O/C

MGM INSTITUTE OF HEALTH SCIENCES

Accredited by NAAC with 'A' Grade

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

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CHOICE BASED CREDIT SYSTEM (CBCS)

(With effect from 2019-20 Batches)

(For Sem I & Sem II)

Curriculum for M.Sc Medical Anatomy

Dr. Rajesh B. Goel
Registrar
MGM Institute of Health Sciences
(Deemed University u/s 3 of UGC Act, 1956)
Navi Mumbai- 410 209

Approved as per BOM –57/2019, [Resolution No. 3.2.1.6.i], Dated 26/04/2019

22-6-2020.

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

LEARNING OUTCOME BASED CURRICULAM FRAMEWORK

M.Sc Medical Anatomy Course

Sr. No.		
1	Objectives of PG Education	• At the end of the course, the students shall be able to • **1. Knowledge** 1. Describe gross anatomy of entire body including upper limb, lower limb, thorax, abdomen, pelvis, perineum, head and neck, brain and spinal cord. 2. Explain the normal disposition of gross structure, and their interrelationship in the human body. She/He should be able to analyze the integrated functions of organs systems and locate the site of gross lesions according to deficits encountered. 3. Describe the process of gametogenesis, fertilization, implantation and placenta formation in early human embryonic development along with its variation and applied anatomy. 4. Demonstrate knowledge about the sequential development of organs and systems along with its clinical anatomy, recognize critical stages of development and effects of common teratogens, genetic mutations and environmental hazards. She/He should be able to explain developmental basis of variations and congenital anomalies. 5. Explain the principles of light, transmission and scanning, compound, electron, fluorescent and virtual microscopy. 6. Describe the microscopic structure of various tissues & organs and correlate structure with functions as a prerequisite for understanding the altered state in various disease processes. 7. Describe knowledge about cell and its components, cell cycle, cellular differentiation and proliferation. 8. Describe structure, number, classification, abnormalities and syndromes related to human chromosomes. 9. Describe important procedures in cytogenetics and molecular genetics with its application.

		10. Demonstrate knowledge about single gene pattern inheritance, intermediate pattern and multiple alleles, mutations, non-mendelian inheritance, mitochondrial inheritance, genome imprinting and parental disomy. 11. Demonstrate knowledge about reproduction genetics, assisted reproduction, prenatal diagnosis, genetic counseling and ethics in genetics. 12. Explain principles of gene therapy and its applied knowledge. 13. Describe immune system and cell types involved in defense mechanisms of the body. Also explain gross features, cytoarchitecture, functions, development and histogenesis of various primary and secondary lymphoid organs in the body. 14. Demonstrate knowledge about common techniques employed in cellular immunology and histo compatibility testing. 15. Demonstrate applications of knowledge of structure & development of tissue organ system to comprehend deviations from normal. 16. Demonstrate knowledge about recent advances in medical sciences which facilitate comprehension of structure function correlations and applications in clinical problem solving. 17. Demonstrate knowledge about surface marking of all regions of the body. 18. Demonstrate knowledge about outline of comparative anatomy of whole body and basic human evolution 19. Demonstrate knowledge about identification of human bones, determination of sex, age, and height for medico legal application of anatomy • **2. Skills** At the end of the course the student should be able to: 1. Identify, locate and demonstrate surface marking of clinically important structures in the cadaver and correlate it with living anatomy. 2. Acquire mastery in dissection skills, embalming, tissue preparation, and staining and museum preparation. 3. Locate and identify clinically relevant structures in dissected cadavers. 4. Locate and identify cells & tissues under the microscope. 5. Identify important structures visualized by imaging techniques, specifically radiographs, computerized tomography (CT) scans, MRI and ultrasonography. 6. Demonstrate various movements at the important joints and actions of various groups of muscles in the human body. 7. Demonstrate anatomical basis of common clinical procedures expected to be performed by a basic medical doctor.

		8. Demonstrate different methods of teaching-learning and make presentations of the subject topics and research outputs **<u>Specific practice based competencies:</u>** **1. Gross anatomy:** 1.1 Procurement, Embalming and Preservation of human cadavers 1.2 Preparation of tanks for preserving bodies 1.3 Dissection of cadaver 1.4 Window dissection of important regions 1.5 Preparation of specimens for museum with display a) soft parts b) models c) charts 1.6 Preparation and preservation of human bones / skeleton as assigned by the faculty **2. Histology:** 2.1 Preparation of common fixatives embalming fluid 10% formalin, Bouin's fluid etc 2.2 Making paraffin blocks and section cutting and mounting 2.3 Preparation of staining set for H and E staining and staining paraffin sections with the stain 2.4 Making celloidin, araldite, gelatin blocks and their section cutting 2.5 Processing hard tissues, decalcification of bones, block making and sectioning, preparation of ground sections of calcified bones. 2.6 Frozen section cutting on freezing microtome and cryostat 2.7 Honing and Stropping of microtome knives, including sharpening by automatic knife sharpener 2.8 Histology file in which LM and EM pictures of all the organs and tissues of the body should be drawn and a small description of salient features written **3. Histochemical Methods:** 3.1 Practical classes for staining of glycogen, mucopolysaccharides, alkaline phosphatase acid phosphatase, and calcium **4. Cytogenetics:** 4.1 Knowledge about preparation of media, different solutions, stains etc. 4.2 Preparation of buccal smear for sex chromatin Human chromosome preparation from peripheral blood and karyotyping. 4.3 Banding techniques (G and C) 4.4 Making of Pedigree charts for study of patterns of inheritance. 4.5 Chromosomal Analysis.

		5. Neuroanatomy: 5.1 Dissection of brain and spinal cord for teaching and learning purpose 5.2 Preparation of brain and spinal cord macroscopic and microscopic sections and identification of different parts in them. 5.3 Discussions on clinical problems related to neurological disorders and anatomical explanation for the same.
2	Generic Graduate Attributes	**Scholarly Attitude :** • Acquire competencies in gross and surface anatomy, Neuroanatomy, embryology, genetics, histology, radiological anatomy, applied aspects and recent advances of the above mentioned branches of anatomy to teach medical students. • Acquire mastery in dissection skills, embalming, tissue preparation, staining and museum preparation. • Acquire skills in teaching, research methodology, epidemiology & basic information technology. • Acquire knowledge in the basic aspects of Biostatistics and research methodology. • Has knowledge to plan the protocol of a thesis, carry out review of literature, execution of research project and preparation of report. • Has ability to use computer applications Microsoft office (Microsoft word, excel, power point), Internet, Searching scientific databases (e.g. PubMed, Medline, Cochrane reviews). • Acquire skills in paper & poster preparation, writing research papers and Thesis. **Research Aptitude :** • Making presentations of the subject topics and research outputs. • Demonstrate the ability to identify applied implications of the knowledge of anatomy and discuss information relevant to the problem, using consultation, texts, archival literature and electronic media. • Demonstrate the ability to correlate the clinical conditions to

