

2026
2027

Baqai Medical College
Integrated Curriculum
SPIRAL I
1st YEAR MBBS
Study guides



BAQAI MEDICAL COLLEGE
BAQAI MEDICAL UNIVERSITY

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The landscape of medical education is evolving rapidly, embracing a shift from teacher-centered to student-centered learning approaches across undergraduate and postgraduate levels. In response to these advancements, this study guide for the integrated modular system has been meticulously crafted to align with these changes, following the SPICES model of curriculum development.

1. **Student-centered Approach:** The course organization, content, and activities are predominantly structured around student engagement and empowerment.
2. **Problem-Oriented Learning:** Case-based learning is integrated into our modules to foster problem-solving skills among students.
3. **Explicit Integration:** Basic sciences content is seamlessly integrated with pre-clinical and clinical subjects to provide a comprehensive understanding of medical concepts.
4. **Community Engagement:** Field visits to satellite clinics and community healthcare centers offer students firsthand exposure to community-related health issues.
5. **Elective Opportunities:** Students are encouraged to pursue electives within our institution and other institutes to broaden their learning experiences.
6. **Structured Program:** Our curriculum unfolds systematically, starting from foundational medicine concepts and encompassing all facets of medical sciences in Spiral integration.

Therefore, this study guide serves as a comprehensive resource, offering content-related information, guidance on learning strategies, curriculum management, and outlines of student activities. It is designed to support the undergraduate MBBS program in a multidimensional manner, facilitating holistic learning and development.

Baqai Medical University



To evolve as a nucleus for higher learning with a resolution to be socially accountable, focused on producing accomplished health care professionals for services in all spheres of life at the national and global level.

University is dedicated to the growth of competencies in its potential graduates through dissemination of knowledge for patient care, innovation in scholarship, origination of leadership skills, use of technological advancements, and providing noteworthy contributions to society through commendable services.

Baqai Medical College



The mission of the Baqai Medical College is to produce medical graduates who are responsible and accomplished individuals and have skills for problem-solving, clinical judgment, research, and leadership for a medical practice at the international level and are also aware of the health problems of the less privileged rural and urban population of Pakistan.

OUTCOMES OF THE MBBS PROGRAM

By the end of the five-year MBBS Program, the Baqai Medical College Graduate will be able to:

Write focused history, perform physical examination, formulate a diagnosis, and management plan for common health problems.

Use knowledge of basic and clinical sciences for patient care.

Apply evidence-based practices for protecting, maintaining, and promoting the health of the individuals, families, and community.

Identify the emerging health issues, review literature, and conduct evidence-based research.

Demonstrate leadership and communication skills as per situational needs for quality health service.

Demonstrate lifelong learning with empathy and cultural sensitivity in health care.



POLICIES AND PROCEDURES

Code of Conduct and Maintenance of Discipline of Students Regulations Under section 25(e) BMU Act.1996

All University students shall be under the full disciplinary control of the University. No students shall be allowed to participate in politics. The action against the act of indiscipline shall include fines, debarring from attending class, and cancellation of admission, depending on the gravity of indiscipline.

The following shall constitute acts of indiscipline for which action may be taken against the student or students:

- (a) Breach of any rule of public morals, such as:
 - Use of indecent or filthy language;
 - Use of immodest dress;
 - Use of undesirable remarks or gestures; and
 - Disorderly behavior, such as shouting, abusing, quarrelling, fighting and insolence.
- (b) Defiance of authority
- (c) Action, defamatory of and derogatory to Islam
- (d) Immorality
- (e) Being found under the effect of an intoxicant or misuse of drugs, including marijuana, LSD, dope, and other opioids.
- (f) False personation or giving false information or willful suppression of information, cheating, or deceiving.
- (g) Inciting or staging a walk-out, a strike, or an unauthorized procession.
- (h) Shouting of slogans derogatory to the prestige of the University or the reputation of its officers or teachers.
- (i) Visiting without a pass place which are not to be visited without a pass.
- (j) Visiting places declared out of bounds for students.

Every student must carry his / her Identity Card, which will be open to examination and will be demanded at the time of entrance to the various University Faculties and functions.

No student will be admitted to the facilities of the library, transport, or the canteen unless he /she is in possession of the Identity Card

INTRODUCTION TO THE INTEGRATED CURRICULUM (SPIRAL- I) FOR 1st YEAR MBBS

Welcome to the Integrated Curriculum. **SPIRAL-I** represents the foundational phase of the MBBS curriculum, implemented during the first two years of medical education. It includes the core basic science disciplines Anatomy, Physiology, and Biochemistry, which are taught through an integrated, organ-system–based approach. This curriculum is designed to provide students with a strong scientific foundation by linking the structure, function, and biochemical processes of the human body. Through vertical integration of these subjects, students develop a comprehensive understanding of normal body mechanisms and the basic principles underlying health and disease.

The SPIRAL-I curriculum also emphasizes the integration of basic sciences with preclinical and early clinical concepts, allowing students to appreciate the clinical relevance of foundational knowledge from the beginning of their medical training. By organizing learning around organ systems and encouraging collaboration among different disciplines, the curriculum promotes critical thinking, conceptual understanding, and application of knowledge. This integrated approach prepares students for the subsequent phases of the MBBS program and supports the development of competent and well-prepared future healthcare professionals.



Integration is Key

INTRODUCTION OF THE INTEGRATED MODULES

INTEGRATED CURRICULUM - SPIRAL I

1ST YEAR MBBS

S. No	Modules	Duration
1 st Module	FOUNDATION MODULE	6 Weeks
2 nd Module	MUSCULOSKELETAL MODULE	8 Weeks
3 rd Module	BLOOD MODULE	5 Weeks
4 th Module	CARDIOVASCULAR MODULE	6 Weeks
5 th Module	RESPIRATORY MODULE	6 Weeks
6 th Module	GASTROINTESTINAL MODULE	5 Weeks

TEACHING FACULTY FOR 1ST YEAR MBBS

DEPARTMENT OF ANATOMY		
<i>Name</i>	<i>Designation</i>	<i>Days /Time</i>
Prof. Dr. Syed Inayat Ali drinayat@baqai.edu.pk	Chairman & Professor	Monday 9:30-10:30
Dr. Tayyaba Kazmi drtayyabakazmi@baqai.edu.pk	Associate Professor	Tuesday 10:30-11:30
Dr Saba Akram sabaakram@baqai.edu.pk	Assistant Professor	Wednesday 11:30-12:30
Dr Ayesha Jameel drmrizwan@baqai.edu.pk	The lecturer	Monday –Wednesday 2:00-4:00
DEPARTMENT OF PHYSIOLOGY		
<i>Name</i>	<i>Designation</i>	<i>Days /Time</i>
Prof. Dr. Qamar Aziz drqamaraziz@baqai.edu.pk	Chairman & Professor	Monday 9:30-10:30
Dr Adnan Ahmed dradnanahmed@baqai.edu.pk	Associate Professor	Tuesday 10:30-11:30
Dr M.Ali muhammadali@baqai.edu.pk	Assistant Professor	Wednesday 11:30-12:30
Dr Rizwana Yaseen rizwanayaseen@baqai.edu.pk	Senior The lecturer	Monday –Wednesday 2:00-4:00

DEPARTMENT OF BIOCHEMISTRY		
Name	Designation	Days /Time
Prof.Dr Asher Fawwad asherfawwad@baqai.edu.pk	HOD & Professor	Monday 9:30-10:30
Dr.Kahkashan Parveen dr.kahkashan@baqai.edu.pk	Associate Professor	Tuesday 10:30-11:30
Dr Iffat Ara Aziz iffataziz@baqai.edu.pk	Assistant Professor	Wednesday 11:30-12:30
Dr. Benish Zafar benishzafar@baqai.edu.pk	Assistant Professor	Monday 10:30-11:30
Dr Farhan Sabir farhansabir@baqai.edu.pk	The lecturer	Monday –Wednesday 2:00-4:00
DEPARTMENT OF PATHOLOGY		
Name	Designation	Days /Time
Dr.Rozina Khan rozkh9@gamil.com	The lecturer	Tuesday 10:30-11:30
DEPARTMENT OF PHARMACOLOGY		
Name	Designation	Days /Time
Dr Sehrish Mehmood sehrishmehmood@baqai.edu.pk	Assistant Professor	Monday 9:30-10:30
DEPARTMENT OF COMMUNITY MEDICINE		
Name	Designation	Days /Time
Dr. Masooda Fatima masoodafatima@baqai.edu.pk	Associate Professor	Monday 9:30-10:30

DEPARTMENT OF SURGERY & ALLIED		
Name	Designation	Days /Time
Dr. Sidra Abbass drsindraabbass@baqai.edu.pk	Associate Professor	Tuesday 9:30-10:30
DEPARTMENT OF GYNECOLOGY & OBSTETRICS		
Name	Designation	Days /Time
Dr. Nikhat Ahsan nikhatahsan@baqai.edu.pk	Associate Professor	Monday 9:30-10:30
DEPARTMENT OF MEDICAL EDUCATION		
Name	Designation	Days /Time
Dr. Syeda Saima Qamar saima.qamar@baqai.edu.pk	Deputy Director DME, BMC Assistant Professor	Tuesday 9:30-10:30
DEPARTMENT OF PEDIATRIC MEDICINE		
Name	Designation	Days /Time
Dr. Sidra Saleem sidrasaleem@baqai.edu.pk	Senior Registrar	Wednesday 9:30-10:30
DEPARTMENT OF RESEARCH		
Name	Designation	Days /Time
Maria Rahim maria.rahim@baqai.edu.pk	Assistant Professor	Monday 9:30-10:30

TEACHING METHODOLOGIES



Interactive The lectures



Case-based Learning



Student's Presentations



Self-directed learning



Small group discussions



Practical demonstration

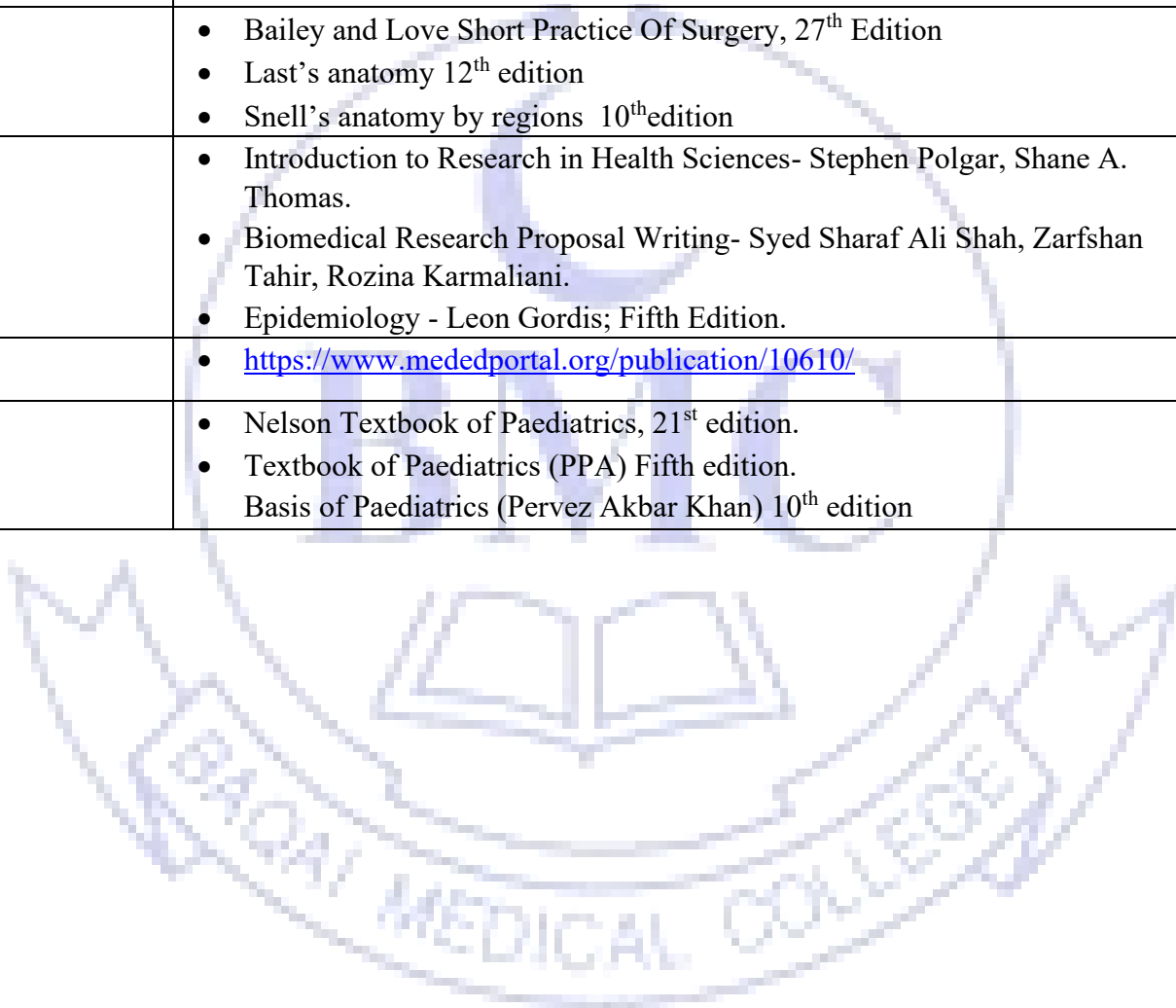


SUGGESTED READING BOOKS

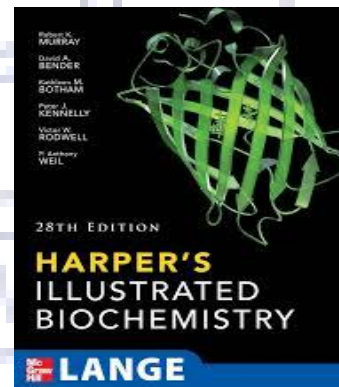
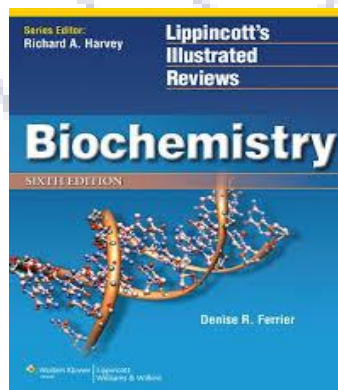
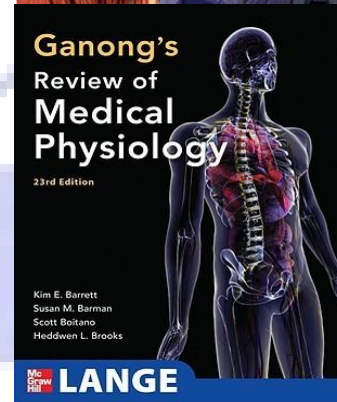
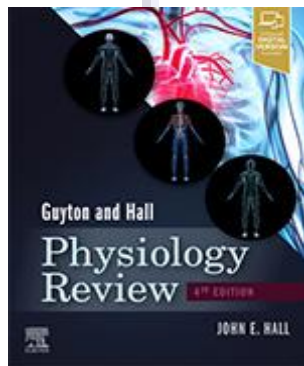
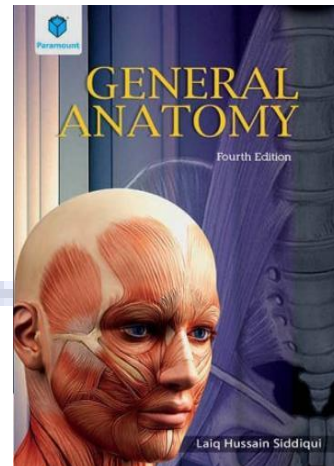
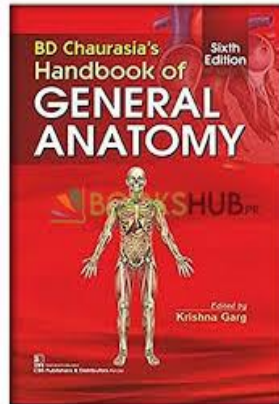
REFERENCES BOOKS AND OTHER READING RESOURCES

