTION HISTO ANT. MEDIASTINUM I	LECT MECH. OF RESPIRATOTION AND JT. OF THORAX DISSECTION HISTO ANT. MEDIASTINUM II	LCD RIGHT ATRIUM & RIGHT VENTRICLE, PULMONARY TRUCK DISSECTION HISTO MIDDLE MEDIA. I	LCD LF. ATRIUM & VENTRICAL ASC. AORTA DISSECTION MIDDLE MEDIA. II	LECT BRONCHO PULMONARY SEG. DISSECTION HEART I	LCD SUPERIOR VENA CAVA, TRACHEA VAGI DISSECTION HEART II

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9 TO 10 A.M.	ANATOMY HISTOLOGY LYMPHOID I	PHYSIOLOGY MECHANICS OF RESPIRATION	BIOCHEMISTRY ENZYME IV	PHYSIOLOGY ATMOSPHERIC AIR & DEAD SPACE AIR.	BIOCHEMISTRY VITAMINS I	ANATOMY HISTOLOGY LYMPHOID II
10 TO 11 A.M.	BIOCHEMISTRY ENZYME III	ANATOMY GENERAL EMBRYOLOGY VII	PHYSIOLOGY PROPERTIES OF CARDIAC MUSCLE	ANATOMY GENERAL EMBRYOLOGY VIII	PHYSIOLOGY JUNCTIONAL TISSUES OF HEART	PHYSIOLOGY LUNG VOLUMES AND CAPACITIES
11 TO 01P.M.	PHYSIOLOGY DLC AND BTCT BIOCHEMISTRY LCD PH METER	PHYSIOLOGY DLC AND BTCT BIOCHEMISTRY TUTORIAL ON HAEMATOLOGY	PHYSIOLOGY TUTORIAL	PHYSIOLOGY DLC AND BTCT BIOCHEMISTRY TUTORIAL ON HAEMATOLOGY	PHYSIOLOGY INTRODUCTION TO EXPT. PHYSIOLOGY BIOCHEMISTRY TEST ON BILESALT AND PIGMENT	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD ESOPHAGUS/ DES AORTA/ THORACIC DUCT DISSECTION HISTO HEART III	LECT RIGHT ATRIUM DISSECTION HISTO SUPERIOR MEDIA.	LCD AZYGOS SYSTEM DISSECTION HISTO POST. MEDIA.	LCD X-RAYS AND LIVING	LECT. BLOOD SUPPLY OF HEART. DISSECTION/ SEMINAR	LCD INTRODUCTION AND ANTERIOR COMP. OF THIGH DISSECTION INTRODUCTION

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9 TO 10 A.M.	ANATOMY HISTOLOGY GIT I	PHYSIOLOGY ORIGIN AND SPREAD OF CARDIAC IMPULSE	BIOCHEMISTRY VITAMIN III	HOLIDAY	BIOCHEMISTRY VITAMIN IV	ANATOMY HISTOLOGY GIT II
10 TO 11 A.M.	BIOCHEMISTRY VITAMIN II	ANATOMY GENERAL EMBRYOLOGY IX	PHYSIOLOGY ALVEOLAR VENTILATION	HOLIDAY	PHYSIOLOGY E.C.G.	PHYSIOLOGY TRANSPORT OF OXYGEN
11 TO 01P.M.	PHYSIOLOGY INT. TO EXP. PHYSIOLOGY BIOCHEMISTRY TEST ON BILE SALT AND PIG.	PHYSIOLOGY EFFECT OF GRADED STIMULUS AND SMC & NORMAL ECG BIOCHEMISTRY TEST ON BILE	PHYSIOLOGY TUTORIAL	HOLIDAY	PHYSIOLOGY EFFECT OF GRADED STIMULUS AND SMC & NORMAL ECG BIOCHEMISTRY TEST ON BILE	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD HIP BONE DISSECTION HISTO FRONT OF THIGH	LECT FEMORAL TRINGLE DISSECTION HISTO FEMORAL TRINGLE	LCD ADD. COMPARTMENT OF THIGH DISSECTION HISTO FEMORAL	HOLIDAY	LECT ADDUCTOR CANAL DISSECTION MEDIAL SIDE OF THIGH I	LCD FEMUR AND PATELLA DISSECTION MEDIAL SIDE OF THIGH I

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9 TO 10 A.M.	ANATOMY HISTOLOGY GIT III	PHYSIOLOGY NERVE SUPPLY OF HEART AND HEART RATE	BIOCHEMISTRY VITAMIN VI	HOLIDAY	BIOCHEMISTRY VITAMIN VII	ANATOMY HISTOLOGY GIT IV
10 TO 11 A.M.	BIOCHEMISTRY VITAMIN V	ANATOMY GENERAL EMBRYOLOGY X	PHYSIOLOGY TRANSPORT OF CARBOHYDRATES	HOLIDAY	PHYSIOLOGY CARDIAC CYCLE I	PHYSIOLOGY CARDIAC CYCLE II
11 TO 01P.M.	PHYSIOLOGY EFFECT OF GRADED STIMULUS AND SMC & NORMAL ECG BIOCHEMISTRY TUTORIAL ON PROTEIN	PHYSIOLOGY EFFECT OF GRADED STIMULUS AND SMC & NORMAL ECG BIOCHEMISTRY TUTORIAL ON PROTEIN	PHYSIOLOGY TUTORIAL	HOLIDAY	PHYSIOLOGY EFFECT OF LOAD ON SKELETAL MUSCLE & PROPTERTIES ON CARDIAC MUSCLE BIOCHEMISTRY LCD CALORIMETRY	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD GLUTEAL REGION I DISSECTION HISTO GLUTEAL REGION I	LECT GLUTEAL REGION DISSECTION HISTO GLUTEAL REGION II	LCD GLUTEAL REGION II DISSECTION HISTO GLUTEAL REGION III	HOLIDAY	LCD TIBIA DISSECTION POPLITEAL FOSSA I	LCD POPLITEAL REGION DISSECTION POPLITEAL FOSSA II

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9 TO 10 A.M.	ANATOMY HISTOLOGY GIT V	PHYSIOLOGY NERVOUS REGULATION OF RESPIRATION	BIOCHEMISTRY BIOLOGICAL OXIDATION I	PHYSIOLOGY CARDIAC OUTPUT II	BIOCHEMISTRY BIOLOGICAL OXIDATION II	ANATOMY HISTOLOGY RESPIRATORY SYSTEM
10 TO 11 A.M.	BIOCHEMISTRY VITAMIN VIII	ANATOMY GENERAL EMBRYOLOGY XI	PHYSIOLOGY CARDIAC OUTPUT I	ANATOMY EMBRYOLOGY PHARYNGEAL POUCHES & ARCHES	PHYSIOLOGY CHEMICAL REGULATION OF RESPIRATION	PHYSIOLOGY HAEMADYNAMIC OF CIRCULATION
11 TO 01P.M.	PHYSIOLOGY EFFECT OF LOAD ON SKELETAL MUSCLE & PROPTERTIES ON CARDIAC MUSCLE BIOCHEMISTRY LCD COLORIMETER	PHYSIOLOGY EFFECT OF LOAD ON SKELETAL MUSCLE & PROPTERTIES ON CARDIAC MUSCLE BIOCHEMISTRY ESTIMATION OF BLOOD SUGAR	PHYSIOLOGY TUTORIAL	PHYSIOLOGY EFFECT OF LOAD ON SKELETAL MUSCLE & PROPTERTIES ON CARDIAC MUSCLE BIOCHEMISTRY ESTIMATION OF BLOOD SUGAR	PHYSIOLOGY GENESIS OF TETANUS AND PROPERTIES OF CARDIAC MUSCLE BIOCHEMISTRY ESTIMATION OF BLOOD SUGAR	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD BACK OF THIGH DISSECTION HISTO BACK OF THIGH I	LECT POPLITAL FOSSA DISSECTION HISTO BACK OF THIGH II	LCD HIP JOINT DISSECTION HISTO HIP JOINT I	LCD TARSALS & METATARSALS DISSECTION HIP JOINT II	LECT HIP JOINT DISSECTION FRONT OF LEG & DORSUM OF FOOT I	LCD FRONT OF LEG & DORSUM OF FOOT DISSECTION FRONT OF LEG & DORSUM OF FOOT II

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9 TO 10 A.M.	ANATOMY HISTOLOGY OF URINARY SYSTEM	PHYSIOLOGY HYPOXIA ACCLIMATIZATION AT HIGH ALTTITUDE	BIOCHEMISTRY CARBOHYDRATE METABOLISM I	PHYSIOLOGY ARTERIAL BLOOD PRESSURE	BIOCHEMISTRY CARBOHYDRATE METABOLISM II	ANATOMY SOLE OF FOOT
10 TO 11 A.M.	BIOCHEMISTRY BIOLOGICAL OXIDATION III	ANATOMY EMBRYOLOGY RESPIRATORY SYSTEM	PHYSIOLOGY VENOUS CIRCULATION	ANATOMY EMBRYOLOGY GIT I	PHYSIOLOGY ABNORMALITY OF RESPIRATION	PHYSIOLOGY REGULATION OF BLOOD PRESSURE I
11 TO 01P.M.	PHYSIOLOGY GENESIS OF TETANUS AND PROPERTIES OF CARDIAC MUSCLE II BIOCHEMISTRY ESTIMATION OF BLOOD SUGAR	PHYSIOLOGY GENESIS OF TETANUS AND PROPERTIES OF CARDIAC MUSCLE II BIOCHEMISTRY TUTORIAL ON LIPID CHEMISTRY	PHYSIOLOGY TUTORIAL	PHYSIOLOGY GENESIS OF TETANUS AND PROPERTIES OF CARDIAC MUSCLE II BIOCHEMISTRY TUTORIAL ON LIPID CHEMISTRY	PHYSIOLOGY BIOCHEMISTRY REVISION PRACTICLE	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD FIBULA AND LAT. COMP. OF LEG DISSECTION HISTO LAT. SIDE OF LEG I	LECT CUTANEOUS NERVES & VENOUS DRAINAGE & LYMPH DISSECTION HISTO LAT. SIDE OF LEG II	LCD BACK OF LEG DISSECTION HISTO MEDIAL SIDE OF LEG	LCD SOLE I DISSECTION BACK OF LEG I	LECT KNEE JOINT DISSECTION BACK OF LEG II	LCD SOLE II AND JT. OF FOOT DISSECTION SOLE I

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9 TO 10 A.M.	ANATOMY HISTOLOGY SKIN, SCALP & NAIL	PHYSIOLOGY PULMONARY FUNCTION TEST	BIOCHEMISTRY CARBOHYDRATE METABOLISM IV	PHYSIOLOGY CAPILLARY CIRCULATION	BIOCHEMISTRY CARBOHYDRATE METABOLISM V	ANATOMY INGUANAL CANAL
10 TO 11 A.M.	BIOCHEMISTRY CARBOHYDRATE METABOLISM III	ANATOMY EMBRYOLOGY GIT II	PHYSIOLOGY REGULATION OF BLOOD PRESSURE II	ANATOMY EMBRYOLOGY GIT III	PHYSIOLOGY LYMPH	PHYSIOLOGY EDEMA FORMATION
11 TO 01P.M.	PHYSIOLOGY REVISION BIOCHEMISTRY REVISION	PHYSIOLOGY FATIGUE, VAGAL ESCAPE BIOCHEMISTRY ESTIMATION OF TOTAL PROTEIN	PHYSIOLOGY TUTORIAL	PHYSIOLOGY FATIGUE, VAGAL ESCAPE BIOCHEMISTRY ESTIMATION OF TOTAL PROTEIN	PHYSIOLOGY FATIGUE, VAGAL ESCAPE BIOCHEMISTRY ESTIMATION OF TOTAL PROTEIN	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD TIBIOFEBULAR & ANKLE JT DISSECTION HISTO SOLE II	LECT ARCHES OF FOOT, MECH OF WALKING DISSECTION HISTO SOLE III	LCD X-RAYS AND LIVING OF INF. EXT.	LCD INTRODUCTION TO ABDOMEN DISSECTION HISTO INTRODUCTION	LCD ANTERIOR ABD. I DISSECTION ANTERIOR ABD. I	LCD ANTERIOR ABD II DISSECTION ANTERIOR ABD. II

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9 TO 10 A.M.	ANATOMY HISTOLOGY MALE GENITAL SYS. I	PHYSIOLOGY INTRODUCTION TO EXCRETORY SYSTEM	BIOCHEMISTRY CARBOHYDRATE METABOLISM VII	PHYSIOLOGY RENAL CIRCULATION & AUTOREGULATION OF RENAL BLOOD FLOW	BIOCHEMISTRY CARBOHYDRATE METABOLISM VIII	ANATOMY LECT STOMACH
10 TO 11 A.M.	BIOCHEMISTRY CARBOHYDRATE METABOLISM VI	ANATOMY EMBRYOLOGY GIT IV	PHYSIOLOGY PULMONARY CIRCULATION	ANATOMY EMBRYOLOGY GIT V	PHYSIOLOGY CORONARY CIRCULATION	PHYSIOLOGY GFR
11 TO 01P.M.	PHYSIOLOGY FATIGUE, VAGAL ESCAPE BIOCHEMISTRY ESTIMATION OF TOTAL PROTEIN	PHYSIOLOGY INTRODUCTION TO CLINICAL EXAM. EFFECTS OF DRUGS ON HEART BIOCHEMISTRY SEMINAR ON VITAMIN	PHYSIOLOGY TUTORIAL	PHYSIOLOGY INTRODUCTION TO CLINICAL EXAM. EFFECTS OF DRUGS ON HEART BIOCHEMISTRY SEMINAR ON VITAMIN	PHYSIOLOGY INTRODUCTION TO CLINICAL EXAM. EFFECTS OF DRUGS ON HEART BIOCHEMISTRY SEMINAR ON VITAMIN	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD MALE EXT. GENITAL ORGAN DISSECTION HISTO MALE GENITAL ORGAN	LECT TESTIES DISSECTION HISTO TESTIES	LCD PERITONEUM I DISSECTION HISTO PERITONEAL CAVITY I	LCD PERITONEUM II DISSECTION PERITONEAL CAVITY I	LECT PERITONEUM DISSECTION GRATER AND LESSER OMENTUM	LCD STOMACH & COELIAC TRUNK DISSECTION STOMACH & COELIAC TRUNK