		the anatomical/ embryological/hereditary factors. • Demonstrate the ability to evaluate scientific/clinical information and critically analyze conflicting data and hypothesis. • Develop honest work ethics and empathetic behavior with students and colleagues. • Acquire capacity of not letting his/her personal beliefs, prejudices, and limitations come in the way of duty. • Acquire attitude and communication skills to interact with colleagues, teachers and students. • Practicing different methods of teaching-learning. **Exemplary Leadership:** • Demonstrate self-awareness and personal development in routine conduct. (Self awareness) • Communicate effectively with peers, students and teachers in various teaching learning activities. (Communication) • Demonstrate a. Due respect in handling human body parts & cadavers during dissection. (Ethics & Professionalism) b. Humane touch while demonstrating living surface marking in subject/patient. (Ethics & Professionalism) • Acquire capacity of not letting his/her personal beliefs, prejudices and limitations come in the way of duty. • Appreciate the issues of equity and social accountability while exposing students to early clinical exposure. (Equity and social accountability).
3	Desired Learning Outcomes of Degree	. **Element of Critical thinking** 1. Demonstrate the ability to identify applied implications of the knowledge of anatomy and discuss information relevant to the problem, using consultation, texts, archival literature and electronic media. 2. Demonstrate the ability to correlate the clinical conditions to the anatomical/ embryological/hereditary factors. 3. Demonstrate the ability to evaluate scientific/clinical information and critically analyze conflicting data and

		hypothesis. **Dynamic Professionalism** 1. Develop honest work ethics and empathetic behavior with students and colleagues. 2. Acquire capacity of not letting his/her personal beliefs, prejudices, and limitations come in the way of duty. 3. Acquire attitude and communication skills to interact with colleagues, teachers and students.
4	Proportion of knowledge / Skill / Soft Skill in Curriculum	**Effective Communication Skills** 1. Practicing different methods of teaching-learning. 2. Making presentations of the subject topics and research outputs
5	Curriculum and Employability	**Global Competencies :** 1. Skilled and employed to be a globally competent teacher, researcher and anatomist.

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

M.Sc. MEDICAL ANATOMY

SEMESTER - 1 SYLLABUS

Hours dedicated for every week: 6 (Theory: 4 Practical: 2)

Course Objective (Teaching Objectives)	• To teach basic Anatomical concepts related to General Anatomy, General histology, General Embryology and Musculoskeletal system
Course Outcomes (learning Objectives)	• To understand the basic anatomical concepts of General Anatomy • To understand the basic anatomical concepts of General Histology • To understand the basic anatomical concepts of General Embryology • To understand the basic anatomical concepts of Muscular System • To understand the basic anatomical concepts of Skeletal System

<table>
<tr><th>Unit no.</th><th>Theory Topics</th><th>Hours allotte dNo. of--- hrs</th></tr>
<tr><td>1.</td><td>General Anatomy
<table>
<tr><th>Name of the Subunit</th><th>Topics covered under each subunit</th></tr>
<tr><td>1.1 Terminology</td><td>General anatomy includes introduction to anatomy, Terminology related to anatomy, Different anatomical planes and subdivisions</td></tr>
<tr><td>1.2 Bone</td><td>Skeleton system with classification, types of bone, features of long bone, ossification, blood supply</td></tr>
<tr><td>1.3 Joints</td><td>General classification with examples, structure of typical synovial joints, Classification of synovial joint with examples, Fibrous joints, Cartilaginous joints, Nomenclature</td></tr>
<tr><td>1.4 Muscles</td><td>General features of muscles, classification with examples, types of skeletal muscles, Structures associated with muscle, Cardiac muscle and Smooth muscle, Functions, Naming of muscles</td></tr>
<tr><td>1.5 Cardiovascular system</td><td>Types of circulations, Classification of blood vessels, Anastomosis, Collateral circulation, End arteries, Vasa vasorum</td></tr>
<tr><td>1.6 Nervous System</td><td>Subdivisions of nervous system, Spinal cord and spinal segments, nerve fibers and myelination, Autonomic nervous system</td></tr>
<tr><td>1.7 Integumentary System</td><td>Introduction to skin and fascia, Skin components and layers, types of skin, Fascia, Appendages of skin, Functions</td></tr>
</table></td><td>7 hrs</td></tr>
<tr><td>2.</td><td>General Histology
<table>
<tr><th>Name of the Subunit</th><th>Topics covered under each subunit</th></tr>
<tr><td>2.1 Epithelium and glandular tissue</td><td>Classification of epithelia, Simple epithelium and types, Stratified epithelium and types, Goblet cells, Transitional epithelium, Basement membrane, Surface projections and junctions, Classification of glandular tissue with suitable examples</td></tr>
<tr><td>2.2 Connective tissue</td><td>Components of connective tissue, Fibres, Ground substance, Cells of connective tissue, Loose connective tissue, Dense connective tissue, Adipose tissue</td></tr>
</table></td><td>6 hrs</td></tr>
</table>

	2.3 Skeletal system	Classification of cartilage with examples, Composition of Cartilage and bone, Cells of bone, Bone matrix, Microscopic anatomy of bones	
	2.4 Muscular system	Microscopic structure of skeletal muscle, cardiac muscle and smooth muscle, Differences between the muscle structures	
	2.5 Cardiovascular system and nervous system	Microscopic structure of Medium sized artery, Elastic artery, Vein, Structure of neuron, neuroglia, peripheral nerve, Ganglia	
	2.6 Lymphoid system	Cells of lymphoid system, Lymphatic vessels, Microscopic structure of lymphnode, thymus, spleen and tonsil	
3.	**Unit:3 General Embryology:**		**7 hrs**
	Name of the Subunit	**Topics covered under each subunit**	
	3.1 Introduction to Embryology and cell cycles	Basic terminology, Stages of human development, Cell Cycle, Cell division – Mitosis and Meiosis, related abnormalities	
	3.2 Gametogenesis	Primordial germ cells, Spermatogenesis, Spermiogenesis, Oogenesis	
	3.3 Female reproductive Cycles	Ovarian cycle, Structure of Ovum, Changes in Menstrual cycle, Strata of endometrium	
	3.4 Fertilization	Definition, Stages of fertilization, Effects of fertilization	
	3.5 First week of development	Cleavage division, blastocyst, Implantation, Normal and abnormal sites of implantation and related applied embryology	
	3.6 Second week of development	Formation of 2 germ layers, Yolk sac, Chorion and amnion	
	3.7 Third week of development	Gastrulation, Notochord, Neurulation, Folding of embryo	
	3.8 Placenta	Fetal membranes, Chorionic villi, Placenta formation, functions of placenta, Umbilical cord	
4.	**Unit:4 Muscular system:**		**25 hrs**
	Name of the Subunit	**Topics covered under each subunit**	
	4.1 Muscles of upper limb	Muscles of Pectoral region, muscles of arm, Axilla, spaces of axilla, Cubital fossa , muscles of forearm, intrinsic muscles of palm, flexor and extensor retinacula, carpal tunnel and syndrome, Brachial plexus and related nerves	