Gross Anatomy	<ul style="list-style-type: none"> • Laiq Hussain Handbook of GENERAL ANATOMY (9TH Edition) • Snell's Clinical Anatomy by Regions (11th Edition) • Grey's Anatomy (42nd Edition) • KLM Clinically Oriented Anatomy (11th Edition) • Netter Atlas of Human Anatomy
Embryology	<ul style="list-style-type: none"> • Langman's Embryology(15TH Edition)
Histology	<ul style="list-style-type: none"> • Laiq Hussain Histology(9th Edition)
Physiology	<ul style="list-style-type: none"> • Guyton and Hall. Textbook of Medical Physiology, 16th Edition. • Ganong's Review of Medical Physiology, 27th Edition.
Biochemistry	<ul style="list-style-type: none"> • Lippincott Illustrated Reviews: Biochemistry.(9th Edition) • Harper's Illustrated Biochemistry.(33rd Edition) • Textbook of Medical Biochemistry by MN Chatterjee & Rana Shinde.(11th Edition) • DM Vasudevan – Textbook of Biochemistry. (11th Edition)
Pathology	<ul style="list-style-type: none"> • Robin`sBasicPathology-11thEdition
Pharmacology	<ul style="list-style-type: none"> • <u>Essential</u> • Bertram G. Katzung. Basic and Clinical Pharmacology, 16th Edition. 2017. • Katzung and Trevor's pharmacology Examination and Board Review 14th Edition 2015. • <u>Recommended</u> • Lippincott's illustrated review of Pharmacology. 8th Edition. 2015.
Islamiyat	<ul style="list-style-type: none"> • Hameed ullah Muhammad, "Emergence of Islam" , IRI, Islamabad, "Muslim Conduct of State" and "Introduction to Islam". • Hussain Hamid Hassan, "An Introduction to the Study of Islamic Law" leaf Publication Islamabad, Pakistan. • Abdul QayyumNatiq, "Sirat-E-Mustaqim. • Farkhanda Noor Muhammad, "Islamiyat". • Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001).

Community Medicine	<ul style="list-style-type: none"> • Ilyas M, Public Health and Community Medicine, 7th Edition, Karachi, Pakistan, Time Publisher, 2007. • Maxcy-Rosenau-Last, public Health and Preventive Medicine, 13th Edition, USA, Prentice-Hall International Inc, 1992. • K.Park, Preventive and Social Medicine, 20th Edition, Jabalpur (India), M/s Banarsidas Bhanot, Publisher, 2009.
Medicine	<ul style="list-style-type: none"> • Davidson`s Principles and Practice of Medicine-22nd Edition
Clinical Examination	<ul style="list-style-type: none"> • Talley and O'Connor's Clinical Examination-6th Edition
Surgery	<ul style="list-style-type: none"> • Bailey and Love Short Practice Of Surgery, 27th Edition • Last`s anatomy 12th edition • Snell`s anatomy by regions 10thedition
Research	<ul style="list-style-type: none"> • Introduction to Research in Health Sciences- Stephen Polgar, Shane A. Thomas. • Biomedical Research Proposal Writing- Syed Sharaf Ali Shah, Zarfshan Tahir, Rozina Karmaliani. • Epidemiology - Leon Gordis; Fifth Edition.
DME	<ul style="list-style-type: none"> • https://www.mededportal.org/publication/10610/
PAEDS	<ul style="list-style-type: none"> • Nelson Textbook of Paediatrics, 21st edition. • Textbook of Paediatrics (PPA) Fifth edition. • Basis of Paediatrics (Pervez Akbar Khan) 10th edition



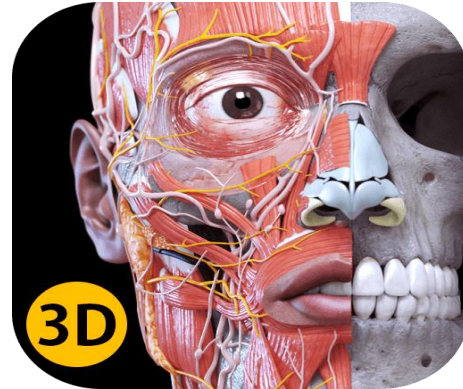
SUGGESTED READING BOOKS



SUGGESTED WEBSITES & SEARCH ENGINES



<https://www.medscape.com>



[ANATOMY 3D ATLAS](#)



<https://pubmed.ncbi.nlm.nih.gov>



<https://scholar.google.com>



<https://medlineplus.gov>



<https://medicine.nus.edu.sg/pathweb>

ASSESSMENT METHODS

1. *Formative Assessment*

- Assignment
- Quiz (face-to-face or online)
- Student Presentation
- Class participation in small group discussions and case-based learning sessions

1st Year MBBS Students are requested to maintain their practical journals for formative assessment.

2. *Summative Assessment*

• *Modular Exam:*

As per the Assessment Policy of Baqai Medical College, Version 2.01 2025, an integrated modular exam will be conducted at the end of each module, including all subjects of basic medical sciences. The Integrated Module Examination will be conducted using the following assessment methods:

- MCQ
 - SEQ
 - OSPE
- *Annual Exam:*
- Internal Evaluation = 20%
 - Final Exam = 80%
- Theory: MCQs, EMQs & SEQs
Practical: Viva & OSPE



For further details, visit our website: [Policy Manual | Baqai Medical University](#)

Foundation Module

INTRODUCTION TO MODULE – I



<i>Module – I</i>	
<i>Foundation Module</i>	
	<ul style="list-style-type: none"> • Foundation Module
Duration	6 Weeks (11th February 2026 – 27 th March 2026)
Assessment Dates	30th March 2026
Assessment Pattern	MCQs, SEQs & OSPE

- The Assessment dates are tentative (Subject to change)

MODULE INTRODUCTION

The Foundation Module is the first component of the MBBS program and serves as an orientation that helps students transition from a pre-medical background to the professional medical education environment. It introduces students to the basic concepts of medical sciences, professional behavior, and effective learning strategies required for medical training. The module helps bridge the gap between fact-based learning and the integrated, system-based approach used in medical education while promoting problem-solving and critical thinking skills. Students are introduced to medical terminology, anatomical positions, and basic concepts of anatomy, physiology, and biochemistry to build a scientific foundation for later modules. It also emphasizes the values and responsibilities of the medical profession, including ethics, professionalism, empathy, and the doctor-patient relationship. Early exposure to healthcare settings and team-based activities further develop teamwork, leadership, and understanding of the healthcare system. Overall, the Foundation Module prepares first-year MBBS students with the essential knowledge, skills, and professional attitudes required for their medical education.

MODULE LEARNING OUTCOMES

At the end of this module, the students of the 1st year MBBS will be able to:

1. Integrate fundamental concepts of human body structure and function through anatomy, physiology, biochemistry, histology, and embryology.
2. Correlate molecular, cellular, and genetic mechanisms with physiological processes and early pathological changes.
3. Relate foundational biomedical knowledge to clinical contexts by linking basic sciences with pathology, medicine, surgery, orthopedics, and community medicine.
4. Appreciate principles of professionalism, ethics, communication, patient safety, and teamwork in health care.

S.NO	Topics with learning objectives	Subject	Teaching Strategy	Duration	Assessment
1	<p>Anatomy introduction</p> <p><u>At the end of the session, the First Professional M.B.B.S. students will be able to:</u></p> <ul style="list-style-type: none"> • Define Anatomy & branches of Anatomy • Discuss the different aspects related to the subject of Anatomy 	Anatomy	Lecture	60 min:	MCQS, SEQS
2	<p>Biochemistry introduction</p> <p><u>At the end of the session, First Professional M.B.B.S. students will be able to:</u></p> <ul style="list-style-type: none"> • Define Biochemistry • Discuss the different aspects related to the subject of Biochemistry, including: (teaching & exams). • Discuss The Role And Implication Of Biochemistry In Medicine 	Biochemistry	Lecture	60 min:	MCQS, SEQS
3	<p>INTRODUCTION TO PHYSIOLOGY:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define Physiology & its history. • List the branches of physiology. • Differentiate between physiology, biochemistry & anatomy. • Describe the importance of physiology in human body. 	Physiology	Lecture	60 mins	MCQS, SEQS
4	<p>INTRODUCTION TO PATHOLOGY</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define Pathology. 	Pathology	Lecture	60 min	MCQ

	<ul style="list-style-type: none"> Describe the different Subdivisions of Pathology. Define disease and its development & classification. Discuss the components of disease process with examples. 				
5	<p>INTRODUCTION TO COMMUNITY MEDICINE</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define Community Medicine Discuss Disease, Health, Illness and Well-Being 	Community Medicine	Lecture	60 min	MCQ
6	<p>INTRODUCTION OF PHARMACOLOGY</p> <p><u>At the end of session, the First Professional M.B.B.S. student will be able to</u></p> <ul style="list-style-type: none"> Define Pharmacology Overview of pharmacology and its branches 	Pharmacology	Lecture	60 min	MCQ
7	<p>INTRODUCTION OF SURGERY</p> <p><u>At the end of session, the First Professional M.B.B.S. student will be able to</u></p> <ul style="list-style-type: none"> Define surgery 	Surgery	Lecture	60 min	MCQ
8	<p>INTRODUCTION TO MEDICINE</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Summarize details of general medicine and its allied subjects Describe the significance of subject of medicine in clinical practice Associate the relation of basic health sciences with subject of medicine 	Medicine	Lecture	60 mins	MCQ

	<ul style="list-style-type: none"> Explain importance of studying medicine in clinical practice 				
9	<p>POSITIONS AND PLANES</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Differentiate among the various positions and planes of the body 	Anatomy	Lecture	60 mins	MCQS, SEQS
10	<p>ANATOMICAL TERMINOLOGIES-I</p> <p><u>At the end of the session, First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define the different anatomical terms Explain terms related to embryology 	Anatomy	Lecture	60 mins	MCQS, SEQS
11	<p>INTRODUCTION TO MACROMOLECULES</p> <p><u>At the end of the session, First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define and classify carbohydrates with examples of each group. Enumerate the biomedical importance of each type of carbohydrate.. Identify the sugar derivatives of biological importance: deoxysugars, amino sugars, amino sugar acids & glycosides. List the disaccharides of biological importance. List the biomedical importance of oligosaccharides. Identify the function of oligosaccharides in cell 	Biochemistry	Lecture	60 minutes	MCQS, SEQS

	membranes				
12	<p>TERMS OF MOVEMENT</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define the movements occurring at various joints of body (flexion, extension, abduction, adduction, rotation) Identify movements occurring at specific joints (pronation, supination, inversion, eversion) Identify the planes at which movements occur 	Anatomy	SGT	60 mins	MCQ
13	<p>LEVEL OF ORGANIZATION OF THE HUMAN BODY:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define Cell. Describe the functional organisation of a cell. List the level of organisation from chemical to human body. 	Physio	Lecture	60 mins	MCQS, SEQS
14	<p>CELL I</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe the phospholipid bilayer and its composition. Explain the Fluid Mosaic Model of cell membrane. Define cytoplasm. Discuss components and functions of cytoplasm. Describe the structure of nuclear membrane. Explain the component of nucleus and different types 	Physio	Lecture	60 mins	MCQS, SEQS

	of chromatin material.				
15	<p>CELL <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Identify the cell & various cell organelles. Identify the structure of cell membrane. Define Cytoskeleton Describe the composition and functions of cytoskeleton. Enumerate the types, distribution, and functions of cytoskeleton. Describe the details of cytoplasmic filaments and microtubules 	Histology	Lecture	60 mins	MCQS, SEQS,
16	<p>CELL STRUCTURE AND CELL MEMBRANE: <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Categorize the components of a cell. Differentiate between protoplasm, cytoplasm & the nucleoplasm. State the arrangement of cell membrane. List the channels present in cell membrane with their functions. 	Physio	Lecture	60 mins	MCQS, SEQS
17	<p>CELL DIVISION <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> List steps of cell division during mitosis Explain the significance of mitosis. 	Embryology	Lecture	60 mins	MCQS, SEQS