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9 TO 10 A.M.	ANATOMY MALE GENITAL ORGAN II	PHYSIOLOGY CEREBRAL AND HEPATIC CIRCULATION	BIOCHEMISTRY PROTEIN METABOLISM II	PHYSIOLOGY CARDIO RESPIRATORY CHANGES DURING EXCERCISE	BIOCHEMISTRY PROTIEN META. III	ANATOMY LECT PANCREAS
10 TO 11 A.M.	BIOCHEMISTRY PROTEIN META. I	ANATOMY EMBRYOLOGY GIT VI	PHYSIOLOGY TUBULAR FUNCTION	ANATOMY EMBRYOLOGY GIT VII	PHYSIOLOGY MECHANISM OF CONCENTRATION OF URINE	PHYSIOLOGY CIRCULATORY SHOCK I
11 TO 01P.M.	PHYSIOLOGY INTRODUCTION TO CLINICAL EXAM. EFFECTS OF DRUGS ON HEART BIOCHEMISTRY SEMINAR ON VITAMIN	PHYSIOLOGY ARTERIAL PULSE AND EFFECT OF IONS ON HEART BIOCHEMISTRY ESTIMATION OF BLOOD UREA	PHYSIOLOGY TUTORIAL	PHYSIOLOGY ARTERIAL PULSE AND EFFECT OF IONS ON HEART BIOCHEMISTRY ESTIMATION OF BLOOD UREA	PHYSIOLOGY ARTERIAL PULSE AND EFFECT OF IONS ON HEART BIOCHEMISTRY ESTIMATION OF BLOOD UREA	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD DUODENUM DISSECTION HISTO DUODENUM	LECT DUODENUM DISSECTION HISTO MESENTRY	LCD SMALL INTESTINE & SUP. MESENTRIC ARTERY DISSECTION HISTO SMALL INTESTINE	LCD LARGE INTESTINE AND INF. MESENTRIC ARTERY DISSECTION COECUM & APPENDIX	LECT COECUM & APPENDIX DISSECTION LARGE INTESTINE	LCD PANCREASE DISSECTION PANCREASE

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9 TO 10 A.M.	ANATOMY HISTOLOGY FEMALE GENTIAL TRACT I	PHYSIOLOGY RENAL HANDLING OF WATER & ELECTROLYTES	BIOCHEMISTRY PROTEIN META. V	PHYSIOLOGY ACIDIFICATION OF URINE	BIOCHEMISTRY PROTEIN META. VI	ANATOMY LECT. KIDNEY
10 TO 11 A.M.	BIOCHEMISTRY PROTEIN META. IV	ANATOMY EMBRYOLOGY URINARY SYST. I	PHYSIOLOGY CIRCUALTORY SHOCK II	ANATOMY EMBRYOLOGY URINARY SYST. II	PHYSIOLOGY MITURATION Mituration	PHYSIOLOGY RENAL FUNCTION TESTS.
11 TO 01P.M.	PHYSIOLOGY ARTERIAL PULSE AND EFFECT OF IONS ON HEART BIOCHEMISTRY ESTIMATION OF BLOOD UREA	PHYSIOLOGY RECORDING OF BLOOD PRESSURE & STETHOGRAPHY BIOCHEMISTRY LCD ON CHROMATOGRAPHY	PHYSIOLOGY TUTORIAL	PHYSIOLOGY RECORDING OF BLOOD PRESSURE & STETHOGRAPHY BIOCHEMISTRY LCD ON CHROMATOGRAPHY	PHYSIOLOGY RECORDING OF BLOOD PRESSURE & STETHOGRAPHY BIOCHEMISTRY ESTIMATION OF SERUM BILIRUBIN	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD LIVER DISSECTION HISTO LIVER	LECT EXTRA HEPATIC BILLIARY APP. DISSECTION HISTO GALL BLADDER	LCD SPLEEN DISSECTION HISTO SPLEEN	LCD KIDNEY DISSECTION KIDNEY, URETER, SUPRARENAL	LECT AUTONOMIC NERVOUS SYSTEM DISSECTION KIDNEY, URETER, SUPRARENAL	LCD SUPRARENAL AND URETERS DISSECTION POST. WALL

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9 TO 10 A.M.	ANATOMY HISTOLOGY FEMALE REPRODUCTIVE SYSTEM II	PHYSIOLOGY BODY TEMP. REGULATION I	BIOCHEMISTRY PROTEIN META VIII	PHYSIOLOGY BODY TEMP. REGULATION III	BIOCHEMISTRY ACID BASE BALANCE I	ANATOMY LECT URINARY BLADDER
10 TO 11 A.M.	BIOCHEMISTRY PROTEIN META VII	ANATOMY EMBRYOLOGY URINARY SYSTEM III	PHYSIOLOGY BODY TEMP. REGULATION II	ANATOMY EMBRYOLOGY URINARY SYSTEM IV	PHYSIOLOGY INTRODUCTION TO ENDOCRINOLOGY	PHYSIOLOGY INTRODUCTION TO GIT
11 TO 01P.M.	PHYSIOLOGY RECORDING OF BLOOD PRESSURE & STETHOGRAPHY BIOCHEMISTRY ESTIMATION OF SERUM BILIRUBIN	PHYSIOLOGY BLOOD PRESSURE II & CLINICAL EXAMINATION OF CVS BIOCHEMISTRY ESTIMATION OF SERUM BILIRUBIN	PHYSIOLOGY TUTORIAL	PHYSIOLOGY BLOOD PRESSURE II & CLINICAL EXAMINATION OF CVS BIOCHEMISTRY ESTIMATION OF SERUM BILIRUBIN	PHYSIOLOGY BLOOD PRESSURE II & CLINICAL EXAMINATION OF CVS BIOCHEMISTRY TUTORIAL ON ENZYMES	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD PERINEUM & ANAL TRINGLE DISSECTION HISTO PERINEUM & ANAL TRINGLE	LECT ISCHIORECTAL FOSSA DISSECTION HISTO ISCHIORECTAL FOSSA I	LCD BONY PELVIS DISSECTION HISTO ISCHIORECTAL FOSSA II	LCD UROGENITAL TRINGLE DISSECTION UROGENITAL TRINGLE I	LECT PERINEAL POUCHES DISSECTION UROGENITAL TRINGLE II	LCD URINARY BLADDER DISSECTION URINARY BLADDER

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TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	ANATOMY HISTOLOGY OF ENDOCRINES I	PHYSIOLOGY ANTERIOR PITUTARY	BIOCHEMISTRY LIPID META I	PHYSIOLOGY PITUTARY II	BIOCHEMISTRY LIPID META II	ANATOMY LECT PROSTATE & PELVIC DIA.
10 TO 11 A.M.	BIOCHEMISTRY ACID BASE BALANCE II	ANATOMY EMBRYOLOGY MALE GENITAL I	PHYSIOLOGY SALIVARY SECRETION	ANATOMY EMBRYOLOGY MALE GENITAL II	PHYSIOLOGY DEGLUTATION	PHYSIOLOGY THYROID I
11 TO 01P.M.	PHYSIOLOGY BLOOD PRESSURE II & CLINICAL EXAMINATION OF CVS BIOCHEMISTRY TUTORIAL ON ENZYMES	PHYSIOLOGY ECG & CLINICAL EXAMINATION OF RS BIOCHEMISTRY ESTIMATION OF ALK. PHOSPHATASE	PHYSIOLOGY TUTORIAL	PHYSIOLOGY ECG & CLINICAL EXAMINATION OF RS BIOCHEMISTRY ESTIMATION OF ALK. PHOSPHATASE	PHYSIOLOGY ECG & CLINICAL EXAMINATION OF RS BIOCHEMISTRY ESTIMATION OF ALK. PHOSPHATASE	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD UTERUS DISSECTION HISTO UTERUS	LECT UTERUS DISSECTION HISTO OVARY AND F. TUBE	LCD OVARY AND F. TUBE DISSECTION HISTO OVARY AND F. TUBE	LCD RECTUM & ANAL CANAL DISSECTION RECTUM & ANAL CANAL I	LECT RECTUM & ANAL CANAL DISSECTION RECTUM & ANAL CANAL II	LCD PROSTATE DISSECTION PROSTATE

MGM MEDICAL COLLEGE ,AURANGABAD
HORIZONTAL INTEGRATION 1ST M.B.B.S. TEACHING

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	ANATOMY HISTOLOGY OF ENDOCRINES II	PHYSIOLOGY GASTRIC SECRETIONS I	BIOCHEMISTRY LIPID META IV	HOLIDAY	BIOCHEMISTRY LIPID META V	ANATOMY LECT (INTEGRATED) CORSS SECTIONAL ANAT.
10 TO 11 A.M.	BIOCHEMISTRY LIPID MRTA III	ANATOMY EMBRYOLOGY FEMALE REPRODUCTIVE I	PHYSIOLOGY THYROID II	HOLIDAY	PHYSIOLOGY GASTRIC SECRETIONS II	PHYSIOLOGY PANCREATIC SECRETION
11 TO 01P.M.	PHYSIOLOGY ECG & CLINICAL EXAMINATION OF RS BIOCHEMISTRY ESTIMATION OF ALK. PHOSPHATASE	PHYSIOLOGY ARTIFICIAL RESPIRATION & SPIROMETRY BIOCHEMISTRY TEST ON CARBOHYDRATE METABOLITES	PHYSIOLOGY TUTORIAL	HOLIDAY	PHYSIOLOGY ARTIFICIAL RESPIRATION & SPIROMETRY BIOCHEMISTRY TEST ON CARBOHYDRATE METABOLITES	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD DIA. AND MUSCLES OF POST. ABD. WALL DISSECTION HISTO DIAPHRAGM	LECT NERVES, VESSLES & LYMPH OF POST ABD. WALL DISSECTION HISTO POST. ABD WALL & PELVIS	LCD X-RAYS & LIVING HISTOLOGY PRACT.	HOLIDAY	REVISION	REVISION

MGM MEDICAL COLLEGE ,AURANGABAD
HORIZONTAL INTEGRATION 1ST M.B.B.S. TEACHING

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	ANATOMY SEMINAR	PHYSIOLOGY GASTRIC MOTILITY	BIOCHEMISTRY LIPID META VII	PHYSIOLOGY ADERNAL GLAND I	BIOCHEMISTRY MECHANISM OF HORMONE ACTION	ANATOMY EMBRYOLOGY HEART II
10 TO 11 A.M.	BIOCHEMISTRY	ANATOMY EMBRYOLOGY FEMALE REPRODUCTIVE II	PHYSIOLOGY PARATHYROID	ANATOMY EMBRYOLOGY HEART I	PHYSIOLOGY ADERNAL GLAND II	PHYSIOLOGY
11 TO 01P.M.	PHYSIOLOGY ARTIFICIAL RESPIRATION & SPIROMETRY BIOCHEMISTRY ESTIMATION OF SGOT & SGPT	PHYSIOLOGY ARTIFICIAL RESPIRATION & SPIROMETRY BIOCHEMISTRY ESTIMATION OF SGOT & SGPT	PHYSIOLOGY TUTORIAL	PHYSIOLOGY CARDIAC EFFIENCY BIOCHEMISTRY ESTIMATION OF SGOT & SGPT	PHYSIOLOGY CARDIAC EFFIENCY BIOCHEMISTRY ESTIMATION OF SGOT & SGPT	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	REVISION	REVISION	REVISION	REVISION	REVISION	REVISION

MGM MEDICAL COLLEGE ,AURANGABAD
HORIZONTAL INTEGRATION 1ST M.B.B.S. TEACHING
FIRST TERM EXAMINATION

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	THEORY ANATOMY	THEORY PHYSIOLOGY	THEORY BIOCHEMISTRY	TERMINAL PRACTICLE	TERMINAL PRACTICLE	TERMINAL PRACTICLE
10 TO 11 A.M.						
11 TO 01P.M.						
01 TO 02 P.M.						
02 TO 05 P.M.						