	4.2 Muscles of lower limb	Femoral triangle, Front of the thigh, Adductor canal, gluteal region, Hamstrings, Popliteal fossa, Muscles of leg, Arches of foot, Nerve supply to lower limb – Femoral nerve, Obturator nerve and Sciatic nerve, Blood supply to lower limb	
	4.3 Muscles of Abdomen	Muscles of anterior abdominal wall, Inguinal canal and hernia, Diaphargm, Muscles of posterior abdominal wall	
	4.4 Muscles of head and neck	Muscles of scalp and face, Muscles of mastication, Posterior triangle, Anterior triangle, Sternocleidomastoid, Trapezius , Related nerve supply	
	4.5 Muscles of thoracic cage	Intercostal space, Intercostal muscles, respiratory movements	
5.	**Unit:5 Skeletal System:**		
	Name of the Subunit	**Topics covered under each subunit**	**15**
	5.1 Bones of Head and neck	Norma verticalis, Norma Basalis, Norma Occipitalis, Norma Lateralis, Interior of skull, Mandible	
	5.2 Vertebral column	Curvatures of vertebral column, General features of vertebrae, Typical and atypical vertebrae, intervertebral disc	
	5.3 Thoracic bones	Sternum, Classification of ribs, General features of typical rib, 1st, 2nd, 10th, 11th and 12th rib features	
	5.4 Upper limb skeleton	Clavicle, Scapula, Humerus, Shoulder joint, Elbow joint, Radius, Ulna, Radioulnar joints, Wrist joint, Bones of hand	
	5.5 Lower limb skeleton	Hip bone, Femur, Hip joint, Knee joint, Tibia, Fibula, Ankle joint, Bones of foot	
	Total		**60 hrs**

Unit no.	Practical Topics	Hours allotted No. of---hrs
1.	General Anatomy • Bone • Joints	1 hr
2.	**General Histology** • Epithelium • Connective tissue • Cartilage and Bone • Muscular tissue • Vascular tissue • Skin and fascia • Lymphoid Tissue • Nervous tissue	6 hrs
3.	**General Embryology** • Gamets and Gametogenesis • Clevage and blastulation • Implantation and Abnormal sites of Implantation • Formation and derivatives of three germ layers • Notochord formation and Neurulation • Folding of embryo • Placenta	3 hrs
4.	**Muscular system** • Muscles of pectoral region • Muscles of Arm and Cubital fossa • Muscles of forearm • Muscles of palm • Muscles of thigh • Muscles of popliteal fossa and Gluteal region • Muscles of leg • Muscles of foot • Muscles of Thorax • Muscles of abdominal wall • Muscles of head and neck region	10 hrs
5.	**Skeletal System** • Bones of Upper limb • Bones of Lower limb • Joints of upper limb • Joints of lower limb • Vertebral column • Bones of thoracic cage • Skull and Mandible	10 hrs
	Total	**30 hrs**

Reference Books:

1. B D Chaurasia Vol-1,2 and 3
2. Vishram Singh Vol-1,2,and 3
3. General Anatomy- B.D.Chaurasia
4. General Histology – Krishna Garg
5. General Embryology – Inderbir Singh

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

M.Sc. MEDICAL ANATOMY

SEMESTER - 2 SYLLABUS

Hours dedicated for every week: 6 (Theory: 4 Practical: 2)

CourseObjective (Teaching Objectives)	• To teach basic Anatomical concepts related to Respiratory system, Cardiovascular system, Gastrointestinal system, Genitourinary system, Endocrine system, Nervous system.
Course Outcomes (learning Objectives)	• To understand the basic anatomical concepts of Respiratory system • To understand the basic anatomical concepts of Cardiovascular system • To understand the basic anatomical concepts of Gastrointestinal system • To understand the basic anatomical concepts of Genitourinary system • To understand the basic anatomical concepts of Endocrine system • To understand the basic anatomical concepts of Nervous system

<table>
<tr><th>Unit no.</th><th>Theory Topics</th><th>Hours allotted No. of--- hrs</th></tr>
<tr><td>1.</td><td>Respiratory System
<table>
<tr><th>Name of the Subunit</th><th>Topics covered under each subunit</th></tr>
<tr><td>1.1 Nose and Nasal Cavities</td><td>General anatomy of Nose, Nasal Septum, Lateral wall of the Nose</td></tr>
<tr><td>1.2 Larynx</td><td>Gross features of larynx, Cartilages of larynx, Muscles of larynx, Blood and Nerve supply of larynx</td></tr>
<tr><td>1.3 Trachea</td><td>Trachea features, Tracheobronchial tree</td></tr>
<tr><td>1.4 Bronchopulmonary Segments</td><td>Features, Segments of Right and Left lung, Blood Supply to segments</td></tr>
<tr><td>1.5 Pleura</td><td>Types of pleura, Pleural cavity, Extensions and relations, Blood and Nerve supply</td></tr>
<tr><td>1.6 Lungs</td><td>Gross features, Lobes and fissures, Surfaces and relations, Blood and nerve supply</td></tr>
<tr><td>1.7 Mediastinum</td><td>Divisions of Mediastinum, Contents of Mediastinum, Thoracic duct, Azygous venous systems.</td></tr>
<tr><td>1.8 Diaphragm</td><td>Gross features, Surfaces and relations, Parts and Openings, Clinical features related to Diaphragm, Blood and nerve supply, Functions and Actions of Diaphragm</td></tr>
</table></td><td>12 hrs</td></tr>
<tr><td>2.</td><td>Cardiovascular System
<table>
<tr><th>Name of the Subunit</th><th>Topics covered under each subunit</th></tr>
<tr><td>2.1 Pericardium</td><td>Parts and divisions of pericardium, Sinuses of pericardium, Blood and nerve supply of pericardium</td></tr>
<tr><td>2.2 Heart</td><td>External features, Internal features of heart with right atrium in detail, Coronary circulation, Nerve supply of heart</td></tr>
<tr><td>2.3 Major vessels related to heart</td><td>Aorta in detail, Superior and Inferior vena cava, Pulmonary vessels</td></tr>
</table></td><td>6hrs</td></tr>
<tr><td>3.</td><td>Unit:3 Gastrointestinal System:
<table>
<tr><th>Name of the Subunit</th><th>Topics covered under each subunit</th></tr>
</table></td><td>16 hrs</td></tr>
</table>