	<ul style="list-style-type: none"> Define Meiosis List the steps of meiosis. Differentiate first and second meiotic divisions. State the phases of meiotic divisions. Justify the importance of meiosis in both sexes. Differentiate between mitosis and meiosis 				
18	<p>GENETIC DISORDER (CHROMOSOMAL)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe the chromosomal abnormalities Discuss chromosomal abnormalities (structural & numeral) 	Embryology	Lecture	60 mins	MCQS, SEQS
19	<p>OOGENESIS</p> <p>At the end of the session, the First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> Define gametogenesis (oogenesis & Spermatogenesis) Describe the process of oogenesis. Differentiate between primary and secondary oocytes. Compare the male and female gametes. 	Anatomy	Lecture	60 mins	MCQS, SEQS
20	<p>SPERMATOGENESIS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define spermatogenesis Describe the sequence events 	Anatomy	Lecture	60 min	MCQS, SEQS

	<p>of spermatogenesis.</p> <ul style="list-style-type: none"> • Discuss the importance of mitosis & meiosis in spermatogenesis. • List the steps in spermatogenesis. • Differentiate between spermatogenesis & spermiogenesis 				
21	<p>OVARIAN CYCLE <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u> Describe the three phases of the Ovarian Cycle</p>	Anatomy	Lecture	60 min	MCQS, SEQS
22	<p>FERTILIZATION <u>At the end of session, First Professional M.B.B.S. student will be able to</u></p> <ul style="list-style-type: none"> • Explain transportation of sperm and ovum. • Define fertilization. • Discuss phases and results of fertilization • Discuss initial stages of development by the process of cleavage. • Explain the formation of blastocyst • Discuss the formation of zygote. 	Anatomy	Lecture	60 min	MCQS, SEQS
23	<p>IMPLANTATION <u>At the end of session, First Professional M.B.B.S. student will be able to</u></p> <ul style="list-style-type: none"> • Describe the process of implantation • Explain the formation of outer and inner cell masses. • Discuss ectopic pregnancy. 	Anatomy	Lecture	60 min	MCQS, SEQS

	<ul style="list-style-type: none"> List the fetal membranes. Describe the structure of amnion & chorion. Describe the formation, circulation and function of amniotic fluid. Describe the relationship of twinning (multiple pregnancies) with fetal membranes. Describe the umbilical cord (morphology, composite structures, positioning, and fate) Discuss the fate of umbilical vesicle (yolk sac) 				
24	<p>ABNORMAL IMPLANTATION OF FERTILIZED OOCYTE(EMBRYO)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define abnormal implantation. Discuss the etiopathology of abnormal implantation. List the risk factors causing abnormal implantation. Memorised the disorders caused by abnormal implantation. 	Gynae	Lecture	60 min	MCQ
25	<p><u>PLACENTAL ABNORMALITIES</u></p> <p><u>At the end of session, First Professional M.B.B.S. student will be able to</u></p> <ul style="list-style-type: none"> Differentiate syncytiotrophoblast and 	Anatomy	Lecture	60 min	MCQS, SEQS

	<p>cytotrophoblast with its microscopic appearance.</p> <ul style="list-style-type: none"> Describe the changes in the maternal endometrium with formation of decidua and decidual reaction. Describe the different types of chorionic villi. Explain the development of fetal and maternal placenta. Describe the placental circulation and barrier. Enumerate the different type of placental abnormalities. 				
26	<p>PLACENTAL ABNORMALITIES</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe various types of placental abnormalities. Describe the various functions of the placenta. Discuss each type of placental abnormalities individually and its clinical presentation 	Gynae	Lecture	60 min	MCQ
27	<p>3RD WEEK OF DEVELOPMENT I: GASTRULATION</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define gastrulation (formation of three germ layers) Discuss the development of the primitive streak & related congenital anomalies (Sacrococcygeal Teratoma) Describe the development of 	Anatomy	Lecture	60 min	MCQS, SEQS

	<p>notochordal process, notochord canal, prechordal plate and cloacal membrane.</p> <ul style="list-style-type: none"> Describe the location of the allantois and its importance. Discuss the formation of secondary and tertiary chorionic villi. <p>Describe the development of the intra-embryonic coelom.</p>				
28	<p>NEURAL TUBE DEFECTS <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define neurulation Describe briefly the events occurring in neurulation Describe briefly the formation of somites Define neural tube defects Enumerate the neural tube defects 	Anatomy	Lecture	60 MIN	MCQS, SEQS
29	<p>EMBRYONIC PERIOD ABNORMALITIES OF ORGANOGENESIS</p> <ul style="list-style-type: none"> Define embryonic period Describe folding of embryo in median and horizontal planes <p>Discuss the derivatives of each germ layers</p> <ul style="list-style-type: none"> List events with the corresponding weeks, occurring during the period <p>List the anomalies of organogenesis</p>	Embryology	Lecture	60 min	MCQS, SEQS
30	<p>FETAL PERIOD</p> <ul style="list-style-type: none"> Define fetal period Discuss the factors affecting fetal period/growth. Explain the week-by-week development of tissues and organs 	Embryology	Lecture	60 min	MCQS, SEQS

	Discuss the fetal period.				
31	<p>CELL ORGANELLES II, MITOCHONDRIA & CYTOSKELETON:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define function of mitochondria • Explain the variation in number of mitochondria in different organs. • Explain ATP production by the mitochondria. • Explain self-replication of mitochondria. • Explain chemiosmotic mechanism in ATP formation. • Name uses of ATP in three major cellular functions • Name the filaments and tubular structures in the cell. <p>Summarize the functions of microtubules in a cell</p>	Physio	Lecture	60 mins	MCQS, SEQS
32	<p>CELL ORGANELLES- i.e., GOLGI APPARATUS, LYSOSOMES AND PEROXISOMES:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • List membranous & non-membranous cell organelles. • Explain the role of each organelle in the normal functioning of a cell. • Define the function of the Endoplasmic Reticulum • Explain the functions of the 	Physio	Lecture	60 mins	MCQS, SEQS

	<p>Golgi Apparatus</p> <ul style="list-style-type: none"> Define the function of Lysosomes Define the function of Peroxisomes Define apoptosis & ageing 				
33	<p>CELLULAR ADAPTATION</p> <ul style="list-style-type: none"> Define Cellular Adaptation. Enumerate the Types of Cellular Adaptation (Hyperplasia, Hypertrophy, Atrophy, Metaplasia). Define each type with few Examples. 	Pathology	Lecture	60 min	MCQ
33	<p>ROLE OF BODY SYSTEMS IN HOMEOSTASIS:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define Homeostasis. Describe the term milieu interior. Explain the role of body systems in the maintenance of the milieu interior. 	Physio	Lecture	60 mins	MCQS, SEQS
35	<p>BONES-I:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Discuss the Classification of bones Describe the gross structure of young and adult bone. 	Anatomy	Lecture	60 mins	MCQS, SEQS
36	<p>BONES-II:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Discuss the blood supply of long bones. Explain the ossification of bone. 	Anatomy	Lecture	60 mins	MCQS, SEQS

	<ul style="list-style-type: none"> Identify the centres of ossification and their significance. Distinguish between intramembranous and endochondral ossification 				
37	<p>INTRODUCTION TO MACROMOLECULES</p> <p>Protein chemistry</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Classify proteins based on size, shape and functions Classify proteins on basis of solubility and physical properties: simple, conjugated and derived proteins 	Biochemistry	Lecture	60 mins	MCQS, SEQS
38	<p>PHYSIOLOGICAL VARIABLES IN HOMEOSTATIC COMPENSATION IN DISEASE:</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> List the names of Variables which are tightly regulated in homeostasis. List the names of Variables which are not tightly regulated in homeostasis. Explain those body's control systems which change throughout the day. Explain weight and age-related variabilities in different countries. Differentiate physiological 	Physio	Lecture	60 mins	MCQS, SEQS

	and pathological values among people of different age, sex, ethnicity, and race and understand the importance.				
39	<p>JOINTS. <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define joint. • Classify the joints based on structure (uniting material) with example. • Define a synovial joint. • List the features of synovial joint. • Classify Synovial joints based on shape of articulating surfaces and degree of mobility. • Explain the principles of innervation and blood supply of synovial joints 	Anatomy	Lecture	60 mins	MCQS, SEQS
40	<p>FEEDBACK SYSTEMS IN HOMEOSTASIS: <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Classify & define feedback mechanisms. • Differentiate between positive & negative feedback mechanisms. • Explain feed forwarding mechanism with its importance. • Discuss the role of feedback mechanism in the maintenance of Homeostasis. 	Physio	Lecture	60 mins	MCQS, SEQS
	SAMPLE COLLECTION &	PATHO	Lecture	60 mins	MCQS,

<p>41</p>	<p>TISSUE PROCESSING</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Explain the proper way of collection of specimens in pathology laboratory. • Describe the proper way of gross examination of Pathology Specimens. • Define Tissue Processing and list its various steps. • Identify the use of different Reagents & Stains in tissue processing. • Describe H & E Staining System & why Staining is done. 				<p>SEQS</p>
<p>42</p>	<p>TRANSPORT MECHANISM-I (ACTIVE TRANSPORT)</p> <p><u>At the end of the session, First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define active transport. • Differentiate between primary & secondary active transports. • Define the electrogenic nature of “Na⁺ - K⁺ Pump”. • Explain the role of “Na⁺ - K⁺ Pump” in maintaining the cell volume. 	<p>Physio</p>	<p>Lecture</p>	<p>60 min.</p>	<p>MCQS, SEQs</p>
<p>43</p>	<p>MUSCLES</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Discuss muscular tissue. • Describe the nomenclature of muscles • Classify the muscles according to their fascicular 	<p>Anatomy</p>	<p>Lecture</p>	<p>60 mins</p>	<p>MCQS, SEQs</p>

	architecture with example				
44	<p>TRANSPORT MECHANISM-II (PASSIVE TRANSPORT)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define passive transport. • List the types of passive transport across the cell membrane. • Differentiate between simple & facilitated diffusion. • Explain the factors that affect diffusion. • Define and differentiate active and passive transport mechanisms. • Discuss the role of electrogenic pump (Na⁺- K⁺ ATPase pump) • Define diffusion and list the factors that affect diffusion 	Physio	Lecture	60 mins	MCQS, SEQS
45	<p>INTRODUCTION OF MACROMOLECULES(POLYSACCHARIDES)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define homopolysaccharides. • Describe the structure of glycogen. • State the physiological importance of inulin. • <u>Describe</u> the 'Roughage' value of cellulose. • Differentiate between Dextrin and Dextran. • Discuss the use of dextran as a plasma expander in treating 	Biochemistry	Lecture	60 min	MCQS, SEQS

	hypovolemic shock				
46	<p>TISSUE PREPARATION AND STAINING</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe different stages of tissue preparation. List various types of stains. Describe Hematoxylin and Eosin (H&E) staining. 	Histology	Lecture	60 mins	MCQS, SEQS
47	<p>CELL INJURY</p> <ul style="list-style-type: none"> Define Cell Injury. List the Causes of Cell Injury. List and Define its types: Reversible & Irreversible Cell Injury. Describe the Morphological differences between the two types of Cell Injury. 	Pathology	Lecture	60 min	MCQ
48	<p>EPITHELIUM I</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe the structural details of organization of cells in epithelium and other basic tissues of body. Explain the origin of germinal layer and their derivatives. Describe the types, locations, and functions of simple epithelium. 	Anatomy	Lecture	60 mins	MCQS, SEQS
49	<p>EPITHELIUM II</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe the types, locations, and functions of stratified epithelium 	Anatomy	Lecture	60 mins	MCQS, SEQS
50	<p>INTRODUCTION TO ENZYMES AND CO-</p>	Biochemistry	Lecture	60 min	MCQS, SEQS

	<p>ENZYMES (ENZYME CHEMISTRY)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define enzymes. • Describe the catalytic activity of enzymes. • Classify enzymes according to International Union of Biochemistry (IUB). • Define co-enzymes and classify them. • Recognize the role of metal ions in enzymes (co-factors). 				
51	<p>GLANDS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define glands. • Discuss the general feature and structure of exocrine glands. • Classify exocrine glands based on number of cells, their structure & types of secretions 	Anatomy	Lecture	60 min	MCQS, SEQS
52	<p>TRANSPORT MECHANISM-III (OSMOSIS, OSMOTIC PRESSURES):</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define osmosis. • Explain the terms osmolality, osmolarity & tonicity of body fluids. • Explain the factors that affect osmosis. • Summarise the role of osmotic pressure in the transport of a substance 	Physio	Lecture	60 mins	MCQS, SEQS

	<p>across cell membrane.</p> <ul style="list-style-type: none"> State the importance of semipermeable membrane, surface tension & viscosity 				
53	<p>COATS AND VESICULAR TRANSPORT</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define vesicular transport. Differentiate between endo & exocytosis. Summarise the mechanism of other vesicular transport. 	Physio	Lecture	60 mins	MCQS, SEQS
54	<p>INTRODUCTION TO MACROMOLECULES lipids chemistry</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define and classify lipids according to Bloor's criteria. List the derived lipids of biological importance. List the simple lipids of biological importance. List the compound lipids of biological importance. 	Biochemistry	Lecture	60 mins	MCQS, SEQS
55	<p>CELL RECEPTORS, 2nd MESSENGER & GROWTH FACTORS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define receptor. Classify the types of receptors. Interpret the mechanism of stimulation of receptor with the types of stimulus. Explain 2nd messenger 	Physio	Lecture	60 mins	MCQS, SEQS

	<p>system.</p> <ul style="list-style-type: none"> Define and identify the second messengers. Classify different second messengers. Explain the function with mechanism of each make the role of growth factor in cellular growth. 				
56	<p>PATHOLOGICAL TERMINOLOGIES</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define different pathological terms. Define cell death. List the two patterns of cell death. Describe necrosis and apoptosis. List examples of necrosis and apoptosis 	Patho	Lecture	60 mins	MCQ
57	<p>CELL INJURY - I</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define inflammation. List the hallmarks of inflammation. List the types of inflammation 	Patho	Lecture	60 mins	MCQ
58	<p>ENZYME INHIBITION AND FEEDBACK REGULATION (ENZYME CHEMISTRY)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define and classify enzyme inhibition. Generalize the characteristics 	Biochemistry	Lecture	60 min	MCQS, SEQS