MGM MEDICAL COLLEGE ,AURANGABAD
HORIZONTAL INTEGRATION 1ST M.B.B.S. TEACHING

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 TO 10 A.M.	ANATOMY INTRODUCTION TO ANATOMY	PHYSIOLOGY	BIOCHEMISTRY	PHYSIOLOGY	BIOCHEMISTRY	ANATOMY
10 TO 11 A.M.	BIOCHEMISTRY	ANATOMY	PHYSIOLOGY	ANATOMY	PHYSIOLOGY	PHYSIOLOGY
11 TO 01P.M.	PHYSIOLOGY BIOCHEMISTRY	PHYSIOLOGY BIOCHEMISTRY	PHYSIOLOGY BIOCHEMISTRY	PHYSIOLOGY BIOCHEMISTRY	PHYSIOLOGY BIOCHEMISTRY	P.S.M.
01 TO 02 P.M.	LUNCH					
02 TO 05 P.M.	LCD DISSECTION	LCD DISSECTION	LCD DISSECTION	LCD DISSECTION	LCD DISSECTION	LCD DISSECTION

Approved As per BOM 40/2015, Dated 13/05/2015
Resolution No. - 3.1 (e)

Resolution No. 3.1(e): Resolved to redistribute the marks in Anatomy MBBS practical Viva as below:

Distribution of Viva Marks:-

	Previous	Proposed
1.Axial Skeleton	7	5
2.Appendicular Skeleton	6	8
3.Embryology	7	5
4. Genetics	0	2

Approved As per BOM 45/2016, Dated 28/04/2016
Resolution No. - 3.1 (b)

Resolution No. 3.1(b): Resolved to accept revised method to calculate internal assessment marks for Ist MBBS as given below from the academic year 2016 -17 onwards:

For Theory:

	Anatomy	Physiology	Biochemistry
1st Sem. & Prelim Exam.	15	15	15
Day to day assessment as per MCI norms	05	05	05
Total marks	20	20	20

For Practical:

	Anatomy	Physiology	Biochemistry
1st Sem. & Prelim Exam.	15	15	15
Day to day assessment as per MCI norms	05	05	05
Total marks	20	20	20

Approved in BOM-43/2015, dated 06/11/2015
Resolution No.-3.1(b)

Resolution No. 3.1(b): Resolved to include Early Clinical Exposure in the curriculum of First MBBS by way of video clipping, animations, visit to Wards wherever necessary **(Annexure-II)**) for the batch of Students to be admitted in 1st MBBS from the academic year 2016-17 onwards.

1. Introduction of early clinical exposure
   - For example –
     - Introduction to imaging techniques and correlation with anatomical structure in normal person.
     - Upper limb – Erb'spalsy,Klumke's paralysis,claw hand, wrist drop,
     - Lower limb – varicose veins, Trendelenburg's test for gluteus medius, Knee arthroscopy and replacement, foot drop
     - Thorax – pleural effusion, procedure of pleural or pericardial tap, diaphragmatic hernia, X-ray chest with introduction of terms such as CT scan, HRCT, Bronchoscopy. Introduction of echocardiography and valvular movements; Angiography.
     - Abdomen – renal calculi, Meckel's diverticulum, cholecystitis, Introduction to endoscopy of stomach and large intestine and duodenum, Peancreatic and gallstone removal with endoscopy.
     - Pelvis – interior of bladder by cystoscopy, ectopic pregnancy, haemorrhoids, Introduction of pelvic laprosopy.
     - Head, face, neck – facial palsy, parotitis, black eye in scalp injury
     - Neuro-anatomy – Huntington's chorea, hydrocephaly, procedure of lumbar puncture, Introduction of MRI and MRI angiography and tensor imaging.

DEPARTMENT OF PHYSIOLOGY
MGM MEDICAL COLLEGE, KAMOTHE, NAVI MUMBAI

MGM/MED-C/PHY/2016/626 Date: 28.12.2016

To
The Registrar
MGM IHS,
Navi Mumbai

Subject: First MBBS Syllabus for Human Physiology, Human Anatomy & Human Biochemistry subjects.

Sir,

Please find herewith the First MBBS Syllabus for Human Physiology, Human Anatomy & Human Biochemistry syllabus, as submitted by HODs after due discussion sent by email registrar@mgmuhs.com & dyr@mgmuhs.com.

This is for your kind information and necessary action.

Thanking you,

Yours sincerely,

Academic Council
28.12.16

Dr. R. S. Inamdar
Chairman
Pre Clinical BOS
Professor & Head
Department of Physiology
MGM Medical College,
Kamothe, Navi Mumbai

MGM Institute Of Health Sciences
INWARD NO. 10699
DATE: 28/12/16
REF:

SYLLABUS
FOR
ANATOMY

INDEX

BROAD CURRICULUM AS PER MCI GUIDELINES (HUMAN ANATOMY)

(a) Goal

The broad goal of the teaching of undergraduate students in Anatomy aims at providing comprehensive knowledge of the gross and microscopic structure and development of human body to provide a basis for understanding the clinical correlation of organs or structures involved and the anatomical basis for the disease presentations.

(b) **Objectives** :

A. **Knowledge** :

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

(a) Comprehend the normal disposition, clinically relevant interrelationships, functional and cross sectional anatomy of the various structures in the body.

(b) Identify the microscopic structure and correlate elementary ultra-structure of various organs and tissues and correlate the structure with the functions as a prerequisite for understanding the altered state in various disease processes.

(c) Comprehend the basic structure and connections of the central nervous system to analyze the integrative and regulative functions and systems. He / She should be able to locate the site of gross lesions according to the deficits encountered.

(d) Demonstrate knowledge of the 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. He/She should be able to explain the developmental basis of the major variations and abnormalities.

B. **Skills**:

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

(a) Identify and locate all the structures of the body and mark the topography of the living anatomy.

(b) Identify the organs and tissues under the microscope.

(c) Understand the principles of karyotyping and identify the gross congenital anomalies.

(d) Understand principles of newer imaging techniques and interpretation of Computerized Tomography (CT) Scan, Sonogram etc.

(e) Understand clinical basis of some common clinical procedures i.e., intramuscular & intravenous injection, lumbar puncture and kidney biopsy etc.

C. **Integration**

From the integrated teaching of other basic sciences, student should be able to comprehend the regulation and integration of the functions of the organs and systems in the body and thus interpret the anatomical basis of disease process.

I-MBBS ANATOMY SYLLABUS

I General Anatomy

Must know

1. Introduction to Anatomy

2. Terminology

3. Introduction of imaging techniques.

4. Bone –Classification, Sesamoid bone, Parts of a growing long bone blood supply of long bone. Parts of long bone, epiphysis and its types, ossification and its classification, Laws of ossification.

5. Joints – Classification
   Fibrous joints, cartilaginous joints, Synovial joints – Classification & details

6. Skin and fascia
   Structure and Functions of Skin
   Superficial fascia, deep fascia, modifications of deep fascia

7. Muscle
   Classification – Structural (in detail during histology lect.), functional and morphological
   Origin, Insertion, Tendon, ligaments, Bursae.

8. Circulatory System
   Types of circulation and its importance, classification of vessels (anatomical and physiological), Factors affecting venous return, Structure of blood vessels, anastomosis, end arteries.

9. Lymphatic System
   Lymphatic circulation, circulating lymphocytes, lymphoid tissue

10. Nervous System
    Classification – Central Nervous System, Peripheral nervous system (PNS) and autonomic nervous system (ANS)
    PNS – Cranial Nerves, Spinal Nerves, Typical Spinal Nerve, Myelination & Dermatomes
    Classification of neurons, Nerve fibres & Glial cells

Desirable to know

Close packed and loose packed joints, range of movements, spin, swing, levers,Langer's lines, Flexure creases, atherosclerosis.

Nice to know

Bursitis Kinesiology, Dermatoglyphics, Skin graft

II Upper limb

Must know

1. Regions - Pectoral region, Mammary gland, Scapular region & back, axilla, front of arm, back of arm, Cubital fossa, Front of forearm, palm, Back of forearm Anatomical snuff box.

2. Bones - Clavicle, Scapula, Humerus, Radius, Ulna, Articulated hand, Supracondylar fracture, Colles fracture

3. Muscle Attachments, Nerve Supply, actions of important muscles of all regions especially-deltoid, pectoralis major, serratus anterior, Trapezius, lattissimus dorsi, biceps, triceps, brachioradialis, pronator teres, Intrinsic muscles of hand

4. Nerves - Brachial plexus, Radial Nerve, Median nerve, Ulnar nerve, Axillary nerve, Musculocutaneous nerve.

5. Vessels – Axillary artery, Subscapular anastomosis, brachial artery, radial and ulnar arteries, superficial and deep palmar arches, Veins of upper limb.

6. Joints – shoulder girdle, elbow joint, wrist joint, Superior and inferior radioulnar joints, 1st carpometacarpal joint.

7. Applied – Erb's palsy, Klumpke's paralysis, Winging of scapula, Tennis elbow, Wrist drop, claw hand, Dupuytren's contracture, carpal tunnel syndrome.

Desirable to know

Deep Muscles of Back, Palmar spaces and its clinical importance, fracture neck Humerus, Dermatomes of upper limb.

Nice to know

Grips of hand

III Lower limb

Must know

1. Regions: - Front of thigh, femoral triangle, femoral sheath, adductor canal, Gluteal region, back of thigh, popliteal fossa, leg compartments, sole.

2. Bones-Hip bone, Femur, Tibia, Fibula, Patella, articulated foot, Special mention about talus and calcaneum.

3. Muscles – Attachments, nerve supply and actions of important muscles of all regions especially - quadriceps femoris, gluteus maximus, Gluteus medius and minimus. Adductor group, hamstring group, Muscles of leg specially soleus and names of muscular layers of sole.

4. Nerves – Femoral nerve, Obturator nerve, Sciatic nerve, Tibial and common peroneal nerve, foot

5. Vessels – Femoral artery, popliteal artery, vessels of leg and sole and venous drainage of lower limb.

6. Joints – Hip joint, knee joint, ankle joint, subtalar joint, arches of foot, Trendelenburg sign, dislocation of hip joint.

Desirable to know

Femoral hernia, cruciate and trochanteric anastomosis, blood supply of head of femur, Meniscal tear, cruciate ligament tear, varicose veins, Dermatomes of lower limb.

Nice to know

Fracture neck of femur, Trendelenberg's test, Walking Cycle.

IV Head, Face & Neck

Must know

1. Bones skull – Normas-verticalis, occipitalis, Frontalis, lateralis, basalis, interior of skull, Mandible, Cervical vertebrae, fetal skull Scalp

2. Face – Muscles, Blood supply and nerve supply.

3. Neck – Triangles of neck – Boundaries and contents, Midline structure of neck, Deep cervical fascia

4. Muscles – Sternocleidomastoid, hyoglossus, Mylohyoid, Strap muscles, lateral pterygoid

5. Meninges - Layers, dural folds, Dural venous sinuses.

6. Cranial Nerves – Over view of cranial nerves with its functional components, Occulomotor nerve with abducent and trochlear, Trigeminal, facial nerve, glossopharyngeal nerve, vagus nerve, accessory Nerve and Hypoglossal nerve

7. Blood vessels – Common carotid artery and External carotid artery, subclavian artery, Internal and external jugular veins

8. Glands – Parotid, thyroid, submandibular and sublingual glands, Pituitary.

9. Infratemporal fossa - Muscles of mastication, Mandibular nerve, Maxillary artery, Parasymphathetic ganglia of HNF: Otic, Submandibular, Pteriogopalatine and ciliary ganglion, Pterygoid Venous plexus, Temporo Mandibular joint

10. Organs – Tongue, Palate, pharynx, Tonsil, larynx, Nasal cavity, Para nasal sinuses, orbit – muscles, nerves and vessels, Ear – Middle ear, tympanic membrane

Desirable to know

Dislocation of temporomandibular joint. Thyroidectomy. Subclavian steal syndrome, posterior triangle cold abscess, Nerve palsies of vocal cord, Internal ear, external ear.

Nice to know

Carcinoma tongue, tympanoplasty, tracheostomy

V Neuroanatomy

Must know

1. Spinal cord – External features, internal features, spinal meninges, ascending and descending tracts, lumbar puncture, Blood supply of spinal cord and its clinical anatomy, syringomychia, Brown Sequard Syndrome, poliomyelitis,Vertebral venous plexus,

2. Medulla oblongata- External and internal features, Blood Supply, sections at sensory, pyramidal and olivary levels with correlation of nuclei and functional aspect, vascular lesions and syndromes.

3. Pons-External and internal features and sections with nuclei and functional aspect, vascular lesions and syndromes.

4. Mid brain-External and internal features sections with lesions and syndromes.

5. Cerebellum-Classification – anatomical and functional.
   Peduncles – Superior, middle and inferior cerebellar peduncles, deep cerebellar nuclei, connections, functions of cerebellum, Blood supply and vascular lesions.

6. Overall view of ventricular system and its communication, CSF circulation, cisterns,

7. 4th Ventricle - Boundaries, floor, roof.

8. Cerebrum-Surfaces and borders, lobes, sulci and gyri, functional areas, Blood supply, White matter – Classification, corpus callosum, internal capsule –parts, blood supply & applied anatomy, Grey matter – Basal ganglia and its connections

9. Lateral ventricle - Boundaries, floor, roof

10. Diencephalon-Parts of diencephalon, Thalamus, hypothalamus - Gross connections, major nuclei.

11. 3rd ventricle Boundaries, floor, roof and recesses

12. Blood Supply of Brain, Blood brain barrier, Circle of Willis

13. Autonomic nervous system.

14. Limbic system.

Desirable to know

Metathalamus, Subthalamus, epithalamus, split brain syndrome, Lesions of Basal ganglia, Hydrocephalus V-A Shunt. Queckenstedt's sign, Nerve supply of dura, cerebral haemorrhage, cisternal puncture, Arnold Chiari syndrome, Epidural spaces, Pontine haemorrhage, pontine tumors, Reticular formation.