	3.1 Tongue	Gross features, Divisions, Muscles of tongue, Blood Supply, Nerve Supply in detail.	
	3.2 Soft Palate	Gross features, Muscles of soft palate, Blood and nerve supply of soft palate	
	3.3 Pharynx	Gross features, Subdivisions, Features of Naso pharynx, Features of Oropharynx, Features of Laryngo Pharynx, Muscles of Pharynx, Blood and Nerve Supply.	
	3.4 Peritoneum	Divisions, Peritoneal reflections, Peritoneal Folds, Lesser Sac	
	3.5 Oesophagus and Stomach	Oesophageal -divisions, Muscles, Constrictions, Blood and nerve supply. Stomach – Gross features, Surfaces and relations, Interior, Blood and Nerve Supply	
	3.6 Small Intestine	Duodenum- Features, divisions, Interior, relations, Blood and nerve supply, General features of Jejunum and Ileum, Differences between each part of small intestine.	
	3.7 Large intestine	Features, divisions, Ceacum in detail, Appendix in detail, Blood supply, Differences between small and large intestine.	
	3.8 Rectum and Anal Canal	Rectum – Features, Interior, Folds, Blood supply and Nerve supply, Anal canal – Features, Muscles, Interior, Clinical Anatomy.	
	3.9 Liver and Extra hepatic biliary apparatus (EHBA)	Liver – gross features, Segments, lobes, Surfaces and relations, Porta hepatis, Blood supply, EHBA – Gall bladder, Cystic duct, Bile ducts	
	3.10 Pancreas	Gross features, Surfaces and relations, Blood supply and Applied anatomy	
	3.11 Spleen	Gross features, Surfaces and relations, Blood supply and Applied anatomy	
	3.12 Abdominal Aorta	Features, Branches and relations	
4.	**Unit:4 Genitourinary system:**		
	Name of the Subunit	**Topics covered under each subunit**	**10 hrs**
	4.1 Kidney	Gross features, Surfaces and relations, Interior, Blood supply, Applied Anatomy	
	4.2 Ureter and Urinary Bladder	Ureter - Gross features, Extensions and divisions, Constricions, Blood supply, Applied Anatomy, Urinary Bladder - Gross features, Surfaces and relations, Interior, Blood supply, Applied Anatomy	
	4.3 Male reproductive system	Testis – Gross features, Surfaces and coverings, Relations, Interior, Blood supply, Applied Anatomy, Epididymis, Vas deferens, Prostrate, and External genetalia of Male.	
	4.4 Female Reproductive System	Uterus – Gross features, Surfaces and relations, Supports of uterus, Interior and Blood supply. Ovaries – Surfaces, relations, Blood supply, Fallopian tubes –	

<table>
<tr><td></td><td><table>
<tr><td></td><td>parts, relations, blood supply</td></tr>
<tr><td>4.5 Urethra</td><td>Male And Female urethra – Extension, parts, relations, interior, applied.</td></tr>
</table></td><td></td></tr>
<tr><td>5.</td><td>Unit:5 Endocrine System:<table>
<tr><th>Name of the Subunit</th><th>Topics covered under each subunit</th></tr>
<tr><td>5.1 Thyroid Gland and Parathyroids</td><td>Gross features of thyroid gland, coverings, Surfaces and relations, blood supply, Applied anatomy and Parathyroids</td></tr>
<tr><td>5.2 Pituitary Gland</td><td>Gross features, Parts and divisions, Relations, Composition, Blood supply and Functions</td></tr>
<tr><td>5.3 Suprarenal Gland</td><td>Gross features, Coverings, Relations, Blood supply</td></tr>
</table></td><td>3 hrs</td></tr>
<tr><td>6.</td><td>Unit:6 Nervous System:<table>
<tr><th>Name of the Subunit</th><th>Topics covered under each subunit</th></tr>
<tr><td>6.1 Meninges and Dural Venous Sinuses</td><td>Meninges, Dural folds, Dural venous sinuses- Classification, Cavernous sinus in detail</td></tr>
<tr><td>6.2 Spinal Cord</td><td>External features, Parts and divisions, Section of spinal cord showing ascending and descending tracts, Spinal nerves, Blood supply</td></tr>
<tr><td>6.3 Brain Stem</td><td>External features of medulla, Pons and Midbrain, Fourth ventricle</td></tr>
<tr><td>6.4 Cerebellum</td><td>Gross features, Lobes and fissures, surfaces and relations, Blood supply and Applied Anatomy</td></tr>
<tr><td>6.5 Cerebrum</td><td>Sulci and Gyri, Functional areas of brain, White matter of the brain, Lateral ventricle, Third ventricle, Blood supply of brain</td></tr>
<tr><td>6.6 Cranial nerves</td><td>Cranial nerves – I-XII, Facial nerve in detail, Hypoglossal nerve in detail, Trigeminal nerve in detail.</td></tr>
</table></td><td>13 hrs</td></tr>
<tr><td></td><td>Total</td><td>60 hrs</td></tr>
</table>

Unit no.	Practical Topics	Hours allotted No. of---hrs
1.	**Respiratory System** • Sagittal section of HFN • Larynx and Trachea • Lung • Bones of thorax • Structures in Mediastinum • Paranasal Air Sinuses	**5 hrs**
2.	**Cardiovascular System** • Exterior of heart • Interior of heart • Major vessels related to heart	**3 hrs**
3.	**Gastrointestinal System** • Sagittal section of HFN • Stomach • Small Intestine • Large intestine with differences • Liver • Spleen • Pancreas	**6 hrs**
4.	**Genitourinary system** • Kidney • Ureter, Urinary bladder • Prostate and Seminal vesicles • Testis • Uterus • Fallopian tubes and Ovary • Sagittal section of male and female pelvis • Bones- male and female pelvis • Lumbar vertebrae	**8 hrs**
5.	**Endocrine System** • Thyroid gland and relations in neck	**1 hrs**
6.	**Nervous System** • Spinal Cord • Brain stem • Cerebellum • Cerebrum • Ventricles • Sections of brain	**7 hrs**
	Total	**30 hrs**

Reference Books:

1. B D Chaurasia Vol-1,2 and 3
2. Vishram Singh Vol-1,2,and 3
3. NeuroAnatomy- Inderbir Singh

MGM INSTITUTE OF HEALTH SCIENCES M. Sc. Medical Students Syllabus for Research Methodology and Biostatistics		
	No. of Hours	
I. Research Methodology:	Theory	Practical
Scientific Methods of Research : Definition of Research, Assumptions, Operations and Aims of Scientific Research. Research Process, Significance and Criteria of Good Research , Research Methods versus Methodology, Different Steps in Writing Report, Technique of Interpretation, Precaution in interpretation, Significance of Report Writing, Layout of the Research Report	5	—
Research Designs: Prospective, retrospective, Observational Studies: Descriptive, explanatory, and exploratory, Experimental Studies: Pre-test design, post-test design, Follow-up or longitudinal design, Cohort Studies, Case Control Studies, Cross sectional studies, Intervention studies, Panel Studies.	5	—
Sampling Designs : Census and Sample Survey, Implications of a Sample Design, Steps in Sampling Design Criteria of Selecting a Sampling Procedure, Characteristics of a Good Sample Design, Different Types of Sample Designs (Probability sampling and non probability sampling), How to Select a Random Sample?, Systematic sampling, Stratified sampling, Cluster sampling, Area sampling, Multi-stage sampling, Sampling with probability proportional to size, Sequential sampling.	4	0
Measurement in research: Measurement Scales, Sources of Error in Measurement, Tests of Sound Measurement, Technique of Developing Measurement Tools, Scaling Meaning of Scaling, Scale Classification Bases, Important Scaling Techniques, Scale Construction Techniques, Possible sources of error in measurement, Tests of sound measurement	5	5
Methods of Data Collection: Types of data, Collection of Primary Data, Observation Method, Interview Method, Collection of Primary Data	3	0
Ethics and Ethical practice in research and plagiarism	1	
Sampling Fundamentals : Need and importance for Sampling, Central Limit Theorem, Sampling Theory, Concept of Standard Error, Estimation, Estimating the Population Mean Estimating Population Proportion, Sample Size and its Determination, Determination of Sample Size through the Approach Based on Precision Rate and Confidence Level.	5	2
II. Biostatistics		

Data Presentation : Types of numerical data: Nominal, Ordinal, Ranked, Discrete and continuous. Tables: Frequency distributions, Relative frequency, Graph: Bar charts, Histograms, Frequency polygons, one way scatter plots, Box plots, two way scatter plots, line graphs	3	3
Measures of Central Tendency and Dispersion : Mean, Median, Mode Range, Inter quartile range, variance and Standard Deviation, Coefficient of variation, grouped mean and grouped standard deviation (including merits and demerits).	3	3
Testing of Hypotheses: Definition, Basic Concepts, Procedure for Hypothesis Testing, Normal distribution, data transformationImportant Parametric Tests, Hypothesis Testing of Means, Hypothesis Testing for Differences between Means, Hypothesis Testing for Comparing Two Related Samples, Hypothesis Testing of Proportions, Hypothesis Testing for Difference between Proportions, Testing the Equality of Variances of Two Normal Populations.	6	6
Chi-square Test: Chi-square as a Non-parametric Test, Conditions for the Application Chi-square test, Steps Involved in Applying Chi-square Test, Alternative Formula, Yates' Correction, and Coefficient by Contingency.	2	2
Measures of Relationship: Need and meaning, Correlation and Simple Regression Analysis	2	2
Analysis of Variance and Covariance: Analysis of Variance (ANOVA):Concept and technique of ANOVA, One-way ANOVA, Two-way ANOVA, ANOVA in Latin-Square Design Analysis of Co-variance (ANOCOVA), ANOCOVA Technique.	4	4
Nonparametric or Distribution-free Tests: Important Nonparametric or Distribution-free Test Sign test, Wilcoxon signed-Rank Test, Wilcoxon Rank Sum Test: Mann-Whitney U test Kruskal Walli's test, Friedman's test, and Spearman Correlation test.	3	3
Vital Health Statistics: Measurement of Population: rate, crude rate, specific rate, *Measurement of fertility***:** specific fertility rate, Total fertility rate, *Reproduction rate,* Gross Reproduction Rate, Net Reproduction Rate, Measures related to mortality: Crude Death Rate (CDR) , Age-specific death Rate, Infant and child mortality rate, Measures related to morbidity.	4	3
Computer Application Use of Computer in data analysis and research, Use of Software and Statistical package.	0	2
Total hours	55	35

Name of the Degree: M.Sc. Medical Anatomy

AIMS OF THE PROGRAM

Medical Anatomists are in great demand of India and abroad.

Postgraduate qualification in Anatomy can earn to placements in teaching medical institutes, Paramedical courses, medical coding centres and research laboratories run by the government and the corporate sector.

In academics, one can go for higher qualifications like Ph.D. in various field of biology. There is a great demand of this course abroad as most of the foreign countries are looking for expert in this field. After completion of the course, one can work as Tutor in a Medical set up or as a Research Assistant in Research Laboratories.

Duration of Study: The duration of the study for M.Sc. Medical Anatomy will be of six semesters spread over three years.

Program pattern- Commencement of Semester

- First Semester: August
- Second Semester: February
- Third Semester: August
- Fourth Semester: February
- Fifth Semester: August
- Sixth Semester: February

Eligibility Criteria: As a minimum criterion of eligibility, aspiring candidates are needed to have attained a B.Sc. in any discipline of Life Sciences, Biosciences, Bachelor's degree in any of Physics, Biological Sciences, M.B.B.S, BDS, BAMS, BHMS, B.Pharm.,B.Tech (Biotechnology), Bachelor's Degree in Agricultural, Veterinary and Fishery Sciences, or equivalent examination with a minimum aggregate score of 50%.

For any query visit the website: www.mgmuhs.com

CURRICULUM FOR M. Sc. Medical Anatomy

I st YEAR

Semester I							
	Syllabus Ref. No.	**Subject**	**Credits**	**Teaching hours**	**Marks**		
	Theory				**Internal Assessment**	**Semester Exam**	**Total**
	MA101T	**Medical Anatomy**	**4**	**4**	**20**	**60**	**80**
	MA102T	**Medical Physiology**	**4**	**4**	**20**	**60**	**80**
	MA103T	**Medical Biochemistry**	**4**	**4**	**20**	**60**	**80**
	MA104T	**Medical Pharmacology**	**4**	**4**	**20**	**60**	**80**
	MA105T	**Medical Microbiology**	**4**	**4**	**20**	**60**	**80**
	Practical						
	MA101P	**Medical Anatomy**	**1**	**2**	**20**	**50**	**70**
	MA102P	**Medical Physiology**	**1**	**2**	**20**	**50**	**70**
	MA103P	**Medical Biochemistry**	**1**	**2**	**20**	**50**	**70**
	MA104P	**Medical Pharmacology**	**1**	**2**	**20**	**50**	**70**
	MA105P	**Medical Microbiology**	**1**	**2**	**20**	**50**	**70**
	Total		**25**	**30**	**200**	**550**	**750**