	<p>of competitive inhibition.</p> <ul style="list-style-type: none"> • Give examples of competitive inhibition in biological system and as clinically used drugs. • Generalize the characteristics of non-competitive inhibition reversible and irreversible. • Describe feedback regulation mechanism of enzyme activity. 				
59	<p>MECHANISM OF ACTION OF ENZYMES (ENZYME CHEMISTRY)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define specificity of enzymes • classify the different types of specificity. • Describe the enzyme functions by lowering the activation energy. • Describe the Lock and Key theory and induced fit theory of the mechanism of action of enzymes. • List various factors that affect the activity of enzyme 	Biochemistry	Lecture	60 min	MCQS, SEQS
61	<p>CELLULAR ADAPTATION</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Define Cellular Adaptation • Define the following conditions with few examples for each: • Hyperplasia • Atrophy / Hypertrophy 	Patho	Lecture	60 mins	MCQ

	<ul style="list-style-type: none"> • Metaplasia / Dysplasia 				
62	<p>ACTIVITY ON TRANSPORT MECHANISM+CELL RECEPTORS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Show videos on different types of transport. • SEQ on transport mechanisms. • MCQ practice on transport mechanism and receptors. 	Physio	Lecture	60 min	MCQS, SEQS
63	<p>ENZYMES OF CLINICAL IMPORTANCE</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Enzymes used for estimation of biomolecules. • Identify important enzymes used for therapeutic purposes. • Outline the sources of enzymes: plasma derived, and cell derived. 	Biochemistry	Lecture	60 min	MCQS, SEQS
64	<p>OVERVIEW OF DRUG RECEPTORS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Explain major types of drug receptors with examples. • Explain signal transduction pathway. 	Pharma	Lecture	60 mins	MC
65	<p>CIRCULATORY SYSTEM-1</p> <p>At the end of the session, the first professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Classify the circulatory system • Define the cardiovascular 	Anatomy	Lecture	60 min	MCQS, SEQS

	<p>system and its main components: blood, heart, and blood vessels.</p> <ul style="list-style-type: none"> • Describe the different pathways of the circulatory system, including systemic and pulmonary circulations • Classify the blood vessels and capillaries • Define anastomosis 				
66	<p>CIRCULATORY SYSTEM-II At the end of the session, the first professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Define the lymphatic system • Describe the components of the lymphatic system • List the lymphoid organs • Describe the production and drainage of lymph 	Anatomy	Lecture	60 min	MCQS, SEQS
67	<p>NERVOUS SYSTEM- I: SOMATIC NERVOUS SYSTEM AND TYPICAL SPINAL NERVE. <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • List the basic divisions of Nervous system. • Define the various components of Central and Peripheral nervous systems (CNS and PNS) • Describe the structure of Neuron. • Classify neurons on the basis of number of processes and length of fibers. • Define a nerve and its coverings. • Differentiate between myelinated and unmyelinated 	Anatomy	Lecture	60 min	MCQS, SEQS

	<p>fibers.</p> <ul style="list-style-type: none"> List various types of Neuroglia. State their functions. Define a spinal nerve. Enumerate the spinal nerves in different regions. Identify their location and site of emergency. Identify various components of a typical spinal nerve. Describe the fate of rami. Describe the distribution of gray rami. 				
68	<p>INTERCELLULAR COMMUNICATIONS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define intercellular communication. Describe the process of intercellular communication. List cell adhesion molecules. Classify the types of cellular connections. List and describe the ways by which cells communicate with each other. 	Physio	Lecture	60 mins	MCQS, SEQS
69	<p>NERVOUS SYSTEM-II: AUTONOMIC NERVOUS SYSTEM (ANS)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe the anatomical components of ANS. Differentiate between sympathetic and parasympathetic systems 	Anatomy	Lecture	60 min	MCQS, SEQS

	based on gross structure and distribution				
70	<p>CLINICAL HISTORY TAKING</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe biodata of the patient who approach the physician to get treated Discuss basic units of clinical history required to be asked from patient or attendants Recognize significance of clinical history in diagnosis and management of diseases 	Medicine	Lecture	60 min	MCQ
71	<p>CLINICAL HISTORY TAKING</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Explain the role of history taking in diagnosing surgical conditions. Explain the basic steps of history taking in surgery. Describe the sequence of conducting clinical interview from surgical patient. Explain the importance of eliciting the chief complain, focusing the history of presenting complain and a thorough systemic review. 	Surgery	Lecture	60 min	MCQ
72	<p>TYPES OF INTERCELLULAR COMMUNICATIONS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Categorize intercellular communication. Explain the function of each. 	Physio	Lecture	60 mins	MCQS, SEQS

73	<p>CAMS & CELLS CONNECTIONS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Name the cell adhesion molecules. Categorize the cellular connections. List the importance of intercellular connections. 	Physio	Lecture	60 mins	MCQS, SEQS
74	<p>CELL JUNCTIONS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define cell junction. Name the junctions along the lateral and basal surfaces of cells. Discuss the structure and functions of the five main types of cell junction. List the sites of distribution & components of junctional complex. 	Anatomy	Lecture	60 min	MCQS, SEQS
75	<p>LOCOMOTION OF CELLS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define amoeboid movement. Define Ciliary movement. Name those cells which exhibit amoeboid movements. Explain the mechanism of amoeboid locomotion. Summarize Chemotaxis 	PHYSIO	Lecture	60 min	MCQS, SEQS
76	<p>CLINICAL EXAMINATION</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Recognize importance of 	Medicine	Lecture	60 min	MCQS, SEQS

	<p>clinical examination in diagnosis and treatment of patients</p> <ul style="list-style-type: none"> Summarize briefly various types of clinical examination including general physical, cardiovascular, respiratory, gastrointestinal and neurological examinations 				
77	<p>CLINICAL EXAMINATION</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Describe the rules for examining a patient Discuss the steps of examination 	Surgery	Lecture	60 min	MCQ
78	<p>INTEGUMENTARY SYSTEM</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define the term integumentary system. Discuss the functions of the skin. Differentiate between epidermis and dermis. Discuss the significance of tension lines 	Anatomy	Lecture	60 min	MCQS, SEQS
79	<p>NUCLEUS AND INTRODUCTION TO GENETICS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define nucleus. List functions of nucleus Define nuclear membrane and pores. Explain nucleoli and 	PHYSIO	Lecture	60 min	MCQS, SEQS

	<p>formation of ribosomes.</p> <ul style="list-style-type: none"> • Explain the function of genes. • Define mutation & cancer 				
80	<p>Iceberg Phenomenon</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Describe the iceberg phenomenon • Explain the natural history of disease 	Community Medicine	Lecture	60 mins	MCQ
81	<p>NUCLEOTIDES (NUCLEIC ACID CHEMISTRY)</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Describe the formation of nucleotide by esterification of sugar molecule of nucleoside with phosphoric acid group. • Differentiate between nucleosides and nucleotides. • List the various biologically important nucleotides. • List the different types of purine and pyrimidine bases that occur in a nucleotide. • Identify the purine and pyrimidine nucleus and the positions of C and N atoms present in the nucleus. • Define a nucleoside. • Describe the formation of 'glycosidic linkage' in nucleosides. 	Biochemistry	Lecture	60 min	MCQ, SEQ
82	<p>Connective Tissue</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p>	Anatomy	Lecture	60 min	MCQS, SEQS

	<ul style="list-style-type: none"> Discuss the Composition of CT Classify different types of CT 				
83	<p>LEVEL OF PREVENTION</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Classify and discuss the levels of prevention 	Community Medicine	Lecture	60 mins	MCQS, SEQS
84	<p>NUCLEIC ACID CHEMISTRY-I</p> <ul style="list-style-type: none"> Define Nucleic Acid List the different types of nitrogenous bases that occur in a nucleotide Draw the purine and pyrimidine nitrogenous nucleus and label the positions of C and N atoms present in the nucleus. List the occurrence of important minor bases in organisms. Define Nucleoside Describe the formation of glycosidic linkagec in a nucleoside. Identify the form in which a ribose/deoxyribose sugar is present in nucleoside 	Bio	Lecture	60 min	MCQS, SEQS
85	<p>NUCLEIC ACID CHEMISTRY-II</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> Define Nucleotide Describe the formation of nucleotide by esterification of sugar molecule of nucleoside with phosphoric acid group Draw a table of different types of nucleotides with 	Bio	Lecture	60 min	MCQS, SEQS

	<p>their respective bases/sugar/phosphoric acid</p> <ul style="list-style-type: none"> • Classify the nucleotides into various groups • List the important functions of Adenosine and Guanosine nucleotide in the body 				
8 6	<p>NUCLEIC ACID CHEMISTRY-III</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • List the important functions of Uridine and CYtidine nucleotides in the body • Identify the important of certain synthetic analogues of nucleotides used as chemotherapeutic agents. 	Bio	Lecture	60 min	MCQ, SEQ
8 7	<p>Introduction to Family Medicine</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Discuss Role of Family Medicine Specialty/General Practice in healthcare system • Discuss the Components of a Healthcare System • Role of a Family Medicine/General Practitioner in a community. 	FAMILY MEDICINE	Lecture	60 min	MCQS
8 8	<p>Introduction to Consultation Skills</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Describe a Consultation • Discuss components of a Consultation 	FAMILY MEDICINE	Lecture	60 min	MCQS

BIOCHEMISTRY PRACTICALS/ LAB:

S.NO	Topics with learning objectives	Subject	Teaching Strategy	Duration	Venue	Assesmet
1	<p>MOLISCH'S TEST (DETECTION OF CARBOHYDRATES PRACTICAL)</p> <p>At the end of session, First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Detect presence of carbohydrate in the given sample of experiment by Molisch's test • Describe the principle of the reaction taking place in the experiment. 	Biochemistry	Practical	120 minutes	Biochemistry Lab, 1st Floor, Block A	OSPE
2	<p>IODINE TEST (DETECTION OF CARBOHYDRATES PRACTICAL)</p> <p>At the end of session, First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Detect the presence of polysaccharide in the given sample by iodine test. • Describe the principle used and name the reagents used 	Bio	Practical	120 minutes	Biochemistry Lab, 1st Floor, Block A	OSPE
3	<p>BENEDICT'S TEST</p> <p>At the end of session, First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Recall the difference between reducing and non-reducing sugars. • Detect the presence of 	Bio	Practical	120 minutes	Biochemistry Lab, 1st Floor, Block A	OSPE

	<p>reducing sugars in the given</p> <ul style="list-style-type: none"> • sample by Benedicts test. • Describe the principle of the reaction. • Differentiate between reducing monosaccharide and reducing disaccharide 					
4	<p>BARFOEDS TEST At the end of session, First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Detect the presence of reducing monosaccharides in the given solution by Barfoed's test • Describe the principle of the reaction. 	Biochemistry	Practical	120 minutes	Biochemistry Lab, 1st Floor, Block A	OSPE
5	<p>SELIWANOFF'S TEST <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Identify the difference between keto and Aldo sugar and detect the presence of these sugars by the Selivanoff test. • Describe the principle of the reaction. 	Biochemistry	Practical	120 minutes	Biochemistry Lab, 1st Floor, Block A	OSPE
6	<p>OSAZONE TEST <u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <ul style="list-style-type: none"> • Identify the specific reducing sugar by the phenyl hydrazine test 	Biochemistry	Practical	120 minutes	Biochemistry Lab, 1st Floor, Block A	OSPE

	<p>via formation of characteristic osazone crystals.</p> <ul style="list-style-type: none"> Identify the type of crystals formed by different sugars 					
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PYSIOLOGY PRACTICALS/LAB:

S.NO	Topics with learning objectives	Subject	Facilitator	Teaching Strategy	Duration	Assessment
1.	<p>INTRODUCTION AND SIGNIFICANCE OF PHYSIOLOGY</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <p>Introduce Dept. of Physiology Explain the importance of Physiology with the help of examples of normal BP, ECG, functions of insulin & upper & lower motor neurons</p>	Physiology	Dr. M Ali	Practical	120 minutes	OSPE
2.	<p>INTRODUCTION OF PHYSIOLOGY PRACTICALS</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <p>Introduce Physiology practical with relevant instruments. Introduce hematology practical with relevant apparatus</p>	Physiology	Dr. M Ali	Practical	120 minutes	OSPE
3.	<p>STUDY OF THE MICROSCOPE</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be</u></p>	Physiology	Dr. M Ali	Practical	120 minutes	OSPE

	<p>able to.</p> <p>Demonstrate introduction, history, magnification & resolving power of microscope.</p> <p>Describe parts of microscope & their functions</p> <p>Arrange practice for students to identify different parts of microscope</p>					
4.	<p>STUDY OF KYMOGRAPH</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <p>Demonstrate different types of kymograph & their uses.</p> <p>Identify different parts of student's kymograph & recall their functions</p>	Physiology	Dr. M Ali	Practical	120 minutes	OSPE
5.	<p>INTRODUCTION TO POWER LAB</p> <p><u>At the end of the session, the First Professional M.B.B.S. student will be able to.</u></p> <p>Demonstrate analogue, hardware & computer of power lab.</p> <p>Generate their own IDs on power lab:</p>	Physiology	Dr. M Ali	Practical	120 minutes	OSPE

ANATOMY PRACTICALS/LAB:

1.	<p>MICROSCOPE AND ITS PARTS. At the end of the session, the First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Identify different parts of microscope. • Demonstration of different stages of tissue preparation & staining • Identify the cell and its organelles under microscope. • Identify various types of simple epithelium under microscope. • Identify various types of stratified epithelium under microscope. • Identify various glands under microscope. 	Anatomy	Practical	120 mins	Histology lab	OSPE
2	<p>SIMPLE EPITHELIUM At the end of the session, the First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Identify the epithelial tissue • Identify slides of simple epithelium • Recognize the different types of simple epithelium 	Anatomy	Practical	120 mins	Histology lab	OSPE
3	<p>STRATIFIED EPITHELIUM At the end of the session, the First Professional M.B.B.S. student will be able to.</p> <ul style="list-style-type: none"> • Identify stratified epithelium • Recognize different types of stratified epithelium 	Anatomy	Practical	120 mins	Histology lab	OSPE
4	<p>EXOCRINE GLANDS At the end of session, First Professional M.B.B.S. student will be able to</p>	Anatomy	Practical	120 mins	Histology lab	OSPE