Nice to know

Spinal cord - Cervical, thoracic lumbar, sacral level transverse sections, Ventriculography, tractotomy.

V Thorax

Must Know

1. Bones – Ribs, sternum, Thoracic vertebrae
2. Joints of Thorax
3. Thoracic cage – Inlet, outlet, intercostal spaces with its blood supply and nerve supply with its clinical importance, mechanism of respiration.
4. Mediastinum – Divisions of mediastinum and boundaries and contents
5. Pleura, lung, Bronchopulmonary segments, Pleuritis, pleural effusion.
6. Pericardium and heart, Pericardial effusion, myocardial infarction
7. Oesophagus
8. Diaphragm – development, Nerve supply, openings, Diaphragmatic hernia.
9. Vessels of thorax: Aorta, azygous venous system, superior vena cava and its tributaries, thoracic duct

Desirable to know –

Intercostal drainage, Mediastinal syndrome.

Nice to know

Thymus

V Abdomen and pelvis

Must know

1. Bones – Pelvis: Types of pelvis, dimensions of pelvis and pelvimetry and difference between male and female, lumbar vertebrae, sacrum
2. Anterior abdominal wall – Muscles, nerves, blood supply, Rectus sheath and inguinal canal, Abdominal incisions – hernia – inguinal and incisional.
3. Spermatic cord, Testis, scrotum, prostate, prostatectomy, male urethra.
4. Peritoneum – Greater sac, lesser sac, Epiploic foramen, Greater omentum lesser omentum, Vertical and horizontal disposition and mesentery, pouch of Douglas
5. Organs-Stomach, Peptic ulcer,
   Duodenum Small and large intestine, Appendix, colonoscopy, appendicitis,
   Liver, extrahepatic biliary apparatus portal vein, Porto caval anastomosis,
   Rectum and anal canal, proctoscopy.

Pancreas, spleen, carcinoma pancreas, pancreatitis, splenomegaly,
kidney, suprarenal glands, ureter, urinary bladder – neurological bladder,
hydronephrosis ureteric stones, cystoscopy.
Uterus, fallopian tubes, ovary, Tubectomy, ovarian cyst, cervical carcinoma,

6. Posterior abdominal wall: muscles, nerves, psoas abscess.

7. Abdominal aorta and inferior vena cava.

8. Pelvis, Pelvic diaphragm, Pelvic vessels and nerves.

9. Perineal pouches, ischiorectal fossa,

Desirable to know

Abdominal incisions,Vasectomy, varicocele, hydrocele, ascites and abdominal tapping, Hepatic Segments, cholecystitis, liver biopsy.

Nice to know

Subphrenic spaces, Gastroscopy,

VII Histology

Must know

A. General histology-

1. Microsopy and Types of microscopes and lab techniques for H & E staining
2. Cell: Organelles and cytoskeleton.

3. Epithelia & glands – classification, cell surface modification, cell junctions.

4. Connective tissue classification, cells and matrix and its clinical importance.

5. Cartilage classification and structure.

6. Bone classification, structure and cells, developing bone, growth of bone, hypertrophy, hyperplasia.

7. Muscle-Classification, Skeletal muscle, cardiac muscle and smooth muscle structure

8. Nervous tissue – Peripheral nerve, sensory ganglia, autonomic ganglia.

9. Blood vessels- endothelium-structure and functions, classification of blood vessels, Elastic artery, muscular artery, capillaries and vein structure

10. Lymphoid tissue-Thymus, blood thymic barrier, spleen, open & closed circulation, lymph node, MALT-tonsil

11. Skin - Thick skin, thin skin, hair follicle and appendages.

B. Systemic histology

1. GIT-
   Lip, tongue, salivary glands-Submandibular parotid and sublingual glands
   Oesophagus, Stomach-fundus, pylorus, small Intestine – Duodenum, Jejunum, ileum,
   Large intestine, appendix, Accessory glands- Liver, pancreas, gall bladder

2. Respiratory system -Epiglottis, Trachea, lung

3. Urinary system-Kidney, ureter, urinary bladder

4. Male reproductive system-Testis, Epididymis. Vas deferens, prostate

5. Female reproductive system-Ovary, Fallopian tube, uterus, mammary gland and placenta.

6. Endocrine system-Pituitary gland, Hyprothalamo pituitary portal system, Thyroid and parathyroid glands, suprarenal gland

7. Nervous system- Cerebrum and Cerebellum

8. Eye – Retina, Cornea

Desirable to know

Umbilical cord, Spinal cord, Internal ear, Diabetes mellitus,

Nice to know

Hyaline membrane disease, Pheochromocytoma, Electron microscopy

VIII Embryology

Must know

A. General Embryology

1. Cell division – mitosis & meiosis.

2. Gametogenesis- spermatogenesis Oogenesis, follicular development and fertilization.

3. 1st week of development – Zygote, cleavage, morula, blastocyst, implantation

4. 2nd week of development -Bilaminar embryonic disc, embryoblast, trophoblast, amniotic cavity, yolk sac, chorion.

5. 3rd week of development - Gastrulation,Trilaminar embryonic disc, primitive streak, notochord, development of neural tube, Neural crest cells, vasculogenesis.

6. 4th week of development - Folding of embryo – craniocaudal and lateral, foetal membrane – chorion, amnion, allantois umbilical cord.

7. Derivatives of 3 germ layers. Ectoderm, endoderm, mesoderm

8. Placenta

B. Systemic Embryology

1. GIT – Foregut, midgut, hindgut; Derivatives of each and Rotation of stomach and midgut, Pancreas, liver, Developmental anomalies of GIT, tracheo esophageal fistula.

2. Urogenital - Kidney, ureter, UB, Uterus, FT, ovary & testis, external genitalia and developmental anomalies

3. Cardiovascular system - Development of heart, folding of heart tube, development of 4 chambers and Interatrial and interventricular septum and ASD and VSDs and Fallot's tertralogy, aortic arches, Development anomalies of aortic arches, foetal circulation

4. Respiratory system - Development of lungs

5. Head, face & neck - Development of face, Pharyngeal arches and pouches.

6. Nervous system - Development of functional components, neural crest cells. Neural tube folding formation of brain vesicles, neural tube defects.

Desirable to know

Twining. Teratology, Development – IVC & portal vein, artificial reproductive techniques

Nice to know

Development of skeletal system & limbs, fetoscopy

IX Genetics

Must know

1. Introduction
2. Mendel's Laws Chromosome-classification
3. Karyotyping
4. Barr body, Lyon's hypothesis
5. Chromosomal abnormalities, syndromes
6. Inheritance
7. Genetic Counseling
8. Prenatal Diagnosis.

Desirable to know

Developmental genetics, Hemoglobin disorders, thalassemia and sickle cell anaemia, cancer genetics, Pedigree chart, Human Genome project.

Nice to know

Gene therapy, genetic engineering, population genetics.

X Radiological Anatomy

Must know

1. Overview of various imaging techniques and role in diagnosis of human diseases
2. Principle of plain radiograms and CT scan, Ultrasonography, MRI
3. Plain Xray – Concept of AP and Lateral view
4. Limbs – shoulder, elbow, wrist joints & hand, hip, knee, ankle joints and foot, AP and lateral
5. Head, face & neck - Skull and Paranasal sinuses, Water's view, cervical vertebrae and lumbar vertebrae lateral view.
6. Thorax – Plain X-ray of thorax PA and lateral views
7. Abdomen – plain AP and lateral, contrast - Barium swallow, meal, enema & follow through, Cholecystography, pylography, cystogram, hysterosalpingography
8. CT scan. Plain and contrast, MRI

Desirable to know

Concept of Estimation of age with x-rays, Color Doppler, Carotid angiogram.

Nice to know

Myelography bronchogram, Abdominal aortogram. Ultrasonography in developing fetus, PET scan and Nuclear Medicine

XI Living anatomy

Must know

1. For upper limb, Lower limb, Thorax, Abdomen, Pelvis & Head, Face, Neck -
   Bony prominences with relevant vertebral levels.
   Joint movements - for example, Shoulder joint, Pronation and supination, movements of thumb, movements at fingers, hip joint, knee joint, ankle and subtalar joint.
   Movements of neck, trunk
   Muscle testing - Tendon reflex with root values.
2. Nerve palpation – ulnar Nerve, common peroneal Nerve
3. Important Landmarks and clinical importance - for example - Anatomical snuff box
4. Peripheral arterial pulsations – for example - brachial, radial, femoral, posterior tibial, dorsalis pedis artery
5. Knowledge of certain procedures like lumbar puncture, pericardial tapping, liver biopsy, Locating veins for venesection, site for emergency tracheostomy.

XII Introduction of early clinical exposure

For example –

1. Upper limb – Erb'spalsy, Klumke's paralysis, claw hand, wrist drop

2. Lower limb – Varicose veins, Trendelenburg's test for gluteus medius, Knee arthroscopy and replacement, foot drop, Flat foot, Femoral hernia.

3. Thorax – pleural effusion, procedure of pleural or pericardial tap, diaphragmatic hernia, X-ray chest with introduction of terms such as CT scan, HRCT, Bronchoscopy. Introduction of echocardiography and valvular movements, Angiography.

4. Abdomen – renal calculi, Meekel's diverticulum, cholecystitis, Introduction to endoscopy of stomach and large intestine and duodenum, Peancreatic and gallstone removal with endoscopy

5. Pelvis – interior of bladder by cystoscopy, ectopic pregnancy, haemorrhoids, Introduction of pelvic laproscopy.

6. Head, face, neck – facial palsy, Parotitis, black eye I scalp injury

7. Neuro-anatomy – Huntington's chorea, Hydrocephaly, Procedure of lumbar puncture. Introduction of MRI and MRI angiography and tensor imaging

SYLLABUS

ANATOMY

TEACHING HOUR

DISTRIBUTION

ANATOMY TEACHING HOURS

Theory	**223**
Practical	**474**
Total	**697**

SYLLABUS & TEACHING HOURS DISTRIBUTION
(1ST Year MBBS-Theory)

Sr. No.	Topic	Theory Hours
1.	General Anatomy	11
2.	Upper Limb	18
3.	Lower Limb	13
4.	HFN	38
5.	Neuro Anatomy	21
6.	Thorax	14
7.	Abdomen & Pelvis	25
8.	Histology	26
9.	Embryology	31
10.	Genetics	6
11.	Seminars	20
	Total	**223**

Sr. No.	Topic	Lecture	LD	Theory Hours
1.	General Anatomy	10	1	11
2.	Upper Limb	13	5	18
3.	Lower Limb	11	2	13
4.	HFN	26	12	38
5.	Neuro Anatomy	18	3	21
6.	Thorax	11	3	14
7.	Abdomen & Pelvis	21	4	25
8.	Histology	26		26
9.	Embryology	31		31
10.	Genetics	6		6
11.	Seminars		20	20
	Total	**172**	**50**	**223**

Sr. No.	Region	Topic	Lect.	LD
1	**General Anatomy**	Introduction to Anatomy	1	
		Terminology	1	
		Bone	1	1
		Joints	1	
		Skin & fascia	1	
		Muscle	1	
		Circulatory System	1	
		Nervous System	1	
		Lymphatic System	1	
		Imaging Techniques	1	
		Total	10	1

Sr. No.	Region	Topic	Lect.	LD
2	**Upper Limb**	Mammary Gland	1	
		Pectoral Region		1
		Pectoral Girdle	1	
		Brachial Plexus	1	
		Back	1	
		Axilla		1
		Intermuscular Spaces & Axillary Nerve	1	
		Shoulder Joint	1	
		Abduction at Shoulder Joint		1
		Venous Drainage of Upper Limb		1
		Compartments of arm and cubital fossa	1	
		Elbow Joint	1	
		Radio-Ulnar Joint	1	
		Anatomical Snuff Box		1
		Muscles & Nerves of Palm	1	
		Palmar Arches		1
		Palmar Spaces	1	
		Median & Ulnar Nerve	1	
		Radial Nerve	1	
		Total	13	6

Sr. No.	Region	Topic	Lect.	LD
3	**Lower Limb**	Venous drainage of lower limb	1	
		Femoral triangle	1	
		Adductor canal & obturator nerve	1	
		Gluteal Region	1	
		Back of Thigh & Sciatic Nerve		1
		Hip joint	1	
		Popliteal fossa	1	
		Knee joint	1	
		Movements of Knee Joints		1
		Compartments of Leg	1	
		Ankle joint	1	
		Subtalar joint	1	
		Arches of foot	1	
		Total	11	2