Semester II

	Syllabus Ref. No.	Subject	Credits	Teaching hours	Marks		
	Theory				**Internal Assessment**	**Semester Exam**	**Total**
	MA201T	**Medical Anatomy**	**4**	**4**	**20**	**60**	**80**
	MA202T	**Medical Physiology**	**4**	**4**	**20**	**60**	**80**
	MA203T	**Medical Biochemistry**	**4**	**4**	**20**	**60**	**80**
	MA204T	**Medical Pharmacology**	**4**	**4**	**20**	**60**	**80**
	MA205T	**Medical Microbiology**	**4**	**4**	**20**	**60**	**80**
	MA206T	**Research Methodology & Biostatistics (Core Course)**	**4**	**4**	**20**	**60**	**80**
	Practical						
	MA201P	**Medical Anatomy**	**1**	**2**	**20**	**50**	**70**
	MA202P	**Medical Physiology**	**1**	**2**	**20**	**50**	**70**
	MA203P	**Medical Biochemistry**	**1**	**2**	**20**	**50**	**70**
	MA204P	**Medical Pharmacology**	**1**	**2**	**20**	**50**	**70**
	MA205P	**Medical Microbiology**	**1**	**2**	**20**	**50**	**70**
	MA206P	**Research Methodology & Biostatistics (Core Course)**	**1**	**2**	**20**	**50**	**70**
	Total		**30**	**36**	**240**	**660**	**900**

2ND YEAR

Semester III							
	Syllabus Ref. No.	**Subject**	**Credits**	**Teaching hours**	**Marks**		
	Theory				**Internal Assessment**	**Semester Exam**	**Total**
	MA301T	General Anatomy, General Histology, General Embryology, Upper limb, Thorax	4	4	20	60	80
		Core Elective course**	4	4	Internal Exam 80 Marks		
	MA302CET	Developmental Genetics					
	MA303CET	Radiological Anatomy					
	MA304CET	Surgical Anatomy					
	MA305	Clinical Postings (Radiology, Surgery, Orthopedics, FMT, Genetics)	6	18	50		50
	MA306	Dissertation/Project Proposal*	5	10	50	-	50
	MA307	Seminar, Microteaching, Journal club presentation	2	2	50		50
	Practical						
	MA301P	General Anatomy, General Histology, General Embryology, Upper limb, Thorax	2	4	20	50	70
		Core Elective practical	1	2	Internal Exam 70 Marks		
	MA302CEP	Developmental Genetics					
	MA303CEP	Radiological Anatomy					
	MA304CEP	Surgical Anatomy					
		Total	24	44	190	110	300

Semester IV							
	Syllabus Ref. No.	**Subject**	**Credits**	**Teaching hours**	**Marks**		
	Theory				**Internal Assessment**	**Semester Exam**	**Total**
	MA401T	**Abdomen and Pelvis, Lower limb with systemic histology and embryology, Genetics**	4	4	20	60	80
		General elective **	4	4			
	MA402GET	Bioethics, Biosafety, IPR & Technology Transfer	Internal Exam of 80 Marks				
	MA403GET	Disaster Management and Mitigation Resources					
	MA404GET	Human rights					
	MA405	Clinical Postings (Radiology, Surgery, Orthopedics, FMT, Genetics)	7	21	50		50
	MA406	Dissertation / Project*	5	10	50		50
	MA407	Seminar, Microteaching, Journal club presentation	2	2	50		50
	Practical						
	MA401P	Abdomen and Pelvis, Lower limb with systemic histology and embryology, Genetics	2	4	20	50	70
		Total	24	45	190	110	300

IIIrd YEAR

Semester V							
	Syllabus Ref. No.	**Subject**	**Credits**	**Teaching hours**	**Marks**		
	Theory				**Internal Assessment**	**Semester Exam**	**Total**
	MA501T	Head, Face and Neck, NeuroAnatomy with Systemic histology and Embryology	4	4	20	60	80
	MA502	Clinical Postings (Radiology, Surgery, Orthopedics, FMT, Genetics)	6	18	50		50
	MA503	Dissertation / Project*	12	24	50		50
	Practical						
	MA501P	Head, Face and Neck, Neuro Anatomy with Systemic histology and Embryology	1	2	20	50	70
		Total	23	46	140	110	250

Semester VI							
	Syllabus Ref. No.	**Subject**	**Credits**	**Teaching hours**	**Marks**		
	Theory				**Internal Assessment**	**Semester Exam**	**Total**
	MA601T	Gross Anatomy, Histology and Embryology, Neuro anatomy and Genetics	4	4	20	60	80
	MA602	Clinical Postings (Radiology, Surgery, Orthopedics, FMT, Genetics)	6	18	50		50
	MA603	Dissertation / Project*	12	24		100	100
	Practical						
	MA601P	Gross Anatomy, Histology and Embryology, Neuro anatomy and Genetics	2	4	20	50	70
		Total	24	50	90	210	300

*(a) ***Dissertation / Project* Course** commences in II nd Semester.

Students should undergo ICMR Online Course of Research Methodology before submitting the protocol for their Dissertation. (Ist / II nd Semester)

Allotment of Guide	II nd Semester (On or Before 30 April)
Submission of Protocol for Scientific and Ethical Committee Approval	III rd Semester (On or Before 14 th Aug)
Scientific and Ethical Approval	III rd Semester (On or Before 14 th October)
Commencement of Research Work	III rd Semester 15th October
Submission of Thesis	VI th Semester 31 st March

(Elective): Any one subject is to be chosen from the subjects offered (Subjects offered may change from time to time depending on the availability of expertise)

**Elective courses may or may not have practical and/or field work.

Annexure G - IV

Outline of course curriculum

MSc-Medical Courses (2019-20 batch)

Semester -I

		Hrs/week					Hrs/semester				Exam Marks		
Code No.	Core subjects	Lecture/week	Tutorial/week	Practical hrs/week	Total Hrs /week	Total Credits/week	Lecture/ semester	Tutorial/ semester	Practical/ semester	Total hours	IA	semester Exam	Total marks
Theory													
	Anatomy	3	1		4	4	45	15		60	20	60	80
	Physiology	3	1		4	4	45	15		60	20	60	80
	Biochemistry	3	1		4	4	45	15		60	20	60	80
	Pharmacology	3	1		4	4	45	15		60	20	60	80
	Microbiology	3	1		4	4	45	15		60	20	60	80
Practical													
	Anatomy			2	2	1			30	30	20	50	70
	Physiology			2	2	1			30	30	20	50	70
	Biochemistry			2	2	1			30	30	20	50	70
	Pharmacology			2	2	1			30	30	20	50	70
	Microbiology			2	2	1			30	30	20	50	70
	Total					25				450			750