	Recognize the exocrine gland Identify the different parts of glands					
5	CONNECTIVE TISSUE At the end of session, First Professional M.B.B.S. student will be able to Identify connective tissue Recognize different types of cells present in CT	Anatomy	Practical	120 mins	Histology lab	OSPE



Musculoskeletal Module



Module – II

Musculoskeletal

Systems	<ul style="list-style-type: none"> Musculoskeletal System
Duration	8 Weeks (31 st March 2026 to 22 May 2026)
Assessment Dates	25 th May 2026
Assessment Pattern	MCQs, SEQs & OSPE

*The Assessment pattern and dates are tentative (Subject to change)

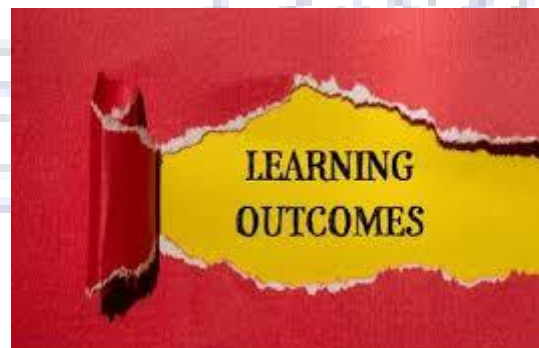
MODULE INTRODUCTION

The Integrated Musculoskeletal (MSK) Module for first-year MBBS students is designed to provide a comprehensive understanding of the structure and function of the human musculoskeletal system. It integrates the basic sciences, including anatomy, physiology, and biochemistry, with relevant aspects of pathology, pharmacology, and clinical practice. Through this module, students learn about bones, joints, muscles, and connective tissues, as well as their roles in movement and body support. The module emphasizes the correlation between normal structure and function with clinical conditions affecting the musculoskeletal system, enabling students to apply theoretical knowledge to real-life medical situations. It also promotes the development of problem-solving, clinical reasoning, and teamwork skills essential for future medical practice

MODULE LEARNING OUTCOMES

At the end of this module, the students of the 1st year MBBS will be able to:

1. Integrate knowledge of the structure, development, and functional organization of the musculoskeletal system using concepts from anatomy, physiology, and biochemistry to understand normal body support and movement.
2. Correlate physiological and biochemical mechanisms of muscle contraction, bone metabolism, and tissue repair with the maintenance of musculoskeletal function and homeostasis.
3. Relate structural and functional aspects of the musculoskeletal system with pathological processes and clinical manifestations of common musculoskeletal disorders.
4. Apply integrated knowledge from basic and clinical sciences, including pathology, medicine, surgery, and orthopaedics, to understand the principles of assessment, diagnosis, and management of musculoskeletal injuries and diseases.



Alignment Grid

Topics with learning objectives	Department	Duration	Teaching strategy	Assessment
INTRODUCTION OF MSK MODULE At the end of the lecture, the 1st year MBBS students will be able to: <ul style="list-style-type: none"> • Identify the different regions of the upper & lower limbs • Recognise the bones of the upper & lower limbs • List the major vessels & nerves of the upper & lower limb 	Anatomy	60 minutes	Lecture	MCQ
DEVELOPMENT OF MESODERM AND SOMITES At the end of the lecture, the 1st year MBBS students will be able to: <ul style="list-style-type: none"> • Describe the development of mesoderm. • Describe the process of somitogenesis. 	Anatomy	60 minutes	Lecture	SEQ
DEVELOPMENT OF BONE At the end of the lecture, the 1st year MBBS students will be able to: <ul style="list-style-type: none"> • Describe the Intramembranous Ossification. • Describe the Endochondral ossification. 	Anatomy	60 minutes	Lecture	MCQ SEQ
CLAVICLE At the end of SGT, the 1st year MBBS students will be able to: <ul style="list-style-type: none"> • Identify the bone and side determination • Describe the Anatomical position of bone • Recognize different features, surfaces and borders of bone • Discuss the ossification of bone • Discuss the fractures of the clavical 	Anatomy	60 minutes	SGT	OSPE
HUMERUS At the end of SGT the 1st year MBBS students will be able to: <ul style="list-style-type: none"> • Identify the bone and side determination 	Anatomy	60 minutes	SGT	OSPE

<ul style="list-style-type: none"> Describe the Anatomical position of bone Recognize different features , surfaces and borders of bone Discuss the ossification of bone Discuss the fractures of humerus 				
SCAPULA At the end of SGT the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Identify the bone and determine its side Describe the Anatomical position of bone Recognize different features , surfaces and borders of bone Discuss the ossification of bone Discuss the fractures of scapula 	Anatomy	60 minutes	SGT	OSPE
FUNCTIONS OF BONE CELLS At the end of the lecture, the 1st year students will be able to: <ul style="list-style-type: none"> Identify the types of bone cells. Explain the function of osteoblasts and osteoclasts. 	Physiology	60 minutes	Lecture	MCQS, SEQs
DEVELOPMENT OF AXIAL AND APPENDICULAR SKELETON At the end of the lecture, the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Describe the development of axial skeleton Describe the development of appendicular skeletal Discuss vertebral defects 	Anatomy	60 minutes	Lecture	SEQ MCQ
HISTOLOGY OF BONE-I At the end of the lecture, the 1st year students will be able to: <ul style="list-style-type: none"> Recognize bone and its composition. Differentiate between woven bone and lamellar bone. 	Anatomy	60 minutes	Lecture	SEQ MCQ
HISTOLOGY OF BONE-II At the end of the lecture, the 1st year	Anatomy	60 minutes	Lecture	SEQ MCQ

<p>students will be able to:</p> <ul style="list-style-type: none"> Differentiate between compact bone and spongy bone. 				
<p>ANATOMY PRACTICAL</p> <p>HISTOLOGY OF COMPACT BONE</p> <p>At the end of the practical, the 1st year students will be able to:</p> <ul style="list-style-type: none"> Recognize bone and its composition. Explain the microscopic structure of compact bone Identify the slide of compact bone under light microscope 	Anatomy	60 minutes	Practical	OSPE
<p>ANATOMY PRACTICAL</p> <p>At the end of the lecture, the 1st year students will be able to:</p> <p>HISTOLOGY OF SPONGY BONE</p> <ul style="list-style-type: none"> Recognize bone and its composition. Explain the microscopic structure of spongy bone Identify the slide of compact bone under the light microscope 	Anatomy	60 minutes	Practical	OSPE
<p>POWER LAB 2</p> <p>At the end of the lecture, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Log in to their own account on the Power Lab Identify the locations for placements of wires & electrodes on biceps & triceps for EMG Apply the placements of wires & electrodes on subjects biceps & triceps for EMG 	Physiology	60 minutes	Practical	OSPE
<p>ROLE OF COMPACT AND SPONGY BONE</p> <p>At the end of the lecture, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enumerate the functions of compact bone 	Physiology	60 minutes	Lecture	MCQs. SEQ

<ul style="list-style-type: none"> List the functions of spongy bone Compare the similarities and functions of compact and spongy bone. 				
<p>PECTORAL REGION</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the location of pectoral region Describe the cutaneous supply of pectoral region. Discuss the fascia of pectoral region. List the muscles of pectoral region. Describe the attachments of muscles and neurovascular supply and actions. <p>List the lymphatic drainage of pectoral region.</p>	ANATOMY	60 mins	Lecture	SEQ MCQ
<p>SCAPULAR REGION</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Name muscles of scapular region. Describe the attachment and neurovascular supply of muscles. Discuss the anatomical spaces of scapular region. <p>Discuss calcific supraspinatus tendinitis</p>	Anatomy	60 mins	Lecture	SEQ MCQ
<p>METABOLISM OF CA⁺ AND PHOSPHORUS</p> <p>At the end of the lecture, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Describe the metabolism of calcium & Po₄ List the dietary sources of calcium Identify the daily requirements of calcium Explain the role of other minerals in bone growth 	Biochemistry	60 minutes	Lecture	MCQS. SEQS
<p>SYNTHESIS OF PARATHYROID & CALCITONIN HORMONE</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Discuss the synthesis of parathyroid hormone Explain the parathyroid hormone, 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

<p>osteoblasts, osteoclasts function together to regulate the body's calcium levels.</p> <ul style="list-style-type: none"> • Discuss the synthesis of calcitonin • Relate the role of calcitonin to regulate the metabolism of calcium 				
<p>ROLE OF PARATHYROID HORMONE IN BONE GROWTH At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Recognize the hormone released from parathyroid gland • Explain the role of parathyroid hormone in Ca⁺⁺ homeostasis via kidneys, intestines and bone. 	Physiology	60 minutes	Lecture	MCQS
<p>ROLE OF CALCITONIN IN BONE At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • List the hormone released from thyroid gland. • Discuss the role of calcitonin hormone in Ca⁺⁺ homeostasis via kidneys, intestines and bone. 	Physiology	60 minutes	Lecture	MCQS, SEQS
<p>SYNTHESIS OF VITAMIN D At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • List the dietary sources of vitamin D • Identify the daily requirements of vitamin D • Describe the synthesis of Vitamin D₃ in body • Discuss the Hypo & Hyper Vitaminosis 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
<p>PECTORAL GIRDLE- STERNOCLAVICULAR JOINT, ACROMIOCLAVICULAR JOINT At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Identify the joints. • Describe the articulation of joint • Classify the type of joint. • Enlist the ligaments of joint 	Anatomy	60 minutes	Lecture	SEQ MCQ

<ul style="list-style-type: none"> List the muscle acting on the joint. Discuss the clinical aspects of the joint. <p>Discuss the dislocation of sternoclavicular and acromioclavicular joint</p>				
<p>SHOULDER JOINT I</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Classify the type of shoulder joint Describe the structure of shoulder joint. List the muscles acting on shoulder joint Explain the movement of shoulder joint. Discuss the dislocation of shoulder joint 	Anatomy	60minutes	Lecture	SEQ MCQ
<p>SHOULDER JOINT II</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Discuss the nerve supply of shoulder joint Describe the blood supply of shoulder joint Discuss the anastomosis around shoulder joint Discuss rotator cuff injuries & frozen shoulder 	Anatomy	60minutes	Lecture	SEQ MCQ
<p>ROLE OF OTHER HORMONES IN BONE GROWTH</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Interpret the role of growth hormone in bone growth 	Physiology	60 minutes	Lecture	MCQS
<p>DISORDERS OF BONE II</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Define Rickets & Osteomalacia. Describe their etiopathogenesis including the role of Vitamin D: Causes of Deficiency, its activation & regulation. Discuss their Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQS

<p>RICKETS AND OSTEOMALACIA</p> <ul style="list-style-type: none"> Define Rickets and Osteomalacia Describe the causes and pathophysiology Identify clinical features and management. 	Orthopedic Surgery	60 minutes	Lecture	MCQS
<p>REMODELING OF BONE At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Explain the mechanism of deposition of bone by osteoblast Explain the mechanism of bone resorption by osteoclast Identify the role of parathyroid hormone in bone resorption. 	Physiology	60 minutes	Lecture	MCQS, SEQS
<p>DISORDERS OF BONE I At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Define Osteoporosis. Describe its etiology. List its types. Describe the pathophysiology of each type. Discuss its Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQS
<p>ACUTE OSTEOMYELITIS At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Define Acute osteomyelitis and its causes Recognize the Signs and Symptoms <p>Understand the Basic pathophysiology and management</p>	Surgery		Lecture	
<p>OSTEOPOROSIS. At the end of the lecture the 1st year MBBS students will be able to</p> <ul style="list-style-type: none"> Describe risk factors and pathogenesis of osteoporosis Restate clinical features and investigations required for diagnosis Summarize drugs used for treatment of 	Medicine	60 minutes	Lecture	MCQS

disease				
<p>DEVELOPMENT OF LIMBS 1 At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Describe the ossification of limb bones. <p>Explain the early stages of limb development.</p>	Anatomy	60 minutes	Lecture	MCQ SEQ
<p>DEVELOPMENT OF LIMBS II At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Discuss the development of upper and lower limb buds. Describe the final stages of limb development. Discuss the anomalies (clubfoot, cleft hand & foot, amniotic band, congenital hip dislocation) of the limbs. Discuss congenital absence or deficiency of radius (TAR syndrome) Define meromelia, phocomelia, amelia, micromelia, polydactyly, ectrodactyly & syndactyly 	Anatomy	60 minutes	Lecture	SEQ MCQ
<p>AXILLA At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Describe the shape and position of axilla. Name the muscles forming the boundaries of axilla Name the contents of axilla Discuss the formation, course and relation of axillary vessels. Describe the group of axillary lymph nodes and their arrangements Discuss the injuries of axillary nerve 	Anatomy	60 minutes	Lecture	SEQ MCQ
<p>BRACHIAL PLEXUS At the end of the lecture the 1st year MBBS students will be able to:</p>	Anatomy	60 minutes	Lecture	SEQ MCQ

<ul style="list-style-type: none"> Describe the formation of brachial plexus its root value and division (roots, trunk, division and cords) Discuss the relation of brachial plexus. Name the branches arising from roots, trunk and cords. List the muscle and area of skin supplied by branches of brachial plexus. 				
<p>BRACHIAL PLEXUSES CLINICS At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Discuss the injuries of brachial plexus and its cords and the resulting deformities of upper limb. 	Anatomy	60 minutes	Lecture	SEQ MCQ
<p>CLASSIFICATION OF AMINO ACIDS-2 At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Define and Classify amino acids Explain the structure of amino acids Discuss the biomedical importance of amino acids 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
<p>CHRONIC OSTEOMYELITIS At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Define Chronic osteomyelitis and its causes Recognize the Signs and Symptoms Understand the Basic pathophysiology and management 	Orthopaedic	60 minutes	Lecture	MCQS
<p>HOPKIN COLE TEST: At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Demonstrate the presence of tryptophan in the given sample by Hopkin cole test Describe the principle of the reaction taking place in the experiment. Record the observations of the sample. 	Biochemistry	120minutes	Practical	OSPE
<p>DEVELOPMENT OF MUSCLES At the end of the lecture the 1st year</p>	Anatomy	60 minutes	Lecture	SEQ MCQ