Sr. No.	Region	Topic	Lect.	LD
4	**Head, Face & Neck**	Scalp	1	
		Face-Muscles, Nerve supply	1	
		Face-Blood supply		1
		Triangles of neck & posterior triangle	1	
		Anterior triangle		1
		Carotid triangle	1	
		Thyroid gland	1	
		Subclavian artery		1
		Cervical sympathetic chain		1
		Functional components of Cranial Nerves	1	
		Cranial Nerve XI in neck		1
		Parotid gland	1	
		Extra cranial VII Nerve	1	
		Infra temporal region & mandibular nerve	1	
		Infra temporal fossa		1
		T M Joint	1	
		Muscles of mastification		1
		Submandibular region & gland	1	
		Hypoglossal nerve	1	
		Styloid apparatus & glossopharyngeal Nerve	1	
		Meninges & dural venous sinuses		1
		Cavernous Sinus	1	
		Pituitary gland	1	
		Peripheral Parasympathetic Ganglia	1	
		Orbit		1
		Extra ocular muscles of eye	1	
		Ophthalmic & maxillary div. of V Cranial Nerve	1	
		Cranial Nerve III & ciliary ganglion	1	
		Cranial Nerve IV & VI	1	
		Joints in Cervical Region		1
		Pharynx	1	
		Palate	1	
		Tongue	1	
		Lateral wall of nose & nasal septum		1
		Paranasal sinuses	1	
		Larynx	1	
		Larynx- Interior		1
		Middle ear	1	
		Total	26	12

Sr. No.	Region	Topic	Lect.	LD
5	**Neuro Anatomy**	Introduction to CNS	1	
		Spinal cord I (Nuclei & tracts)	1	
		Spinal cord External features		1
		Spinal cord II (Blood supply & applied)	1	
		Blood supply of brain	1	
		Medulla I	1	
		Medulla II	1	
		Pons	1	
		Mid brain	1	
		Cerebellum	1	
		IV Ventricle	1	
		Gyri, sulci & functional areas of brain	1	
		White matter of cerebrum & corpus callosum	1	
		Basal ganglia	1	
		Thalamus	1	
		Hypothalamus		1
		Internal capsule	1	
		Lateral ventricle	1	
		III Ventricle	1	
		CSF Circulation		1
		Limbic system	1	
		Total	18	3

Sr. No.	Region	Topic	Lect.	LD
6	**Thorax**	Thoracic cavity	1	
		Intercostal space	1	
		Typical Intercostal Nerve		1
		Pleura	1	
		Broncho pulmonary segments	1	
		Lungs		1
		Mediastinum divisions & Superior Med.	1	
		Pericardium	1	
		Interior of right atrium	1	
		Blood supply of heart	1	
		Respiratory Movements		1
		Thoracic duct	1	
		Esophagus	1	
		Azygous system	1	
		Total	11	3

Sr. No.	Region	Topic	Lect.	LD
7	**Abdomen & Pelvis**	Ant. Abd. Wall	1	
		Rectus sheath		1
		Inguinal canal	1	
		Spermatic cord	1	
		Testis		1
		Peritoneum	1	1
		Lesser sac	1	
		Stomach	1	
		Duodenum	1	
		Portal vein	1	
		Extra hepatic biliary system	1	
		Kidney	1	
		Ureter	1	
		Diaphragm	1	
		Urinary bladder	1	
		Prostate	1	
		Rectum	1	
		Uterus	1	
		Anal canal	1	
		Fallopian tube & ovary	1	
		Perineal pouches	1	
		Ischio rectal fossa	1	
		Pelvic diaphragm	1	
		Internal Iliac Artery		1
		Total	21	4

Sr. No.	Region	Topic	Lect.	LD
8	**Histology (General +Systemic)**	**General**		
		Cells & organelles	1	
		Epithelium	1	
		Connective Tissue	1	
		Cartilage	1	
		Bones	1	
		Muscle	1	
		Nervous System	1	
		Blood vessels	1	
		Lymphoid System	2	
		Skin	1	
		Revision General Histology	1	
		Systemic		
		Tongue & Salivary gland	1	
		Oesophagus & stomach	1	
		Small & Large intestines & appendix	1	
		Accessory organs of digestive system	1	
		Respiratory System	1	
		Urinary system	1	
		Male reproductive system	1	
		Female reproductive system	2	
		Endocrines	1	
		Nervous system	1	
		Eye- retina & cornea	1	
		Revision Systemic Histology	2	
		Total	26	

Sr. No.	Region	Topic	Lect.	LD
9	**Embryology (General +Systemic)**	**General**		
		Cell Division	1	
		Gametogenesis	1	
		Ovarian & Menstrual Cycle	1	
		Fertilization & 1st Wk of Development	1	
		2nd Wk of Development	2	
		3rd wk of Development	2	
		4th wk of Development	1	
		Folding of embryo	1	
		Placenta	2	
		Revision General Embryology	1	
		Systemic		
		GIT	4	
		Respiratory system	1	
		Cardiovascular system	3	
		Urinary system	1	
		Male Reproductive System	2	
		Female Reproductive System	2	
		HFN	3	
		Nervous system	1	
		Revision Systemic Embryology	1	
		Total	31	

Sr. No.	Region	Topic	Lect.	LD
10	**Genetics**	Karyotyping	1	
		Chromosomal abnormalities	1	
		syndromes	1	
		Inheritance	1	
		Genetic Counseling	1	
		Prenatal Diagnosis	1	
		Total	6	

SYLLABUS & TEACHING HOURS DISTRIBUTION
(1ST Year MBBS-Practical)

Sr. No.	Topic	Practical Hours
12.	General Anatomy	2
13.	Upper Limb	41
14.	Lower Limb	38
15.	HFN	69
16.	Neuro Anatomy	21
17.	Thorax	35
18.	Abdomen & Pelvis	75
19.	Histology	52
20.	Embryology	29
21.	Genetics	2
22.	Mid Term Exams	30
23.	Terminal & Prelim Exams	80
	Total	**474**

Sr. No.	Topic	Diss. Hours	Demo Hours	Tut. Hours	Pract. Hours	Exam Hours	Total Practical Hours
1.	General Anatomy		1	1			**2**
2.	Upper Limb	32	7	2			**41**
3.	Lower Limb	28	8	2			**38**
4.	HFN	49	16	4			**69**
5.	Neuro Anatomy	9	10	2			**21**
6.	Thorax	24	10	1			**35**
7.	Abdomen & Pelvis	56	14	5			**75**
8.	Histology				52		**52**
9.	Embryology				29		**29**
10.	Genetics				2		**2**
11.	Mid Term Exams					30	**30**
12.	Terminal & Prelim Exams					80	**80**
	Total	**198**	**66**	**17**	**83**	**110**	**474**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
1	**General Anatomy**	Bones		1	
		Joints			1
		Total		**1**	**1**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
2	**Upper Limb**	Pectoral region	4		1
		Axilla	4		
		Scapular region	4		
		Back	4		
		Arm i. Back	2		
		ii. Front	2		
		Cubital fossa	2		1
		Fore arm i. Front	4		
		ii. Back	2		
		Palm	4		
		Clavicle		1	
		Scapula		1	
		Humerus		1	
		Radius		1	
		Ulna		1	
		Articulated hand		1	
		Radiology & Living Anatomy		1	
		Total	**32**	**7**	**2**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
3	**Lower Limb**	Front of thigh	4		
		Medial compartment	2		
		Gluteal region	6		1
		Back of thigh	2		
		Popliteal fossa	4		1
		Leg - posterior	4		
		Leg – anterior and lateral	2		
		Sole	4		
		Hip bone		2	
		Femur		2	
		Tibia		1	
		Fibula/ Patella		1	
		Articulated foot		1	
		Radiology & Living Anatomy		1	
		Total	**28**	**8**	**2**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
4	**Head, Face & Neck**	Scalp & Face	6		
		Posterior triangle	4		1
		Anterior triangle	6		
		Deep dissection of neck	4		1
		Parotid region	4		
		Temporal & Infra temporal region	6		
		Submandibular region	4		1
		Removal of brain	4		
		Orbit	4		
		Pharynx, palate, tongue & nose	3	4	
		Larynx	4	1	
		Normas Skull		5	1
		Cranial fossa Skull		2	
		Mandible		1	
		Cervical Vertebra		1	
		Foetal skull		1	
		Radiology & Living Anatomy		1	
		Total	**49**	**16**	**4**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
5	**Neuro Anatomy**	Spinal cord	1	1	
		Brain Stem	1	1	1
		Cerebellum		2	
		Cerebrum	3	4	1
		Sections	4	2	
		Total	**9**	**10**	**2**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
6	**Thorax**	Thoracic cavity & Intercostal space	8		
		Lungs	4	1	
		Heart	6	2	1
		Posterior mediastinum	6	1	
		Sternum		1	
		Rib		2	
		Thoracic Vertebra		2	
		Radiology & Living Anatomy		1	
		Total	**24**	**10**	**1**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
7	**Abdomen & Pelvis**	Anterior Abdominal wall Rectus sheath	4		
		Inguinal canal	2		
		Testis and spermatic cord	4		
		Peritoneum	4		
		Liver	2	1	1
		Stomach	2	1	
		Small & Large intestines	2	1	1
		Pancreas	2	1	
		Spleen	2	1	
		Kidney	4	1	1
		Supra renal	2		
		Posterior abdominal wall	6		
		Diaphragm	2		
		Uterus	4	1	1
		Urinary bladder	4	1	
		Perineum	4		
		Male Pelvis	3	1	
		Female Pelvis	3	1	
		Pelvis		1	1
		Lumber vertebra		1	
		Sacrum		1	
		Radiology & Living Anatomy		1	
		Total	**56**	**14**	**5**

Sr. No.	Region	Topic	Practical
8	**Histology (General +Systemic)**	**General**	
		Microscope	2
		Cells & organelles	2
		Epithelium	2
		Connective Tissue	2
		Cartilage	2
		Bones	2
		Muscle	2
		Nervous System	2
		Blood vessels	2
		Lymphoid System	4
		Skin	2
		Revision	2
		Systemic	
		Tongue & Salivary gland	2
		Oesophagus & stomach	2
		Small & Large intestines & appendix	2
		Accessory organs of digestive system	2
		Respiratory System	2
		Urinary system	2
		Male reproductive system	2
		Female reproductive system	4
		Endocrines	2
		Nervous system	2
		Eye- retina & cornea	2
		Revision	2
		Total	**52**

Sr. No.	Region	Topic	Practical
9	Embryology (General +Systemic)	**General**	
		Gametogenesis	1
		Ovarian & Menstrual Cycle	1
		Fertilization & 1st Wk of Development	1
		2nd Wk of Development	2
		3rd wk of Development	2
		4th wk of Development	1
		Folding of embryo	1
		Placenta	2
		Revision	2
		Systemic	
		GIT	4
		Respiratory system	1
		Cardiovascular system	3
		Urinary system	1
		Male Reproductive System	1
		Female Reproductive System	1
		HFN	3
		Revision	2
		Total	**29**

Sr. No.	Region	Topic	Practical
10	Genetics	Karyotyping	1
		Chromosomal abnormalities	1
		Total	**2**

Books for Anatomy

	Sections	Title	Authors	Edition
A	**General Anatomy**			
	1	Handbook of General Anatomy	B.D.Chaurasia	5th edition
	2	General Anatomy	Vishram Singh	2nd edition
B	**Gross Anatomy**			
	1	Textbook of Anatomy Vol –I,II,III	Vishram Singh	2nd edition
	2	Human Anatomy Vol –I,II,III	B.D.Chaurasia	7th edition
C	**Dissector**			
	1	Thieme dissector Vol –I,II,III	Vishram Singh	1st edition
D	**Histology**			
	1	Histology text and atlas	Brijesh kumar	1st edition
	2	Textbook of histology	Krishna Garg	5th edition
	For reference 3	Atlas of histology	di Fiore's	12th edition
	For reference 4	Functional histology	Wheaters	5th edition
E	**Embryology**			
	1	Human Embryology	B.D.Chaurasia	2nd edition
	2	Clinical Embryology	Vishram Singh	2012 reprint
	For reference 3	Medical Embryology	Langman's	11th edition
F	**Neuroanatomy**			
	1	Textbook of clinical Neuroanatomy	Vishram Singh	2nd edition
G	**Genetics**			
	1	Medical Genetics	G P Pal	2st edition
	2	Human Genetics	S D Gangane	4th edition

Reference Books

Sr. No.	Anatomy	Author	Edition
1.	Gray's Anatomy		41st
2.	Clinical Anatomy by Regions	R. Snell	9th
3.	Last's Anatomy (Regional and Applied)	Slnnatamby	12th
4.	Functional Histology (A Text and Atlas)	Wheater's	6th
5.	Basic Histology Text and Atlas	Junqueira	13th
6.	The Developing Human	Keith Moore	9th
7.	Functional Neuroanatomy (Text and Atlas)	Afifi	2nd
8.	Medical Genetics	Jorde	4th
9.	Genetics in Medicine	Thompson & Thompson	8th

EXAMINATION PATTERN

Internal Exams (Terminal + Preliminary)

THEORY -

	Terminal	Preliminary		University	
Total Marks	60	50	50	50	50
Durations	2.30 hrs.	2.30 hrs.	2.30 hrs.	2.30 hrs.	2.30 hrs.
Paper	**Only one paper**	**Paper I**	**Paper II**	**Paper I**	**Paper II**
Section A	MCQ – Sec-A 20 X 0.5 = 10 Marks	MCQ - Sec-A 20 X 0.5 = 10 Marks	MCQ - Sec-A 20 X 0.5 = 10 Marks	MCQ - Sec-A 20 X 0.5 = 10 Marks	MCQ - Sec-A 20 X 0.5 = 10 Marks
Section B	SAQ - Sec-B 6 out of 7 6 X 5 = 30 Marks	SAQ - Sec-B 4 out of 5 4 X 5= 20 Marks	SAQ - Sec-B 4 out of 5 4 X 5= 20 Marks	SAQ - Sec-B 4 out of 5 4 X 5= 20 Marks	SAQ - Sec-B 4 out of 5 4 X 5= 20 Marks
Section C	LAQ – Sec-C 2 out of 3 10 X 2 = 20 Marks	LAQ – Sec-C 2 out of 3 10 X 2 = 20 Marks	LAQ – Sec-C 2 out of 3 10 X 2 = 20 Marks	LAQ – Sec-C 2 out of 3 10 X 2 = 20 Marks	LAQ – Sec-C 2 out of 3 10 X 2 = 20 Marks

PRACTICAL EXAMINATION (TERMINAL)

	Histology Spots (6 x 1 = 6 Marks)	Slide Discussion (1 X 4 = 4 Marks)	Soft Part	Radio	Living Anatomy	Viva*			Total
						Ax Sk	Ap Sk	& Emb	
Marks	6	4	20	5	5	7	8	5	60

PRACTICAL EXAMINATION (PRELIMINARY & UNIVERSITY)

	Soft part above diaphragm	Soft part below diaphragm	Radio-logy	Living anatomy	Histology spots 8 X 0.5 = 4 Marks	Histology Slide Discussion 2 X 3 = 6 Marks	Viva *				Total
							Ax Sk	Ap Sk	Emb	Gene-tics	
Marks	10	10	5	5	4	6	5	8	5	2	60

Note:* 20 practical viva marks to be added along with this.