Total Marks for IA	
Theory	Practical
30	30

Theory Internal Assement	
Theory	15
Seminar	5
Total	20

Practical Internal Assement	
Practical	15
Journal	5
Total	20

Annexure G - V

Outline of course curriculum
MSc-Medical Courses (2019-20 batch)
Semester -II

		Hrs/week					Hrs/semester				Exam Marks		
Code No.	Core subjects	Lecture/ week	Tutorial/ week	Practical hrs/week	Total Hrs /week	Total Credits/ week	Lecture/ semester	Tutorial/ semester	Practical/ semester	Total hours	IA	semester Exam	Total marks
Theory													
	Anatomy	3	1		4	4	45	15		60	20	60	80
	Physiology	3	1		4	4	45	15		60	20	60	80
	Biochemistry	3	1		4	4	45	15		60	20	60	80
	Pharmacology	3	1		4	4	45	15		60	20	60	80
	Microbiology	3	1		4	4	45	15		60	20	60	80
	Research Methodology & Biostatistics	4			4	4	60			60	20	60	80
Practical													
	Anatomy			2	2	1			30	30	20	50	70
	Physiology			2	2	1			30	30	20	50	70
	Biochemistry			2	2	1			30	30	20	50	70
	Pharmacology			2	2	1			30	30	20	50	70
	Microbiology			2	2	1			30	30	20	50	70
	Research Methodology & Biostatistics			2	2	1			30	30	20	50	70
	Total					30				540			900

Total Marks for IA	
Theory	Practical
30	30

Theory Internal Assement	
Theory	15
Seminar	5
Total	20

Practical Internal Assement	
Practical	15
Journal	5
Total	20

Assessment Pattern for MSc Medical Courses (2019 Onwards)

1. LETTER GRADES AND GRADE POINTS:

MGMIHS has adopted the UGC recommended system of awarding grades and CGPA under Choice Based Credit Semester System for MSc Medical courses.

1. MGMIHS would be following the absolute grading system, where the marks are compounded to grades based on pre-determined class intervals.
2. The UGC recommended 10-point grading system with the following letter grades will be followed:

Table 1: Grades and Grade Points

Letter Grade	**Grade Point**
O (Outstanding)	10
A+ (Excellent)	9
A (Very Good)	8
B (Good)	7
C (Above Average)	6
F (Fail)/ RA (Reappear)	0
Ab (Absent)	0
Not Completed (NC)	0
RC (<50% in attendance or in Internal Assessment)	

a. A student obtaining Grade RA shall be considered failed and will be required to reappear in the examination.

b. Candidates with NC grading are those detained in a course (s); while RC indicate student not fulfilling the minimum criteria for academic progress or less than 50%in attendance or less than 50% in internal assessments (IA). Registrations of such students for the respective courses shall be treated as cancelled. If the course is a core course, the candidate has to re-register and repeat the course when it is offered next time.

c. CBCS Grading System - Marks Equivalence Table

Table 2: Grades and Grade Points

Letter Grade	**Grade Point**	**% of Marks**
O (Outstanding)	10	86-100
A+ (Excellent)	9	70-85
A (Very Good)	8	60 -69
B (Good)	7	55 -59
C (Above Average) – **Pass both for UG and PGs**	6	50- 54
F (Fail))/ RA (Reappear)	0	Less than 50
Ab (Absent)	0	-
NC- not completed	0	-
RC- Repeat the Course	0	0

Table 3: Cumulative Grades and Grade Points

Letter Grade	**Grade Point**	**CGPA**
O (Outstanding)	10	9.01 - 10.00
A+ (Excellent)	9	8.01 – 9.00
A (Very Good)	8	7.01 – 8.00
B (Good)	7	6.00 - 7.00
C (Above Average)	6	5.01 - 6.00

d. Assessment of a Course: Evaluation for a course shall be done on a continuous basis. Uniform procedure will be adopted under the CBCS to conduct continuous internal assessments (IA), followed by one end-semester university examination (ES) for each course.

e. Courses in programs wherein Theory and Lab are assessed jointly, the minimum passing head has to be 50% Grade each for theory and practical's separately. RA grade in any one of the components will amount to reappearing in both components. i.e. theory and practical.

2. Eligibility to appear for the end-semester examinations for a course includes:

2.1 Candidates having ≥ 75% attendance and obtaining the minimum 35% in internal assessments in each course to qualify for appearing in the end-semester university examinations.

2.2 The students desirous of appearing for university examination shall submit the application form duly filled along with the prescribed examination fee.

2.3 Incomplete application forms or application forms submitted without prescribed fee or application form submitted after due date will be rejected and student shall not be allowed to appear for examination.

3. Passing Heads

3.1 The minimum passing head shall be 50% in both Theory and practicals separately including the internal assessment.

3.2 Elective subjects – the minimum prescribed marks for a pass in elective subject should be 50%. The marks obtained in an elective subjects should be communicated to the university before the commencement of the university examination. (From IIIrdSem Onwards)

4 Detention:

A student not meeting any of the above criteria may be detained (NC) in that particular course for the semester. In the subsequent semester, such a candidate improve in all, including attendance and/or IA minimum to become eligible for the next end-semester examination.

5 The maximum duration for completing the course will be 6 years (minimum duration of course x 2) i.e. (3x2) =6 years for PG Courses, failing which his/her registration will be cancelled. Full fees of entire course of three years may be liable to be paid by the students.

6 Carry over benefit:

6.1 A candidate who fails in any two main subjects of previous semester shall be permitted to carry over those subjects to the next semester.

6.2 A candidate shall not be allowed to appear in the final semester examination unless the candidate has cleared all the previous semester examinations.

7 Grace Marks for PG Courses:

No grace marks will be awarded for PG Exams.

8. University End-Semester Examination

8.1 There will be one final university examination at the end of every semester.

8.2 A candidate must have minimum 75% attendance (Irrespective of the type of absence) in theory and practical in each subject to be eligible for appearing the University examination.

8.3 The Dean shall send to the university a certificate of completion of required attendance and other requirements of the applicant as prescribed by the university, two weeks before the date of commencement of the written examination.

8.4 A candidate shall be eligible to sit for the examination only, if she / he has secured minimum 35% in internal assessment of that subject. The internal examinations will be conducted at college/ department level.

8.5 Notwithstanding – anything in any examination, a deficiency of attendance at lectures or practical maximum to the extent of 10% - may be condoned by the Dean.