<p>MBBS students will be able to:</p> <ul style="list-style-type: none"> Describe the development of skeletal muscle. Discuss the development of Myotomes and derivatives of epaxial divisions of myotomes and derivatives of hypaxial divisions of myotomes. 				
<p>ARM (ANTERIOR COMPARTMENT) At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the compartments of arm and formation of these compartment Name the muscles of anterior compartment of arm. Discuss the attachment and their neurovascular supply and action. Discuss the injuries of musculocutaneous nerve 	Anatomy	60 minutes	Lecture	SEQ MCQ
<p>ARM (POSTERIOR COMPARTMENT) At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> List the muscle of posterior compartment of arm. Describe their attachment, neurovascular supply and action. 	Anatomy	60 minutes	SGT	SEQ MCQ
<p>INTRODUCTION TO TYPES OF MUSCLES At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> List Types of Muscles. Describe Physiologic Arrangement of each Muscle Type. Discuss comparative Feature of each Muscle Type. 	Physiology	60 minutes	Lecture	
<p>At the end of SGT the 1st year MBBS students will be able to:</p> <p>DRAW A SARCOMERE SHOWING</p> <ul style="list-style-type: none"> A-band I-band Z-lines 	Physiology	60 minutes	SGT	

<ul style="list-style-type: none"> • Components of f-actin filament • Show how active sites are uncovered 				
<p>CLASSIFICATION OF PROTEIN</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Recall the Classification of proteins based on size, shape and functions • Recall the Classification of proteins on basis of solubility and physical properties: simple, conjugated and derived proteins 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
<p>MILLON NASSE'S TEST (DETECTION OF AMINO ACID PRACTICAL):</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Demonstrate the presence of tyrosine in the given sample by millon nasse's test • Describe the principle of the reaction. • Record the observations of the sample. 	Biochemistry	60 minutes	Practical	OSPE
<p>STRUCTURAL ORGANIZATION OF PROTEIN-I</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Discuss the different structural configuration of proteins in detail • Discuss the primary structure of protein • Describe all the types of secondary structure as: α-helix, β-pleated sheet structure, triple helix and random coil. • Identify the amino acids involved in maintaining the different types of secondary structure. • Describe the tertiary structure of proteins • Identify the bonds involved in tertiary structure formation • Discuss briefly the quaternary structure 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
<p>OSTEOLOGY OF RADIUS</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Identify the bone and side determination • Describe the Anatomical position of bone 	Anatomy	60 minutes	SGT	OSPE

<ul style="list-style-type: none"> Recognize different features, surfaces and borders of bone Discuss the ossification of bone Discuss the muscle attachment of bone <p>Discuss the fractures of radius</p>				
<p>OSTEOLOGY OF ULNA</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the bone and side determination Describe the Anatomical position of bone Recognize different features, surfaces and borders of bone Discuss the ossification of bone Describe the muscle attachment. Discuss the fractures of Ulna 	Anatomy	60 minutes	SGT	OSPE
<p>ELBOW JOINT</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Classify the type of joint. Describe the structure of joint. Describe the muscles acting on joint. Discuss the neurovascular supply of joint. Describe the carrying angle Discuss the dislocation of elbow joint 	Anatomy	60 minutes	SGT	SEQ MCQ OSPE
<p>ANASTOMOSIS AROUND ELBOW JOINT.</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Describe the anastomosis around elbow joint. Discuss the clinical importance 	Anatomy	60 minutes	Lecture	MCQ
<p>ELBOW JOINT AND RADIUS ULNA RADIOLOGICAL ANATOMY</p> <p>At the end of the lecture, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enumerate elbow joint and radius & ulna radiological anatomy. 	Radiology	60 minutes	Lecture	MCQS

<ul style="list-style-type: none"> To locate important radiological landmarks. 				
EXERCISE 2: DEMONSTRATION OF LATENCY PERIOD <ul style="list-style-type: none"> By changing position of stimulus observe change in latency period(L2+L1) 	Physiology	60 minutes	Practical	OSPE
At the end of SGT the 1st year MBBS students will be able to solve : SCENARIO ON LOCAL ANAESTHESIA <ul style="list-style-type: none"> A 15 year old boy has a boil in his forearm. The surgeon decides to incise and drain it. He injects a local anaesthetic agent which anaesthetises the area. Explain mechanism of action Identify nerve which is most susceptible to local anaesthesia 	Physiology	60 minutes	SGT	MCQS
RESTING MEMBRANE POTENTIAL At the end of the lecture the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Define the Resting Membrane Potential (RMP) and its value. Enlist the electrolytes, responsible for generating Resting Membrane Potential. Define the role of K⁺ & Na⁺ diffusion potential in generating Resting Membrane Potential Define the role of Na⁺ - K⁺ electrogenic pump in generating Resting Membrane Potential. Identify the importance of Nernst Potential, Nernst and Goldman equation. 	Physiology	60 minutes	Lecture	MCQS, SEQs
ANTERIOR COMPARTMENTS OF FOREARM At the end of SGT the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Identify the muscle of anterior compartment of forearm. 	Anatomy	60 minutes	LECTURE	SEQ MCQ

<ul style="list-style-type: none"> Describe muscle attachment and action of anterior compartments of forearm Describe the neurovascular supply of the anterior compartment of forearm Discuss the significance of radial artery (coronary angiography) Discuss the injuries of median & ulnar nerve 				
<p>MUSCLES OF POSTERIOR COMPARTMENT OF FOREARM At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the muscles of posterior compartment and their neurovascular supply. Describe the attachment and action of muscles of posterior compartment. Discuss the injuries of radial nerve 	Anatomy	60 minutes	LECTURE	SEQ MCQ
<p>CUBITAL FOSSA At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the location of cubital fossa. Describe the boundaries and content of cubital fossa. Discuss the significance of median cubital vein for I/V cannulation 	Anatomy	60 minutes	Lecture	SEQ MCQ
<p>PROPAGATION OF ACTION POTENTIAL At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Classify nerve fiber on basis of nerve conduction velocity Define saltatory conduction Explain the mechanism involved in the Propagation of action potential Describe other properties of nerve fibers 	Physiology	60 minutes	Lecture	MCQS
<p>Nerve degeneration & regeneration At the end of the lecture the 1st year MBBS students will be able to:</p>	Physiology	60 min:	Lecture	MCQS

<ul style="list-style-type: none"> Define degrees of nerve injury Explain degenerative changes in neuron Describe phenomenon of regeneration of nerve fiber 				
<p>SYNTHESIS OF ACETYLCHOLINE</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Discuss the biosynthesis and metabolism of Acetylcholine Identify the hydrolysis product of Acetylcholine and various acetylcholine inhibitors. 	Biochemistry	60 minutes	Lecture	MCQS
<p>LEAD SULPHIDE TEST (DETECTION OF AMINO ACID PRACTICAL)</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Demonstrate the presence of Sulphur containing amino acid by lead sulphide test Describe the principle and observe the results. 	Biochemistry	60 minutes	Practical	OSPE
<p>NEUROMUSCULAR JUNCTION</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Define the term neuromuscular junction. List the Components of Neuromuscular Junction. Describe the motor end plate with suitable diagram. Define the function of mitochondria in presynaptic nerve fibers. Identify the physiologic parts at neural membrane Explain the role of acetylcholine in neuromuscular junction 	Physiology	60 minutes	Lecture	MCQS
<p>At the end of SGT the 1st year MBBS</p>	Physiology	60 minutes	SGT	MCQS ,

<p>students will be able to:</p> <p>DESCRIBE NMJ WITH THE HELP OF DIAGRAM SHOWING</p> <ul style="list-style-type: none"> • Sarcolemma • Sarcoplasmic reticulum • T-tubules • Triad • Transmission of impulse at NMJ 				
<p>DISORDERS OF NEUROMUSCULAR JUNCTION</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Define Myasthenia Gravis (MG). • Describe its etiopathogenesis. • Discuss its Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQS
<p>DISORDERS OF MUSCLES</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Define Duchenne Muscular Dystrophy. • Describe its etiopathogenesis. • Discuss its Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQS
<p>OSTEOLOGY OF HAND</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Identify the small bones; carpals, metacarpals and phalanges. • Discuss their arrangement in hand. • Discuss the fractures of scaphoid & hamate • 	Anatomy	60 minutes	SGT	OSPE
<p>OSTEOLOGY OF HAND II</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the muscle attachment of bones of hand • Describe Dupuytren's contracture, hand infections & palmar wounds with surgical incisions 	Anatomy	60 minutes	SGT	SEQ MCQ

<p>SUPERIOR AND INFERIOR RADIOLNAR JOINTS At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Classify the joints. • Describe the radioulnar joint and their neurovascular supply. • Discuss the movement of these joint. • Explain the dislocation of superior radioulnar joint 	Anatomy	60minutes	SGT	OSPE
<p>WRIST JOINT At the end of SGT, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the wrist joint and its neurovascular supply. • Discuss the movement occurring at wrist joint. • Discuss the dislocation of wrist joints. 	Anatomy	60 minutes	SGT	OSPE
<p><u>FRACTURES AROUND WRIST AND HAND</u></p> <ul style="list-style-type: none"> • Identify the Common Types of Fractures such as Colles' fracture, Smith's fracture • Explain the Basic Mechanism and Clinical Features <p>Outline the Basic Principles of Diagnosis and Management</p>	Orthopaedic	60 minutes	Lecture	MCQS
<p>SMALL JOINTS OF HAND At the end of SGT, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Classify the intercarpal, metacarpal. Metacarpophalangeal and interphalangeal joints. 	Anatomy	60 minutes	SGT	OSPE
<p>RETINACULUM At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Enumerate the retinaculum of foot. • Describe their attachment and location. • Enlist the structures pass superficial and deep to the retinaculum. 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE

<p>PALM OF HAND At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enumerate the intrinsic muscle of hand. Describe the attachment and action of the muscles of hand. Discuss the nerve supply of hand muscle. 	Anatomy	60 minutes	Lecture	MCQ OSPE
<p>SPACES OF HAND At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the different spaces of hand on both dorsal and palmar aspect. Describe the spaces of hand. Describe the clinical importance of these spaces 	Anatomy	60 minutes	Lecture	OSPE
<p>BLOOD VESSELS AND LYMPHATIC DRAINAGE OF UPPER LIMBS. At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enumerate the arteries and veins of the upper limb Describe its course and branches. Discuss the formation of superficial and deep palmar arches. Describe the lymphatic drainage of upper limb 	Anatomy	60 minutes	Lecture	MCQ
<p>CUTANEOUS SUPPLY OF UPPER LIMB At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Describe the cutaneous supply and dermatomes of upper limb. 	Anatomy	60 minutes	Lecture	MCQ
<p>SHOULDER RADIOLOGICAL ANATOMY At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enumerate shoulder radiological anatomy 	Radiology	60 minutes	Lecture	MCQS

<ul style="list-style-type: none"> Locate different important radiological land marks. 				
<p>FRACTURE HEALING AND IT'S COMPLICATIONS</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Understand the Basic Process of Fracture Healing Recognize Factors Affecting Fracture Healing like age, Nutrition etc. Identify Common Complications of Fracture Healing like delayed union, nonunion, malunion 	Orthopedic Surgery	60 minutes	Lecture	MCQS
<p>MUSCULOSKELETAL DISORDERS</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Define musculoskeletal injuries and list their risk factors. Identify the different types of musculoskeletal injuries Explain the principles of ergonomics and how they can be applied to prevent musculoskeletal injuries 	Community Medicine	60 minutes	Lecture	MCQS
<p>DISORDERS OF JOINTS</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Classify different types of Arthritis. Describe the pathophysiology of Osteoarthritis & Rheumatoid arthritis. Discuss their Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQS
<p>OSTEOARTHRITIS:</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Describe pathogenesis and risk factors for osteoarthritis Restate signs and symptoms which occur in patient suffering from osteoarthritis Summarize Investigation to diagnose the disease and discuss treatment plan 	Medicine	60 minutes	Lecture	MCQS

<p>SEPTIC ARTHRITIS</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Define arthritis and its types • Explain clinical features of septic arthritis • Describe the investigations to diagnose septic arthritis 	Surgery	60 minutes	Lecture	MCQS
<p>OVERVIEW OF PHARMACOLOGY OF BONE DISORDERS</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • List the types of Bone disorders. • Describe the pathophysiology of osteoporosis, rickets and osteomalacia. • Discuss the mechanistic pharmacology of osteoporosis, rickets and osteomalacia 	Pharmacology	60 minutes	Lecture	MCQS
<p><u>Fractures Around Shoulder and Elbow</u></p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Explain the biomechanical forces acting on the humerus and shoulder that contribute to fracture patterns • Recognize Common Types of Fractures around Shoulder and Humerus • Outline the Basic Principles of Diagnosis and Management 	Orthopedic Surgery	60 minutes	Lecture	MCQS
<p>FRACTURES AROUND SHOULDER AND ELBOW</p> <p>At the end of the lecture, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • - Explain the biomechanical forces acting on the shoulder that contribute to fracture patterns • -Recognize Common Types of Fractures around Shoulder and Elbow • -Outline the Basic Principles of Diagnosis and Management Management 	Orthopedic Surgery	60 minutes	Lecture	MCQS