Internal Assessment of Anatomy

	Theory	Practical
Terminal & Prelim exams	15	15
Day to day assessment as per MCI	05	05
Total	**20**	**20**

Date -_____

Model University Examination Question Paper

I M.B.S.S. Anatomy Examination

Paper I

Section :- A

Q. 1. Multiple Choice Questions (20 X 0. 5= 10 Marks)

1. What type of joint is interphalangeal joint ?
   a) Ellipsoid b) Hinge
   c) Pivot d) Saddle

2. Which one of the following is the action of Brachialis on Elbow joint ?
   a) Flexion b) Adduction
   c) Medial Rotation d) Abduction

3. Which one of the following nerves supplies radial lumbricals ?
   a. Ulnar b) Median
   c. Radial d) Posterior interosseous

4. Which one of the following nerves is injured in case of winging of scapula ?
   a. Lower subscapular nerve b) Long thoracic nerve
   c. Dorsal Scapular nerve d) Upper subscapular nerve

5. Which one of the following muscle is a medial rotator and adductor of arm ?
   a) Subscapularis b) Teres minor
   c) Supraspinatus d) Infraspinatus

6. Which one of the following muscle is the tensor of the vocal cord ?
   a) Cricoarytenoids b) Cricothyroid
   c) Thyroarytenoids d) Transverse arytenoids

7. Which one of the following sinuses does not open in middle meatus ?
   a) Middle ethmoidal b) Anterior ethmoidal
   c) Posterior ethmoidal d) Maxillary

8. Which one of the following venous sinuses is an unpaired sinus ?
   a) Sigmoid sinus b) Transverse sinus
   c) Cavernous sinus d) Occipital sinus

9. Which one of the following muscles causes depression of eyeball ?
   1. Lateral Rectus b) Transverse sinus
   c) Inferior Oblique d) Superior Oblique

10. Which one of the following is the root value of Ulnar nerve ?
    a. C7, C8, T1 b. C8, T1
    c. C5, C6, C7 d. C5, C6

11. Which one of the following pouch contributes to form tonsil ?
    a. 2^{nd} b. 3^{rd}
    c. 1^{st} d. 4^{th}

12. Medical Medullary syndrome is seen because of injury to which artery ?
    a. Posterior spinal artery d. Anterior spinal artery
    c. Basilar artery d. PICA

13. Anterior inferior cerebellar artery is a branch of which artery ?
    a. Superior cerebellar d. Vertebral
    c. Operculated d. Limiting

14. What type of sulcus is central sulcus ?
    a. Axial b. Complete
    c. Operculated d. Limiting

15. Which muscle causes opening of mouth ?
    a. Medical Pterygoid b. Temporalis
    c. Lateral Pterygoid d. Masseter

16. Which one of the following is motor speech are ?
    a. area 3,1 b. area 44, 45
    c. area 37 c. area 42

17. Which one of the following structure give rise to cornea ?
    a. Surface ectoderm b. neuro ectoderm
    c. Neural crest cells d. notochord

18. What is the epithelium of tongue ?
    a. Non keratinized stratified squamous b. keratinized stratified squamous
    c. Simple squamous d. Simple columnar

19. Which one of the following type of neuron is seen in dorsal root ganglion ?
    a. Pseudounipolar b. Unipolar
    c. Biopolar d. Multipolar

20. Membrana tectoria is a continuation of which one of the following structures ?
    a. Posterior atlanto-occipital membrane b. Posterior longitudinal ligament
    c. Anterior longitudinal ligament d. Anterior atlanto-occipital membrane

Date -_____

Model University Examination Question Paper
I M.B.S.S. Anatomy Examination
Paper I

SECTION A

MCQ (10 Marks)

SECTION B

Q. 1 Short answering question (4 out of 5) – (4 X 5 = 20 Marks)

1. Muscles of mastication
2. Pectoris major muscle
3. Microscopic structure of cornea
4. Primary motor area
5. Nerve supply of tongue with embryological basis

SECTION C

Q. 1 Long answering question (2 out of 3) - (2 X 10 = 20 Marks)

1. Describe Brachial Plexus under following headings
   a. Formation (4 Marks)
   b. Branches (3 Marks)
   c. Applied aspect (3 Marks)

2. Describe Cerebellum under following headings.
   a. Gross Anatomy (2 Marks)
   b. Blood supply (3 Marks)
   c. Connections and structures passing through it (4 Marks)
   d. Applied (1 Mark)

3. Describe Parotid Gland under following headings
   a. Gross Anatomy (3 Marks)
   b. Relations (3 Marks)
   c. Microscopic structure (2 Marks)
   d. Applied aspect (2 Marks)

Date-_____

Model University Examination Question Paper

I M.B.S.S. Anatomy Examination

Paper II

Section :- A

MCQs (20 X 0. 5= 10 Marks)

1. Which one is not the content of the middle mediastinum ?
   a. Heart with pericardium
   b. Pulmonary arteries
   c. Lower half of superior vena cava
   d. Bifurcation of trachea

2. Which one of the following ribs articulates with one vertebra only ?
   a. 1^{st}
   b. 2^{nd}
   c. 3^{rd}
   d. 4^{th}

3. Inguinal ligament is a thickening of which structure ?
   a. Aponeurosis of external oblique
   b. Aponeurosis of internal oblique
   c. Deep fascial of thigh
   d. Superficial fascia of thing

4. Which muscle is not supplied by obturator nerve ?
   a. Pectineus
   b. Adductor longus
   c. Adductor brevis
   d. Semimembranosus

5. Dorsalis pedis artery is a continuation of which artery ?
   a. Popliteal artery
   b. Anterior tibial artery
   c. Malleolar artery
   d. Posterior tibial artery

6. Inversion is caused by which muscle ?
   a. Tibialis anterior
   b. Peroneus longus
   c. Extensor digitorum longus
   d. Flexor digitorum

7. Which is not the content of recus sheath ?
   a. Rectus abdominis muscle
   b. Superior epigastric artery
   c. Ilioinguinal nerve
   d. Inferior epigastric vein

8. Which is the unpaired branch of aorta ?
   a. Inferior phrenic artery
   b. Renal artery
   c. Middle suprarenal artery
   d. Coeliac trunk

9. Which structure is not crossed by pelvic part of the ureter ?
   a. External iliac vessels
   b. Psoas major muscle
   c. Middle suprarenal artery
   d. Obturator artery

10. Left ovarian vein opens in which vein ?
    a. External iliac vein
    b. Internal iliac vein
    c. Left renal vein
    d. Inferior vena cava

11. Which part of the bone is ossified from primary centre ?
    a. Epiphysis
    b. Diaphysis

c. Metaphysis
d. Epiphyseal cartilage

12. Which is multipennate muscle ?
    a. Interossei
    b. Reotus femoris
    c. Deltoid
    d. Tibialis anterior

13. Presence of an arteiod in lymphoid tissue is seen in which tissue ?
    a. Spleen
    b. Lymph node
    c. Thymus
    d. Tonsil

14. Chromosome number 3 is which type of chromosome ?
    a. Metacentric
    b. Submetacentric
    c. Acrocentric
    d. Acrocentric with satellite

15. Smooth part of the right atrium is derives from which part ?
    a. Right horn of sinus venosus
    b. Primitive atrial chamber
    c. Left horn of sinus venosus
    d. Bulbus cordis

16. What is the remnant of urachus ?
    a. Medican umbilical ligament
    b. Medial umbilical ligament
    c. Lateral umbilical ligament
    d. Medical fold

17. Aorta is an example of which artery ?
    a. Small muscular artery
    b. End artery
    c. Large elastic artery
    d. none of the above

18. Pancreases is derived from which gut ?
    a. Forgut
    b. Midgut
    c. Hindgut
    d. Mesogastrium

19. What is the epithelium of appendix ?
    a. Simple cuboidal
    b. Simple columnar
    c. Stratified columnar
    d. Simple Sqamous

20. Submucosa is the absent in which structure ?
    a. Esophagus
    d. Ilieum
    c. Large intestine
    d. Gall bladder

Date -_____

Model University Examination Question Paper
I M.B.S.S. Anatomy Examination
Paper II

SECTION A

MCQ (20 X 0.5 = 10 Marks)

SECTION B

Q. 1 Short answering question (4 out of 5) – (4 X 5 =20 Marks)

1. Supports of Uterus
2. Microscopic structure of Bone
3. Development of Pancreas
4. Down Syndrome
5. Oogenesis

SECTION C

Q. 1 Long answering question (2 out of 3) - (2 X 10 = 20 Marks)

1. Describe Knee Joit under following headings
   a. Type and bones articulating (2 Marks)
   b. Ligaments (3 Marks)
   c. Movements and muscles causing movement (4 Marks)
   d. Applied aspects (1 Mark)

2. Describe second part of Duodenum under following headings.
   a. Gross Anatomy (2 Marks)
   b. Blood supply (2 Marks)
   c. Relations (2 Marks)
   d. Microscopic structure (2 Marks)
   e. Applied aspects (1 Mark)

3. Describe Respiratory movements in detail with applied aspect

TOPICS FOR HORIZONTAL INTEGRATION IN I-MBBS

(Anatomy, Physiology, Biochemistry)

Sr. No.	Month	Name of the Topic	Anatomy	Physiology	Biochemistry
1.		Thyroid disorders			
2.		Coronary artery disease			
3.		Stroke			
4.		Renal stones			
5.		Diabetes			
6.		Pneumonia			
7.		Ulcerative colitis			
8.		Benign prostatic hypertrophy			
9.		Atonic bladder			
10.		Endometriosis			

ANATOMY TEACHING HOURS

Theory	**222**
Practical	**474**
Total	**696**

SYLLABUS & TEACHING HOURS DISTRIBUTION
(1ST Year MBBS-Theory)

Sr. No.	Topic	Theory Hours
24.	General Anatomy	11
25.	Upper Limb	18
26.	Lower Limb	13
27.	HFN	38
28.	Neuro Anatomy	20
29.	Thorax	14
30.	Abdomen & Pelvis	25
31.	Histology	26
32.	Embryology	31
33.	Genetics	6
34.	Seminars	20
	Total	**222**

Sr. No.	Topic	Lecture	LD	Theory Hours
12.	General Anatomy	10	1	11
13.	Upper Limb	13	5	18
14.	Lower Limb	11	2	13
15.	HFN	26	12	38
16.	Neuro Anatomy	17	3	20
17.	Thorax	11	3	14
18.	Abdomen & Pelvis	21	4	25
19.	Histology	26		26
20.	Embryology	31		31
21.	Genetics	6		6
22.	Seminars		20	20
	Total	**172**	**50**	**222**

Sr. No.	Region	Topic	Lect.	LD
1	**General Anatomy**	Introduction to Anatomy	1	
		Terminology	1	
		Bone	1	1
		Joints	1	
		Skin & fascia	1	
		Muscle	1	
		Circulatory System	1	
		Nervous System	1	
		Lymphatic System	1	
		Imaging Techniques	1	
		Total	10	1

Sr. No.	Region	Topic	Lect.	LD
2	**Upper Limb**	Mammary Gland	1	
		Pectoral Region		1
		Pectoral Girdle	1	
		Brachial Plexus	1	
		Back	1	
		Axilla		1
		Intermuscular Spaces & Axillary Nerve	1	
		Shoulder Joint	1	
		Abduction at Shoulder Joint		1
		Venous Drainage of Upper Limb		1
		Compartments of arm and cubital fossa	1	
		Elbow Joint	1	
		Radio-Ulnar Joint	1	
		Anatomical Snuff Box		1
		Muscles & Nerves of Palm	1	
		Palmar Arches		1
		Palmar Spaces	1	
		Median & Ulnar Nerve	1	
		Radial Nerve	1	
		Total	13	6