8.6 If a candidate fails either in theory or in practical, he/ she have to re-appear for both.

8.7 There shall be no provision of re- evaluation of answer sheets. Candidates may

apply to the university following due procedure for recounting of theory marks in the

Presence of the subject experts.

8.8 Internal assessments shall be submitted by the Head of the Department to the university

through the Dean MGMMC at least two weeks before commencement of University theory examination.

8.9 Supplementary examination: There shall be no supplementary examination

8.10 Re-Verification -There shall be provision of retotaling of the answer sheets, candidate shall be permitted to apply for recounting/retotaling of theory papers within 8 days from the date of declaration of results.

8.11 Scheme of University Exam Theory PG Program: General structure / patterns for setting up question papers for Theory / Practical courses, their evaluation weightages for PG programs are given in the following tables.

8.12 Theory Question Paper Pattern for Core Subjects in University Examinations

Under CBCS - 60Marks

Question Type	**No. of Questions**	**Questions to be Answered**	**Questions X Marks**	**Total Marks**
Brief Answer Questions	7	6	1X 10	60

General Instructions (Theory):

A. Time duration of each Theory Paper will be of Three (3) Hrs .
B. Total Marks of each Theory Paper will be 60 Marks

8. 13 Practical Question Paper Pattern For University Examinations Under CBCS - 50 Marks

Exercise	**Description**	**Marks**
Q No 1	Practical exercise – 1	1 x15=15 M
Q No 2	Station exercise	5x5M=25 M
Q No 3	VIVA	10 M
		Total = 50 M

General Instructions (Practical):

A. All the students have to remain present at the examination center 15 minutes before the scheduled time for examination.

B. Students have to carry with them certified journal, I-card or examination receipt, and other necessary requirements for examination.

C. Candidate should not leave the practical hall without the permission of examiner.

D. Use of calculator is allowed but the use of mobile phones is strictly prohibited.

E. The candidate has to leave the laboratory only after the submission of all the answer sheets of the exercises performed.

8.14 Internal examination pattern (Theory) : 30marks

Question type	No. of questions	Questions to be answered	Question X marks	Total marks
Brief Answer Questions	4	3	1X10	30

8.15 Breakup of theory IA calculation for 20 marks

Internal exam (Department -30 Marks)	15 marks
Seminar	5 marks
	Total = 20 M

8.16 Internal Examination Pattern (Practical): 30 Marks

Practical Exercise	10marks
Station Exercise	10 marks
Viva	10 marks
Total practical	30 Marks

8.17 Breakup of practical IA calculation:

Internal exam (Department -30 Marks)	15 marks
Journal	5 marks
	Total = 20 M

Internal Assessment marks should be submitted to the university by respective departments at least 15 days prior to onset of university examination.

9. Submission of Protocol of Dissertation: Students should undergo Online Course of Research Methodology (MCI- PG) before submitting the protocol for their Dissertation.

MGM Institute of Health Sciences, Navi Mumbai

MGM MEDICAL COLLEGE

Academic Year 2019 – 2020

Academic Calendar For M.Sc. (3 Years) Medical Courses

(Anatomy, Physiology, Biochemistry, Pharmacology, Microbiology)

SCHEDULE OF ACTIVITY	DATES
Commencement of First Semester	01.08.2019
Receipt of completed Eligibility forms at MGMIHS from Respective college without late fees Receipt of completed Eligibility forms at MGMIHS from Respective college with late fees (Only for new admission)	On or before 30.10.2019 On or before 30.11.2019
Commencement of Internal Exam	3rd Week of November 2019
Winter Vacation for Staff	16.10.2019 to 15.11.2019
Notification of First Semester University Examination	As per MGMIHS
Commencement of First Semester University Examination	1 Week of January 2020
Conclusion of respective semesters	Last week of January 2020
Declaration of final Result	As per MGMIHS
Commencement of Second Semester	1st Week of February 2020
Commencement of Internal Examination	3rd Week of April 2010
Allotment of Guide for Dissertation	On or Before 30 th April 2020
Notification of Second Semester University Examination	As per MGMIHS
Summer Vacation for staff	01.05.2020 to 10.06.2020
Commencement of Second Semester University Examination	1 Week of July 2020
Conclusion of Second Semester	15 July 2020
Declaration of final Result	As per MGMIHS
Commencement of Next Academic Session	16.07.2020

MGM Institute of Health Sciences, Navi Mumbai

MGM MEDICAL COLLEGE

Academic Year 2019 – 2020

Academic Calendar For M.Sc. (3 Years) Medical Courses

(Anatomy, Physiology, Biochemistry, Pharmacology, Microbiology

SCHEDULE OF ACTIVITY	DATES
Commencement of Third Semester	16.07.2020
Submission of Protocol for Scientific and Ethical Approval	14.08.2020
Commencement of Internal Exam	3rd Week of November 2020
Winter Vacation for Staff	16.10.2020 to 15.11.2020
Notification of First and Third Semester University Examination	As per MGMIHS
Commencement of Third Semester University Examination	1 Week of January 2021
Conclusion of respective semesters	15 January 2021
Declaration of final Result	As per MGMIHS
Commencement of Fourth Semester	3rd week of January 2021
Commencement of Internal Examination	2nd Week of April 2021
Notification of Fourth Semester University Examination	As per MGMIHS
Summer Vacation for staff	01.05.2021 to 10.06.2021
Commencement of Fourth Semester University Examination	3rd Week of June 2021
Conclusion of Respective Semesters	30 June 2021
Declaration of final Result	As per MGMIHS
Commencement of Next Academic Section	1.07.2021

MGM Institute of Health Sciences, Navi Mumbai

MGM MEDICAL COLLEGE

Academic Year 2019 – 2020

Academic Calendar For M.Sc. (3 Years) Medical Courses

(Anatomy, Physiology, Biochemistry, Pharmacology, Microbiology

SCHEDULE OF ACTIVITY	DATES
Commencement of Fifth Semester	1.07.2021
Commencement of Internal Exam	3rd Week of November 2021
Winter Vacation for Staff	16.10.2021 to 15.11.2021
Notification of First, Third and Fifth Semester University Examination	As per MGMIHS
Commencement of Fifth Semester University Examination	First Week of December 2021
Conclusion of Fifth semester	Second Week of December 2021
Declaration of final Result	As per MGMIHS
Commencement of Sixth Semester	16 December 2021
Submission of Dissertation	31 March 2022
Commencement of Internal Examination	2nd Week of April 2022
Notification of Fourth Semester University Examination	As per MGMIHS
Summer Vacation for staff	01.05.2022 to 10.06.2022
Commencement of Sixth Semester University Examination	1st June 2022
Conclusion of Respective Semesters	30 June 2022
Declaration of final Result	As per MGMIHS