<p><u>FRACTURES AROUND ELBOW IN ADULTS</u></p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> List common types of fractures around the elbow (supracondylar, intercondylar, radial head, olecranon fractures) Recognize key clinical signs and symptoms, including pain, swelling, deformity, and restricted movement Outline the Basic Principles of Diagnosis and Management 	Orthopedic Surgery	60 minutes	Lecture	MCQS
<p>INTRODUCTION OF LOWER LIMB</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the different parts of the lower limb Recognize the bones of the lower limb and discuss the facial compartment of each part of lower limb 	Anatomy	60 minutes	Lecture	MCQS
<p>CUTANEOUS SUPPLY, SUPERFICIAL VEINS AND LYMPHATIC DRAINAGE OF LOWER LIMB</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Name the cutaneous supply of each compartment of lower limb Describe the superficial veins and lymphatic drainage of lower limb with clinical aspects. 	Anatomy	60 minutes	Lecture	MCQ
<p>OSTEOLOGY OF HIP BONE</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the bone and side determination Describe the Anatomical position of bone Recognize different features , surfaces 	Anatomy	60 minutes	SGT	OSPE

<p>and borders of bone</p> <ul style="list-style-type: none"> • Discuss the ossification of bone 				
<p>OSTEOLOGY OF HIP BONE II At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the attachments of muscles of bone • Describe its fractures 	Anatomy	60 minutes	SGT	OSPE
<p>OSTEOLOGY OF FEMUR At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Identify the bone and side determination • Describe the Anatomical position of bone • Recognize different features , surfaces and borders of bone • Discuss the ossification of bone 	Anatomy	60 minutes	SGT	OSPE
<p>OSTEOLOGY OF FEMUR II At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the attachments of muscle. • Describe its fractures 	Anatomy	60 minutes	SGT	OSPE
<p>HIP JOINT At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Identify the bones of hip joint. • Describe the structure of hip joint. • Classify the type of hip joint. • List the ligaments of hip joint. • Explain the movement of joint. • Discuss the dislocation of hip joint 	Anatomy	60 minutes	SGT	MCQ SEQ
<p>GLUTEAL REGION I At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Identify the bone and muscles of the gluteal region. • Explain the action of muscles of gluteal region. 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE

<p>GLUTEAL REGION II At the end of the lecture, the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the nerve and blood supply of the gluteal region. • Discuss the greater and lesser sciatic foramen and their contents. • Discuss the injuries of superior and inferior gluteal nerve 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE
<p>THIGH ANTERIOR COMPARTMENT At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the attachments, action, and the neurovascular supply of the muscles of the anterior compartment of thigh. • Discuss groin injuries • Discuss the lacerations and cannulation of femoral artery • Discuss the injuries of femoral nerve 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE
<p>FEMORAL TRIANGLE AND ADDUCTOR CANAL At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the boundaries and content of femoral triangle. • Explain clinical significance of femoral canal. • Discuss Femoral hernia • Enumerate its causes and type • Describe the boundaries and content of adductor canal • Explain clinical significance of adductor canal 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE
<p>THIGH MEDIAL AND POSTERIOR COMPARTMENT At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Enlist the muscles of medial and posterior compartment of thigh. • Discuss the hamstring injuries 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE

<ul style="list-style-type: none"> • Discuss the nerve supply and action of muscles. • Overview of the course and branches of obturator and sciatic nerve. • Explain the blood supply of both compartments. • Discuss the injuries of the obturator & sciatic nerve 				
<p>HIP JOINT RADIOLOGICAL ANATOMY</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Enumerate hip joint radiological anatomy. • To locate important radiological landmarks. 	Radiology	60 minutes	Lecture	MCQS
<p>SCIATIC NERVE</p> <p>At the end of the lecture 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe root value of Sciatic Nerve • Describe the course and relation of sciatic nerve • Enumerate the branches of Sciatic Nerve • Discuss the clinical aspect 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE
<p>FRACTURES AROUND HIP AND KNEE</p> <p>At the end of the lecture 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • -Explain the biomechanical forces acting on the Hip that contribute to fracture patterns • -Recognize Common Types of Fractures around Hip and Knee • -Outline the Basic Principles of Diagnosis and Management 	Orthopedic Surgery	60 minutes	Lecture	MCQS
<p>OSTEOLOGY OF TIBIA</p> <p>At the end of SGT the 1st year MBBS students will be able to:</p>	Anatomy	60 minutes	SGT	OSPE

<ul style="list-style-type: none"> Identify the bone and determine its side Describe the Anatomical position of bone Recognize different features , surfaces and borders of bone Discuss the ossification of bone 				
OSTEOLOGY OF TIBIA II At the end of SGT the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Describe the muscle attachment on tibia. Discuss the fractures of tibia. 	Anatomy	60 minutes	SGT	OSPE
OSTEOLOGY OF FIBULA At the end of SGT the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Identify the bone and determine its side Describe the Anatomical position of bone Recognize different features , surfaces and borders of bone Discuss the ossification of bone 	Anatomy	60 minutes	SGT	OSPE
OSTEOLOGY OF FIBULA At the end of SGT the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Describe the muscle attachment of tibia Discuss its fractures 	Anatomy	60 minutes	SGT	OSPE
KNEE JOINT At the end of SGT the 1st year MBBS students will be able to: <ul style="list-style-type: none"> Describe the structure and type of knee joint. Enlist the intra and extra capsular ligaments of knee joint. Explain the mechanism of locking and unlocking of the knee joint. Describe nerve and blood supply of knee joint. Describe the bursitis in the knee region 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE

<ul style="list-style-type: none"> Discuss the dislocation of the knee & patella 				
<p>POPLITEAL FOSSA At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Identify the location of popliteal fossa. Describe its boundaries and content. 	Anatomy	60 minutes	Lecture	SEQ MCQ OSPE
<p>ACHING JOINTS AND MUSCLES IN PRIMARY CARE :Causes & Effects At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Discuss Common factors causing joint and Muscle pain Describe the Range of Movement of a joint(Knee & elbow) Discuss the impact of a Musculoskeletal pain on a person 	Family Medicine	60 minutes	Lecture	MCQS
<p>LEG ANTERIOR AND LATERAL COMPARTMENT At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enlist the muscle of lateral and anterior compartment of leg with attachment & action. Describe neurovascular supply of lateral compartment. Discuss the injury of common fibular nerve 	Anatomy	60 minutes	SGT	SEQ MCQ OSPE
<p>LEG POSTERIOR COMPARTMENT At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enlist the muscle of posterior compartment of the leg with attachment & action. Describe neurovascular supply of posterior compartment. Describe the deformities related to 	Anatomy	60 minutes	SGT	SEQ MCQ OSPE

<p>tibial nerve injury.</p> <ul style="list-style-type: none"> • Discuss varicose veins and saphenous cutdown 				
<p>KNEE JOINT AND TIBIA FIBULA RADIOLOGICAL ANATOMY. At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Enumerate knee joint radiological anatomy. • To locate important radiological landmarks. 	Surgery	60 minutes	Lecture	MCQS
<p>OSTEOLOGY OF FOOT At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Identify the bones of foot; tarsal, metatarsal and phalanges. • Understand the arrangement of tarsal bones. • Describe the bony arches of foot. • Discuss the fractures of the calcaneum & talus 	Anatomy	60 minutes	SGT	OSPE
<p>OSTEOLOGY OF FOOT II At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the muscle attachment of the bones of foot. • Describe the calcaneal tendinitis and bursitis 	Anatomy	60 minutes	SGT	OSPE
<p>SUPERIOR AND INFERIOR TIBIOFIBULAR JOINT AND SMALL JOINTS OF FOOT At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Discuss the articulation and type of joints. • Describe the muscles attachments and their actions on these joints 	Anatomy	60 minutes	SGT	OSPE
<p>ANKLE JOINT At the end of SGT the 1st year MBBS</p>	Anatomy	60 minutes	SGT	OSPE

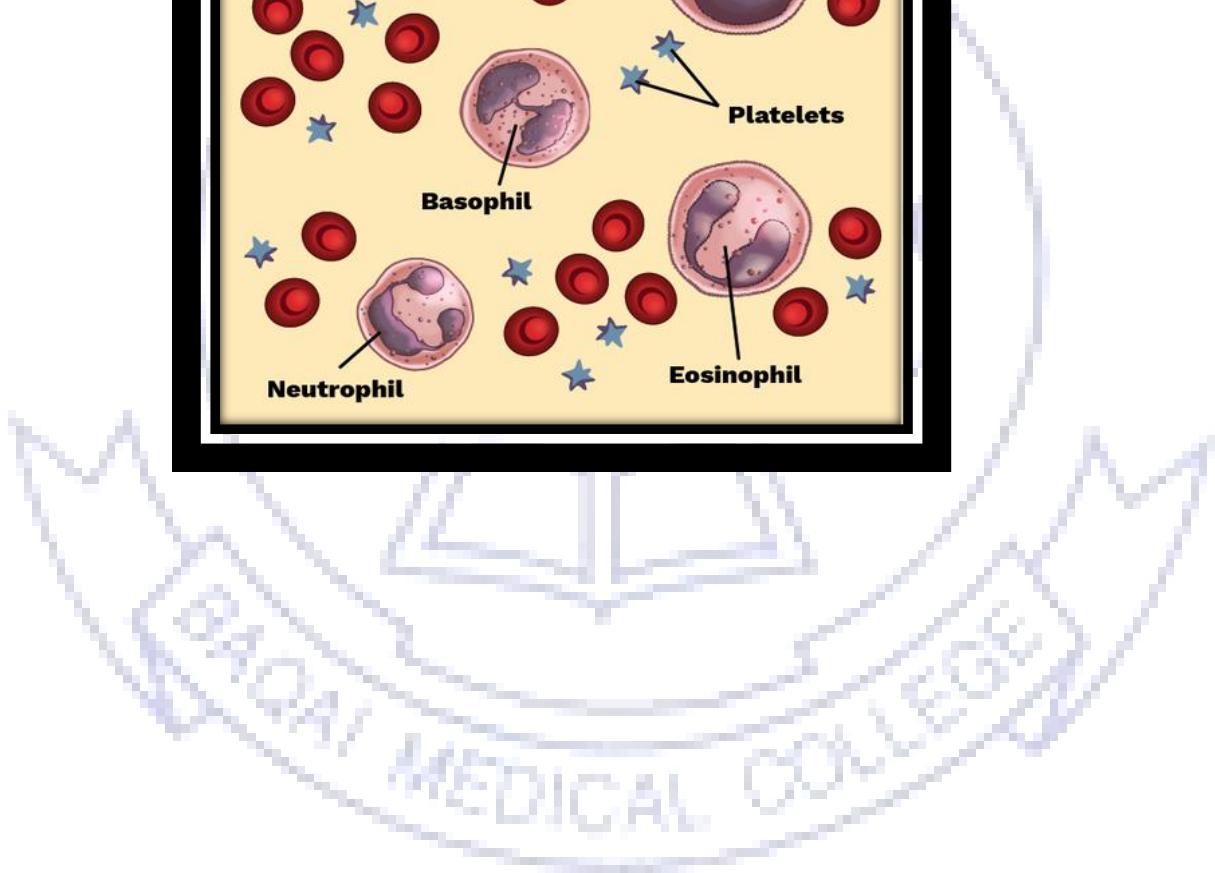
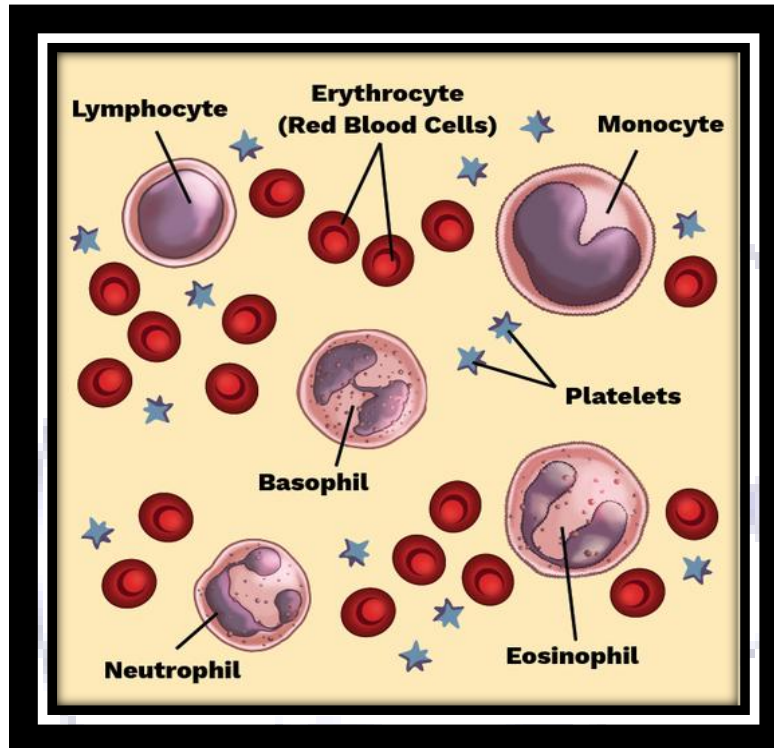
<p>students will be able to:</p> <ul style="list-style-type: none"> • Describe the structure of ankle joint. • Demonstrate movement of ankle joint. • Describe its blood and nerve supply. • Discuss injuries related to ankle joint. 				
<p>RETINACULUM At the end of SGT the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Enumerate the retinaculum of foot. • Describe their attachment and location. • Enlist the structures pass superficial and deep to the retinaculum. 	Anatomy	60 minutes	Lecture	MCQ OSPE
<p>ARCHES OF THE FOOT At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Enlist the bones involved in arches of foot • Discuss the formation of arches of foot • Discuss the supports of arches • Define pes planus and clubfoot 	Anatomy	60 minutes	Lecture	OSPE
<p>DORSUM OF FOOT At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Enlist the long extensor tendons of dorsum of foot. • Describe the course of dorsalis pedis artery. • Describe the nerve supply and superficial venous arches of dorsum of foot. 	Anatomy	60 minutes	Lecture	MCQ
<p>SOLE OF THE FOOT At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Describe the plantar fascia and its applied aspects. • Describe the contents of each layer of sole of the foot. • Describe the neurovascular supply of the sole of the foot. 	Anatomy	60 minutes	Lecture	MCQ

<ul style="list-style-type: none"> Define planter nerves morton's neuroma 				
<p>VASCULAR SUPPLY OF LOWER LIMB</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enlist the arteries of lower limb Discuss the course and branches of the femoral and popliteal arteries Discuss the formation of small and great saphenous vein 	Anatomy	60 minutes	Lecture	SEQ MCQ
<p>KNEE JOINT AND TIBIA FIBULA RADIOLOGICAL ANATOMY.</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enumerate knee joint radiological anatomy. To locate important radiological landmarks. 	Radiology	60 minutes	Lecture	MCQS
<p>ANKLE JOINT AND FOOT RADIOLOGICAL ANATOMY</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> Enumerate ankle joint and foot radiological anatomy. To locate important radiological landmarks. 	Radiology	60 minutes	Lecture	MCQS
<p>FRACTURES AROUND ANKLE AND FOOT</p> <p>At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> -Explain the biomechanical forces acting on the Ankle that contribute to fracture patterns -Recognize Common Types of Fractures around Ankle and Foot -Outline the Basic Principles of Diagnosis and Management 	Orthopedic Surgery	60 minutes	Lecture	MCQS

<p><u>BEHAVIOURAL SCIENCES</u> At the end of the lecture the 1st year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Introduction of behavioural sciences • Link of health with behavioural sciences • Importance of health in behavioural sciences 	Behavioural Sciences	60minutes	Lecture	MCQS
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BLOOD MODULE



Module III

BLOOD

INTRODUCTION TO MODULE – III



<i>Module – III</i>	
<i>BLOOD</i>	
System	BLOOD
Duration	5 Weeks (1 ST July 2026 to 31 st July 2026)
Assessment Dates	3 rd August 2026
Assessment Pattern	MCQs, SEQs & OSPE

*The Assessment pattern and dates are tentative (Subject to change)

MODULE INTRODUCTION

The Integrated Blood Module for first-year MBBS students is structured to provide a comprehensive foundation in the cellular and biochemical aspects of blood, while linking core basic sciences with their clinical relevance. It emphasizes the application of knowledge in diagnosing and managing hematological and immunological disorders, with a focus on evidence-based practice and the use of modern technologies.