Sr. No.	Region	Topic	Lect.	LD
3	**Lower Limb**	Venous drainage of lower limb	1	
		Femoral triangle	1	
		Adductor canal & obturator nerve	1	
		Gluteal Region	1	
		Back of Thigh & Sciatic Nerve		1
		Hip joint	1	
		Popliteal fossa	1	
		Knee joint	1	
		Movements of Knee Joints		1
		Compartments of Leg	1	
		Ankle joint	1	
		Subtalar joint	1	
		Arches of foot	1	
		Total	11	2

Sr. No.	Region	Topic	Lect.	LD
4	**Head, Face & Neck**	Scalp	1	
		Face-Muscles, Nerve supply	1	
		Face-Blood supply		1
		Triangles of neck & posterior triangle	1	
		Anterior triangle		1
		Carotid triangle	1	
		Thyroid gland	1	
		Subclavian artery		1
		Cervical sympathetic chain		1
		Functional components of Cranial Nerves	1	
		Cranial Nerve XI in neck		1
		Parotid gland	1	
		Extra cranial VII Nerve	1	
		Infra temporal region & mandibular nerve	1	
		Infra temporal fossa		1
		T M Joint	1	
		Muscles of mastification		1
		Submandibular region & gland	1	
		Hypoglossal nerve	1	
		Styloid apparatus & glossopharyngeal Nerve	1	
		Meninges & dural venous sinuses		1
		Cavernous Sinus	1	
		Pituitary gland	1	
		Peripheral Parasympathetic Ganglia	1	
		Orbit		1
		Extra ocular muscles of eye	1	
		Ophthalmic & maxillary div. of V Cranial Nerve	1	
		Cranial Nerve III & ciliary ganglion	1	
		Cranial Nerve IV & VI	1	
		Joints in Cervical Region		1
		Pharynx	1	
		Palate	1	
		Tongue	1	
		Lateral wall of nose & nasal septum		1
		Paranasal sinuses	1	
		Larynx	1	
		Larynx- Interior		1
		Middle ear	1	
		Total	26	12

Sr. No.	Region	Topic	Lect.	LD
5	**Neuro Anatomy**	Introduction to CNS	1	
		Spinal cord I (Nuclei & tracts)	1	
		Spinal cord External features		1
		Spinal cord II (Blood supply & applied)	1	
		Blood supply of brain	1	
		Medulla I	1	
		Medulla II	1	
		Pons	1	
		Mid brain	1	
		Cerebellum	1	
		IV Ventricle	1	
		Gyri, sulci & functional areas of brain	1	
		White matter of cerebrum & corpus callosum	1	
		Basal ganglia	1	
		Thalamus	1	
		Hypothalamus		1
		Internal capsule	1	
		Lateral ventricle	1	
		III Ventricle	1	
		CSF Circulation		1
		Total	17	3

Sr. No.	Region	Topic	Lect.	LD
6	**Thorax**	Thoracic cavity	1	
		Intercostal space	1	
		Typical Intercostal Nerve		1
		Pleura	1	
		Broncho pulmonary segments	1	
		Lungs		1
		Mediastinum divisions & Superior Med.	1	
		Pericardium	1	
		Interior of right atrium	1	
		Blood supply of heart	1	
		Respiratory Movements		1
		Thoracic duct	1	
		Esophagus	1	
		Azygous system	1	
		Total	11	3

Sr. No.	Region	Topic	Lect.	LD
7	**Abdomen & Pelvis**	Ant. Abd. Wall	1	
		Rectus sheath		1
		Inguinal canal	1	
		Spermatic cord	1	
		Testis		1
		Peritoneum	1	1
		Lesser sac	1	
		Stomach	1	
		Duodenum	1	
		Portal vein	1	
		Extra hepatic biliary system	1	
		Kidney	1	
		Ureter	1	
		Diaphragm	1	
		Urinary bladder	1	
		Prostate	1	
		Rectum	1	
		Uterus	1	
		Anal canal	1	
		Fallopian tube & ovary	1	
		Perineal pouches	1	
		Ischio rectal fossa	1	
		Pelvic diaphragm	1	
		Internal Iliac Artery		1
		Total	21	4

Sr. No.	Region	Topic	Lect.	LD
8	**Histology (General +Systemic)**	**General**		
		Cells & organelles	1	
		Epithelium	1	
		Connective Tissue	1	
		Cartilage	1	
		Bones	1	
		Muscle	1	
		Nervous System	1	
		Blood vessels	1	
		Lymphoid System	2	
		Skin	1	
		Revision General Histology	1	
		Systemic		
		Tongue & Salivary gland	1	
		Oesophagus & stomach	1	
		Small & Large intestines & appendix	1	
		Accessory organs of digestive system	1	
		Respiratory System	1	
		Urinary system	1	
		Male reproductive system	1	
		Female reproductive system	2	
		Endocrines	1	
		Nervous system	1	
		Eye- retina & cornea	1	
		Revision Systemic Histology	2	
		Total	26	

Sr. No.	Region	Topic	Lect.	LD
9	**Embryology (General +Systemic)**	**General**		
		Cell Division	1	
		Gametogenesis	1	
		Ovarian & Menstrual Cycle	1	
		Fertilization & 1st Wk of Development	1	
		2nd Wk of Development	2	
		3rd wk of Development	2	
		4th wk of Development	1	
		Folding of embryo	1	
		Placenta	2	
		Revision General Embryology	1	
		Systemic		
		GIT	4	
		Respiratory system	1	
		Cardiovascular system	3	
		Urinary system	1	
		Male Reproductive System	2	
		Female Reproductive System	2	
		HFN	3	
		Nervous system	1	
		Revision Systemic Embryology	1	
		Total	31	

Sr. No.	Region	Topic	Lect.	LD
10	**Genetics**	Karyotyping	1	
		Chromosomal abnormalities	1	
		syndromes	1	
		Inheritance	1	
		Genetic Counseling	1	
		Prenatal Diagnosis	1	
		Total	6	

SYLLABUS & TEACHING HOURS DISTRIBUTION
(1ST Year MBBS-Practical)

Sr. No.	Topic	Practical Hours
35.	General Anatomy	2
36.	Upper Limb	41
37.	Lower Limb	38
38.	HFN	69
39.	Neuro Anatomy	21
40.	Thorax	35
41.	Abdomen & Pelvis	75
42.	Histology	52
43.	Embryology	29
44.	Genetics	2
45.	Mid Term Exams	30
46.	Terminal & Prelim Exams	80
	Total	**474**

Sr. No.	Topic	Diss. Hours	Demo Hours	Tut. Hours	Pract. Hours	Exam Hours	Total Practical Hours
13.	General Anatomy		1	1			**2**
14.	Upper Limb	32	7	2			**41**
15.	Lower Limb	28	8	2			**38**
16.	HFN	49	16	4			**69**
17.	Neuro Anatomy	9	10	2			**21**
18.	Thorax	24	10	1			**35**
19.	Abdomen & Pelvis	56	14	5			**75**
20.	Histology				52		**52**
21.	Embryology				29		**29**
22.	Genetics				2		**2**
23.	Mid Term Exams					30	**30**
24.	Terminal & Prelim Exams					80	**80**
	Total	**198**	**66**	**17**	**83**	**110**	**474**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
1	**General Anatomy**	Bones		1	
		Joints			1
		Total		**1**	**1**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
2	**Upper Limb**	Pectoral region	4		1
		Axilla	4		
		Scapular region	4		
		Back	4		
		Arm i. Back	2		
		ii. Front	2		
		Cubital fossa	2		1
		Fore arm i. Front	4		
		ii. Back	2		
		Palm	4		
		Clavicle		1	
		Scapula		1	
		Humerus		1	
		Radius		1	
		Ulna		1	
		Articulated hand		1	
		Radiology & Living Anatomy		1	
		Total	**32**	**7**	**2**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
3	**Lower Limb**	Front of thigh	4		
		Medial compartment	2		
		Gluteal region	6		1
		Back of thigh	2		
		Popliteal fossa	4		1
		Leg - posterior	4		
		Leg – anterior and lateral	2		
		Sole	4		
		Hip bone		2	
		Femur		2	
		Tibia		1	
		Fibula/ Patella		1	
		Articulated foot		1	
		Radiology & Living Anatomy		1	
		Total	**28**	**8**	**2**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
4	**Head, Face & Neck**	Scalp & Face	6		
		Posterior triangle	4		1
		Anterior triangle	6		
		Deep dissection of neck	4		1
		Parotid region	4		
		Temporal & Infra temporal region	6		
		Submandibular region	4		1
		Removal of brain	4		
		Orbit	4		
		Pharynx, palate, tongue & nose	3	4	
		Larynx	4	1	
		Normas Skull		5	1
		Cranial fossa Skull		2	
		Mandible		1	
		Cervical Vertebra		1	
		Foetal skull		1	
		Radiology & Living Anatomy		1	
		Total	**49**	**16**	**4**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
5	**Neuro Anatomy**	Spinal cord	1	1	
		Brain Stem	1	1	1
		Cerebellum		2	
		Cerebrum	3	4	1
		Sections	4	2	
		Total	**9**	**10**	**2**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
6	**Thorax**	Thoracic cavity & Intercostal space	8		
		Lungs	4	1	
		Heart	6	2	1
		Posterior mediastinum	6	1	
		Sternum		1	
		Rib		2	
		Thoracic Vertebra		2	
		Radiology & Living Anatomy		1	
		Total	**24**	**10**	**1**

Sr. No.	Region	Topic	Diss.	Demo	Tut.
7	**Abdomen & Pelvis**	Anterior Abdominal wall Rectus sheath	4		
		Inguinal canal	2		
		Testis and spermatic cord	4		
		Peritoneum	4		
		Liver	2	1	1
		Stomach	2	1	
		Small & Large intestines	2	1	1
		Pancreas	2	1	
		Spleen	2	1	
		Kidney	4	1	1
		Supra renal	2		
		Posterior abdominal wall	6		
		Diaphragm	2		
		Uterus	4	1	1
		Urinary bladder	4	1	
		Perineum	4		
		Male Pelvis	3	1	
		Female Pelvis	3	1	
		Pelvis		1	1
		Lumber vertebra		1	
		Sacrum		1	
		Radiology & Living Anatomy		1	
		Total	**56**	**14**	**5**

Sr. No.	Region	Topic	Practical
8	**Histology (General +Systemic)**	**General**	
		Microscope	2
		Cells & organelles	2
		Epithelium	2
		Connective Tissue	2
		Cartilage	2
		Bones	2
		Muscle	2
		Nervous System	2
		Blood vessels	2
		Lymphoid System	4
		Skin	2
		Revision	2
		Systemic	
		Tongue & Salivary gland	2
		Oesophagus & stomach	2
		Small & Large intestines & appendix	2
		Accessory organs of digestive system	2
		Respiratory System	2
		Urinary system	2
		Male reproductive system	2
		Female reproductive system	4
		Endocrines	2
		Nervous system	2
		Eye- retina & cornea	2
		Revision	2
		Total	**52**

Sr. No.	Region	Topic	Practical
9	Embryology (General +Systemic)	**General**	
		Gametogenesis	1
		Ovarian & Menstrual Cycle	1
		Fertilization & 1st Wk of Development	1
		2nd Wk of Development	2
		3rd wk of Development	2
		4th wk of Development	1
		Folding of embryo	1
		Placenta	2
		Revision	2
		Systemic	
		GIT	4
		Respiratory system	1
		Cardiovascular system	3
		Urinary system	1
		Male Reproductive System	1
		Female Reproductive System	1
		HFN	3
		Revision	2
		Total	**29**

Sr. No.	Region	Topic	Practical
10	**Genetics**	Karyotyping	1
		Chromosomal abnormalities	1
		Total	**2**

Registrar

From: Aruna Mukherjee [arunamukherjee123456@gmail.com]
Sent: 15 January 2016 13:31
To: registrar@mgmuhs.com; Lalita Chavan
Subject: Pattern of Examination & Internal Assessment - Distribution of Marks
Attachments: Pattern of Examination.docx

A Cell
16/1/16.

DEPARTMENT OF ANATOMY
MGM MEDICAL COLLEGE KAMOTHE, NAVI MUMABI

Date: 15.1.2016

Pattern of Examination

Preliminary + University Examination

Theory – 120 Marks	**Practical – 40 Marks**
Paper I - 50 Marks	Soft Part – 20 Marks
Paper II - 50 Marks	Radio + Living = 10 Marks
50 Marks + 50 Marks + Viva (20 Marks = 120)	Histology Spotting = 6 Marks
Section A – MCQs - Total (20X0.5=10 Marks)	Histology Slide Discussion = 4 Marks
Section B – SAQs - Total (4X5=20 Marks)	**Viva – 20 Marks** **Appendicular = 6 Marks** **Axial Skeleton = 7 Marks** **Embryology = 7 Marks**
Section C – LAQs - Total (2X10=20 Marks)	

Internal Assessment Distribution of Marks

Theory – 20 Marks		**Practical – 20 Marks**	
Terminal Examination	5	Terminal Examination	5
Preliminary Examination	5	Preliminary Examination	5
Attendance	5	Attendance	5
Seminars	5	Journals	5
Total	**20**	**Total**	**20**

Resolution passed in BOM – 48/2017, dated 24/01/2017

Item No. 5.6: BOS (Preclinical) dated 20.09.2016

a) About **Internal assessment examination pattern Anatomy, Physiology and Biochemistry**.

Resolution No. 5.6(a): It was resolved to abide by the existing **Internal assessment examination pattern of Anatomy, Physiology and Biochemistry in 1st MBBS** with regards to distribution of marks and pattern in concurrence with rules of MCI & MGMIHS.

b) **Internal Assessment pattern – First MBBS**

Resolution No. 5.6(b): It was resolved that the actual modality to calculate day to day assessment component of internal assessment in MBBS subjects is to be decided by the respective department heads with keeping all the records for verification in future.

c) About inclusion of Bioethics in MBBS (UG) curriculum.

d) About inclusion of Bioethics in PG curriculum and research.

For both above items' following resolution was adopted

Resolution No. 5.6(c): It was resolved to send the material received by University from UNESCO chair, Bioethics to Dean Faculty (Aurangabad and Navi Mumbai) and Chairpersons of BOS for their perusal and appropriate inputs to be put forth in next BOS meeting for discussion. [Annexure-II & III of BOM-48/2017]

1st year - MBBS

Resolution No. 1.3.7.1 of BOM-51/2017: Resolved to continue the current Internal Assessment pattern for MBBS (i.e. 5 marks for Day-to-day assessment) for Pre and Para Clinical subjects (Anatomy, Physiology, Biochemistry, Microbiology, Pharmacology, Pathology and FMT).
For rest of the subjects, Internal Assessment is to be calculated from terminal/Post end exam marks and Prelims examination, with immediate effect.

1st MBBS

Anatomy

Resolution No. 1.3.7.3 of BOM-51/2017: Approved to include Bioethics in First MBBS curriculum with three Lectures (1 hr each) per subject of Anatomy, Physiology and Biochemistry with topics: (with effective from Academic year 2017-18)

1) Anatomy –
    1) Cadaveric oath
    2) Genetic counseling
    3) Biomedical waste disposal

1st MBBS, Anatomy

Resolution No. 3.5.2 of BOM-52/2018: It was resolved to conduct Bioethics as lecture schedule in MBBS in Anatomy, Physiology, Biochemistry with topics & time table as mentioned below, with effect from batch admitted in 2017-18 onwards–

1) Anatomy –
   1) Cadaveric oath (September)
   2) Genetic counseling (April)
   3) Biomedical waste disposal (December)

I MBBS

Resolution No. 3.5.9 of BOM-52/2018:

a) BOM reiterated the earlier BOM resolution as mentioned below:

Resolution No. 1.3.7.5 of BOM-51/2017: It was resolved that

i) In all the subjects of all courses, MCQ weightage (Section A) shall be a maximum of 20% of the total marks in each paper.

ii) BOS will have to accordingly workout the changes in Section B & C weightage and put up in forthcoming BOS meeting.

iii) Further University Examination section must validate the MCQ Question Bank by Faculties before giving it to question paper-setter.

b) To be effective from:

(i) Ist MBBS - Batch appearing in University August/September 2018 examination onwards.

(ii) IInd MBBS - Batch appearing in University January 2019 examination onwards.

(iii) IIIrd MBBS (Part I) and IIIrd MBBS (Part II) - Batch appearing in University January 2019 examination onwards.

Resolution No. 3.5.11 of BOM-52/2018: Resolved to have Exam Schedule of Ist MBBS which is as follows :

1. Terminals 1st week of February 2018
2. Prelims – 1st week of July 2018
3. University Exam
   a) Theory – August 1st week 2018
   b) Practical – 3rd week of August 2018

1ST MBBS

Resolution No. 3.5.1 of BOM-52/2018: Resolved to have Internal Assessment for each subject in 1st (MBBS) as mentioned below, with effect from batch admitted in 2017-18 onwards:

Theory – 20 marks

1. 15 marks (Terminal & Prelim exam theory marks)
2. 5 marks (Departmental assessment)
    a. 3 marks (4 Periodical Theory tests)
    b. 2 marks (Seminars)

Practical – 20 marks

1. 15 marks (Terminal + Prelim Practical marks)
2. 5 marks (continuous departmental assessment)
    a. 3 marks (4 Periodical practical tests)
    b. 2 marks Journals

Note –There will be 4 periodical tests in each subject (Two per term) in theory & practicals of 30 marks each.

Resolution No. 3.5.8 of BOM-52/2018: It was resolved that 2 horizontal & 1 Vertical integration will be taken per term in 1st MBBS, with effect from batch admitted in 2017-18 onwards. **[Annexure-II A, II B, II C & II D]**

Annexure - II

Annexure - II

~~Annexure VII A~~

I MBBS -Horizontal Integration Topics of Anatomy ,Physiology and Biochemistry.

Sr. No.	Topics	Anatomy	Physiology	Biochemistry
1.	Diabetes Mellitus	Endocrine Part Of Pancreas	Control of Insulin Secretion & Functions	lab Diagnosis & GIT
2.	Endemic Goiter	Thyroid Gland	Formation & Regulation of T_3, T_4 & TSH	Iodine Metabolism & Function Tests
3.	Myocardial Infarction	Coronary Arteries	ECG	Cardiac Markers
4.	Jaundice	Hepato Biliary Tree	Fate of Haemoglobin Bile Enterohepatic circulation	Diagnostic tests for Jaundice.
5.	Glomerular Filtration	Nephron	Physiology of Glomerular Filtration	Inulin & Creatinine Clearance Test

*Note :

1. Two sessions of Horizontal integration will be conducted per term for 1st MBBS students.
2. This can be subject to change as per requirement and rotation in subsequent years.

Annexure VII B

Vertical Integration Topics of Anatomy

1. **Breast cancer**
   - Anatomy – Mammary Gland
   - Radiology – Mammography
   - Surgery – Diagnosis and treatment in reference to Anatomy

2. **Thyroid – Goitre**
   - Anatomy – Thyroid Gland
   - Medicine – Diagnosis with reference to Anatomy and Physiology
   - Surgery – Diagnosis and treatment in reference to Anatomy
   - Community Medicine – Epidemiology

3. **Tonsillitis**
   - Anatomy – Palatine Tonsil
   - ENT – Diagnosis and treatment in reference to Anatomy

4. **Fallopian tube – Ectopic Pregnancy**
   - Anatomy – Fallopian tube
   - OBGY – Diagnosis and treatment in reference to Anatomy
   - Community Medicine – Tubal ligation as method of contraception

5. **Tuberculosis**
   - Anatomy – Lungs
   - Pathology – Changes in lungs with reference to normal histology
   - Radiology – Findings in chest radiographs
   - Respiratory Medicine – Diagnosis and treatment in reference to Anatomy
   - Community Medicine – Epidemiology

*Note : As per the discussion in the meeting BOS Preclinical – 27/11/2017, we are submitting sample topics for vertical integration. This can be subject to change as per requirement and rotation in subsequent years

One session of vertical integration will be conducted per term for 1st MBBS students

Annexure for item no 8 in BOS Preclinical – 27/11/2017

PG Allied Posting

As per the discussion in the meeting BOS Preclinical – 27/11/2017, we are submitting final schedule of allied posting in MD Anatomy.

a. Pathology – 2 weeks
b. FMT – 2 weeks
c. Radiology – 4 weeks
d. Genetics – 2 weeks

NOTE : MD Student from Aurangabad campus can be deputed for genetics posting in Navi Mumbai campus.

Resolution No. 4.3.5 of BOM-53/2018: Resolved to add reference book entitled "ESSENTIAL IN RESPIRATORY MEDICINE" by Dr. S.H. Talib in the UG/PG curriculum in medicine and allied subjects

Resolution No. 4.5.1.2 of BOM-55/2018: Resolved that the internal assessment for 1st M.B.B.S. will be calculated as per the table below from 2018-19 onwards. Further Departments should maintain record of Internal Assessment:

Theory: (20 Marks)

	I Terminal & Prelim	4 Periodicals	PBL	Seminar
Existing	15	3		2
Revised	10	5	5 PBL/Seminar/case studies/any other as per dept.	

Practical: 20 marks

	I Terminal & Prelim	4 Periodicals	OSPE	Journal
Existing	15	3		2
Revised	10	5	5 Journal/OSPE/any other method as per dept.	

Resolution No. 4.5.1.3 of BOM-55/2018: Resolved to accept specific mark distribution in MCQ (Section A) in 1st MBBS – Anatomy, Physiology & Biochemistry. To be implemented from 2018-19 onwards. **[Annexure-30-A,B,C]**

Annexure C - 30 - (A)

Annexure C – 1

SPECIFIC MARK DISTRIBUTION IN MCQ PAPER IN I MBBS ANATOMY

Paper I

Sr. No.	Topic	No. of Questions
1.	Upper Limb	4
2.	Thorax	4
3.	Systemic Histology	2
4.	Systemic Embryology	2
5.	Head, Face & Neck	4
6.	Neuroanatomy	4
Total		**20**

Paper II

Sr. No.	Topic	No. of Questions
1.	Lower Limb	4
2.	Abdomen	4
3.	Pelvis	4
4.	Systemic Histology	2
5.	Systemic Embryology	1
6.	General Histology	1
7.	General Embryology	2
8.	General Anatomy	1
9.	Genetics	1
Total		**20**

10 % of MCQ marks should be from clinically based questions

Resolution No. 4.13 of BOM-55/2018: Resolved as follows:-

(i) Slow learners must be re-designated as potential learners.

(ii) Students scoring less than 35% marks in a particular subjects/course in the 1st formative exam are to be listed as potential learners. These learners must be constantly encouraged to perform better with the help of various remedial measures.

(iii) Students scoring more than 75% marks in a particular subjects/course in the 1st formative exam are to be listed as advanced learners. These learners must be constantly encouraged to participate in various scholarly activities.

Resolution No. 3.1.4.2 of BOM-57/2019:

i. Resolved to include "Gender Sensitization" into UG (from new batch 2019-2020) and PG (from existing batches) curricula. **[Annexure-21]**

ii. Resolved to align the module of "Gender Sensitization" with MCI CBME pattern for MBBS students.

iii. Resolved that Dr. Swati Shiradkar, Prof., Dept. of OBGY., MGM Medical College, Aurangabad will coordinate this activity at both campuses.

Annexure - 21

Gender sensitization for UG (2nd , 3rd , 8th semesters) and PG (3 hours)

INCLUSION OF " GENDER SENSATIZATION" IN CURRICULUM

Introduction :

The health care provider should have a healthy gender attitude, so that discrimination, stigmatization, bias while providing health care will be avoided. The health care provider should also be aware of certain medico legal issues related with sex & gender.

Society particularly youth & adolescents need medically accurate, culturally & agewise appropriate knowledge about sex, gender & sexuality. So we can train the trainers for the same. It is need of the hour to prevent sexual harassment & abuse .

To fulfill these objectives, some suggestions are there for approval of BOS.

Outline

1)For undergraduates :- Three sessions of two hours each, one in 2nd term, one in 3rd term & one in 8th term.

2)For Faculties and postgraduates :- One session of two hrs .

3)For those want to be trainers or interested for their ownself, value added course, which is optional about sex, gender, sexuality & related issues.

Responsibility

ICC of MGM, MCHA , with necessary support from IQAC & respective departments.

Details of undergraduate sessions

1)First session in 2nd term

Aim – To make Students aware about the concept of sexuality & gender**.**

To check accuracy of knowledge they have,

To make them comfortable with their own gender identify & related issues.

To make them aware about ICC & it is functioning.

Mode – Brain storming , Interactive power point presentation experience sharing.

Duration – Around two hours

Evaluation – Feedback from participants.

2)Second session in 3rd / 4th term

Aim – To ensure healthy gender attitude in these students as now they start interacting with patients.

To ensure that the maintain dignity privacy while interacting with patients and relatives, particularly gender related.

To make them aware about importance of confidentiality related with gender issues.

To encourage them to note gender related issues affecting health care & seek solutions.

Mode – focused group discussions on case studies, Role plays & discussion.

Duration – Around two hours.

Evaluation – Feedback from participants.

Third session in 8th term.

Aim – To understand effect of gender attitudes on health care in various subjects.

To develop healthy gender attitude while dealing with these issues.

Mode – Suggested PBL by departments individually. (In collaboration with ICC till faculty sensitization is complete)

Evaluation – Feedback

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FOR POSTGRADUATES

Session of 2-3 hrs preferably in induction program.

Aim – To introduce medically accurate concept of gender, sex, gender role & sex role.

To ensure healthy gender attitude at workplace.

To understand gender associated concepts on health related issues & avoid such bias wile providing health care.

To make them aware about ICC & it's functioning.

Mode – Interactive PPT

Role plays & discussion

Duration – 2 to 3 hrs

Evaluation – Feedback.

FOR FACULTIES

Session of 2 hours may be during combined activities.

Aim – To ensure clarity of concept abut gender & sex.

To discuss effect of these concept on health related issues.

To identify such gender & sex related issues in indivual subject specialties.

To discuss methodology like PBL for under graduate students when whey are in 7^{th}-8^{th} semester.

Mode – Role play

Focused group discussion

Case studies

Evaluation – Feed back.

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MGM INSTITUTE OF HEALTH SCIENCES

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

Grade 'A' Accredited by NAAC

Sector-01, Kamothe, Navi Mumbai - 410209

Tel 022-27432471, 022-27432994, Fax 022-27431094

E-mail- registrar@mgmuhs.com Website : www.mgmuhs.com