MODULE LEARNING OUTCOMES

At the end of this module, the students of the 1st year MBBS will be able to:

- Integrate understanding of blood cellular components and plasma biochemistry with clinical conditions like anemia and bleeding disorders.
- Correlate hemoglobin structure and metabolism with hemoglobinopathies for clinical diagnosis and management.
- Relate immune system anatomy and function to pathological conditions and histological findings of lymphoid organs.
- Apply laboratory techniques for blood analysis, blood grouping, and coagulation tests in clinical settings for accurate diagnosis.



I. Alignment Grid

Topics	Learning Objectives	Department	Duration	Teaching strategy	Assessment
DEVELOPMENT OF BLOOD CELLS:	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Define hematopoiesis. • Describe the sites of hematopoiesis before and after birth • Discuss the source of hematopoiesis 	Anatomy	60 minutes	Lecture	MCQS, SEQS
HEMATOGENESIS	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Differentiate stem / pluripotent cells, progenitor and precursor (blasts) cells • Explain the development of various types of blood cells 	Anatomy	60 minutes	Lecture	MCQS, SEQS
INTRODUCTION OF RED BLOOD CELLS	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Describe the Shape, size and life span of Red • Blood Cells and Red Blood Cell count • Recite the Quantity of Hemoglobin in Red Blood Cell. • Explain the importance of Hemoglobin transportation of Oxygen in tissues 	Physiology	60 minutes	Lecture	MCQS, SEQS
ERYTHROPOIESIS	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Discuss the site involved in Erythropoiesis • Describe the Importance of multipotent hematopoietic stem cells (MHSC) • Explain the stages of 	Physiology	60 minutes	Lecture	MCQS, SEQS

	differentiation of erythropoiesis				
FACTORS REGULATING ERYTHROPOIESIS	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Enumerate the factors which regulate erythropoiesis Define the role of erythropoietin Explain the role of Hypoxia in erythropoiesis Identify the role of erythropoietin in the production of pro-erythroblast from Pluripotent Hemopoietic Stem Cell 	Physiology	60 minutes	Lecture	MCQS, SEQS
METABOLISM OF HAEMOPOETIC VITAMINS:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Discuss the active forms and sources of vitamin B12 and Folic acid- Discuss the function of vitamin B12 and folic acid with hemoglobin synthesis 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
MATURATION OF RBC BY VITAMIN B12 AND FOLIC ACID	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Explain the importance of maturation failure in B12 deficiency. Define pernicious anemia Identify the maturation failure in folic acid deficiency. 	Physiology	60 minutes	Lecture	MCQS, SEQS
RBC COUNT	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Discuss RBC functions Explain the ruling area of 	Physiology	120 minutes	Practical	OSPE

	<p>the chamber</p> <ul style="list-style-type: none"> • Demonstrate the steps to measure RBCs in Neubauer's chamber • Practice the slide focus for Neuber's chamber • Calculate the number of RBC 				
METABOLISM OF COPPER:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Describe the absorption of Copper from the small intestine. • List the functions of Copper in the body • Identify the importance of copper-iron metabolism • List the functions of Copper in the body. • Identify the importance Copper in iron metabolism 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
BIOSYNTHESIS OF PORPHYRINS	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Define porphyrins • Describe the sequence of reactions involved in heme synthesis • Identify the enzymes and co-enzymes involved in heme synthesis. • Describe the regulation of heme synthesis 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
PORPHYRIAS:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Define porphyrias • Classify the types of porphyrias • Identify the enzyme deficient in every porphyria 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> Explain the clinical manifestations of porphyria on the basis of sign & symptoms 				
HEMOGLOBIN:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Describe the structure of hemoglobin Define methemoglobin and methemoglobinemia. Explain the conversion of methemoglobin into Hemoglobin Discuss Carbon Monoxide poisoning 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
Hb ESTIMATION	<p>At the end of this Practical First Year M.B.B.S students will be able to;</p> <ul style="list-style-type: none"> Discuss the functions of Hb Identify the parts & principle of Sahli's hemocytometer Demonstrate the method of Hb estimation Determine the value of Hb 	Physiology	120 minutes	Practical	OSPE
FUNCTIONS OF HEMOGLOBIN:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> List the types of hemoglobin Enumerate the functions of hemoglobin Explain the transport of Oxygen by hemoglobin 	Physiology	60 minutes	Lecture	MCQS, SEQS
BIOCHEMICAL CAUSES OF HEMOGLOBINOPATHIES	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Recall the Biochemical Structure of Hemoglobin Describe the Biochemical Basis of Hemoglobin S 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

	<p>(Sickle Cell Hemoglobin)</p> <ul style="list-style-type: none"> Describe the Biochemical Basis of Hemoglobin C Explain the Biochemical Basis of Hemoglobin SC Disease Describe the Biochemical Basis of Methemoglobinemia Describe the Biochemical Basis of Thalassemia 				
RBC DISORDERS I	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define Blood & Describe Its Components & Functions. Define & Classify Anemia. Describe Iron Deficiency Anemia, Macrocytic Anemia, G6PD Deficiency 	Pathology	60 minutes	Lecture	MCQS, SEQS
RBC DISORDERS-II	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Describe the Structure & Function of Normal Hemoglobin. Enumerate & Describe the Abnormal Types of Hemoglobin. Describe Thalassemia & Sickle Cell Anemia. 	Pathology	60 minutes	Lecture	MCQS.
Hb ESTIMATION	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> Discuss the functions of Hb Identify the parts & principle of Sahlis hemocytometer Demonstrate the method of Hb estimation Determine the value of Hb 	Physiology	120 minutes	Practical	OSPE

ANEMIAS:	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Define anemia • List the types of anemias • List the causes of each type • Explain the effects of anemias on circulatory system functions 	Physiology	60 minutes	Lecture	MCQS, SEQS
Iron deficiency anemia	At the end of this Practical First Year M.B.B.S. student will be able to; <ul style="list-style-type: none"> • Recite etiology and pathogenesis of Iron deficiency anemia • Restate clinical features and investigations required for diagnosis • Recognize food rich in iron to prescribe patients • Summarize drugs used for treatment of iron deficiency anemia 	Medicine	60 minutes	Lecture	MCQS
Megaloblastic anemia	At the end of this Practical First Year M.B.B.S. student will be able to; <ul style="list-style-type: none"> • Discuss causes and pathophysiology of megaloblastic anemia including both vitamin B12 and folate deficiency • Restate clinical features and investigations required for diagnosis of megaloblastic anemia • Identify foods rich in vitamin B12 and folate • Review the treatment of Megaloblastic anemia 	Medicine	60 minutes	Lecture	MCQS
Hemolytic anemia	At the end of this Practical First Year M.B.B.S. student will be able to; <ul style="list-style-type: none"> • Recognize classification and 	Medicine	120 minutes	Lecture	MCQS

	<p>pathogenesis of all types of hemolytic anemias</p> <ul style="list-style-type: none"> • Restate clinical findings with which patient present including thalassemia, sickle cell anemia, G6PD deficiency, autoimmune hemolytic anemia and hereditary spherocytosis • Identify Investigation to diagnose the disease and design a treatment plan for each disease 				
Drug-drug interactions	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> • Define drug-drug interactions • Classify different categories of drug interactions on the basis of <ul style="list-style-type: none"> • pharmacodynamics and pharmacokinetics • Define the terms synergism, addition, summation and antagonistic drug interaction • List commonly encountered drug interactions. • Explain the consequences of drug interactions 	pharmacology	60 minutes	Lecture	MCQS
Overview of Pharmacology of Anemia	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> • Define anemia. • List the types of anemia. 	pharmacology	60 minutes	Lecture	MCQS

	<ul style="list-style-type: none"> Describe the pathophysiology of anemia. Discuss the mechanistic pharmacology of anemia. 				
COMPONENT OF BLOOD -	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Describe the primary components of blood (plasma, red blood cells, white blood cells, and platelets) Explain the structure and function of each component. Explain the role of hemoglobin in oxygen transport Describe ABO blood group system Define rhesus system Describe the adequate storage technique and shelf life of components of blood 	SURGERY	60 minutes	Lecture	MCQS
POLYCYTHEMIA:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define polycythemia List the different types of polycythemia Explain the effects of polycythemias on circulatory system functions 	Physiology	60 minutes	Lecture	MCQS, SEQS
PLASMA:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define plasma 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> • Define hematocrit • List the main functions of plasma • Explain the osmotic functions of plasma proteins 				
PLASMA PROTEINS	<ul style="list-style-type: none"> • At the end of this lecture, First Year M.B.B.S. students will be able to: • Define plasma protein & state the normal level in blood • Discuss the functions of plasma proteins in our bodies • Discuss the Albumin and its biomedical importance • Explain the deficiency of plasma proteins 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
GLOBULINS-:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Classify Globulins: α, β, and γ-globulins • Identify the site of synthesis of globulins. • Explain the functions of different types of globulins. • Identify the site of synthesis of fibrinogen. • Discuss the functions of fibrinogen 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
DEGRADATION OF HEME	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Explain the biochemical metabolism of bilirubin, including heme degradation, transport, conjugation in the liver, and excretion. 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> Differentiate between unconjugated and conjugated hyperbilirubinemia based on biochemical parameters. 				
HYPER-BILIRUBINEMIA, BIOCHEMICAL CAUSES AND DIFFERENTIATION	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Describe the biochemical causes of unconjugated hyperbilirubinemia Explain the biochemical causes of conjugated hyperbilirubinemia Interpret biochemical tests such as serum bilirubin fractions, urine bilirubin, and urobilinogen levels for diagnosing different types of hyperbilirubinemia. 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
OBSTRUCTIVE JAUNDICE:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define jaundice Classify various types of jaundice and their causes. Define obstructive jaundice To summarize the basic anatomy and physiology of the biliary system. To demonstrate the pathophysiology and complications of obstructive jaundice Enlist the common causes of obstructive jaundice in a sequential manner. 	Surgery	60 minutes	Lecture	Mcqs
LIVER FUNCTION TEST:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Identify the liver function tests used for the diagnosis 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

	<p>of jaundice.</p> <ul style="list-style-type: none"> Describe van den Bergh test for estimating bilirubin Discuss the estimation of the enzymes : ALT, AST, ALP and GGT in the differential diagnosis of liver dysfunction 				
<p>INTRODUCTION TO LYMPHOID TISSUE AND IMMUNE SYSTEM</p> <p>-</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Describe the immune system and lymphoid tissue. Differentiate between central lymphoid organs and peripheral lymphoid organs. Discuss the structure and function of lymph nodes. Describe the histological appearance & features of lymph nodes 	Histology	60 minutes	Lecture	MCQS, SEQS
<p>GROSS ANATOMY OF SPLEEN:</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Identify the location, structure and anatomical relation of the spleen Discuss the blood supply and nerve supply of the spleen Define rupture of spleen & splenectomy List the structures involved in the splenic needle biopsy 	Anatomy	60 minutes	Lecture	MCQS, SEQS
<p>EMBRYOLOGY OF SPLEEN</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Describe the development of spleen. Development of fore gut, mid gut and hind gut. 	Anatomy	60 minutes	Lecture	MCQS, SEQS

<p>SPLENOMEGALY AND COMPLICATIONS OF SPLENECTOMY</p> <p>-</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Define the functions of spleen • Define splenomegaly • list the causes of splenomegaly • Enumerate the indications of Splenectomy. • Discuss the principles and potential complications of splenectomy • Define the importance of prophylaxis against infection following splenectomy 	Surgery	60 minutes	Lecture	Mcqs
<p>SPLENIC TRAUMA</p>	<p>At the end of this lecture, the First Year MBBS student will be able to:</p> <ul style="list-style-type: none"> • Describe the Location and anatomical relationships of the spleen • List the functions of the spleen • Identify potential mechanisms of splenic injury • Recognizing clinical signs and symptoms of splenic trauma • Outline the potential complications associated with splenic trauma 	Surgery	60 minutes	Lecture	Mcqs
<p>HISTOLOGY OF SPLEEN</p>	<p>At the end of this Practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Identify the location, structure and anatomical relation of the spleen • Discuss the histological features of the spleen. 	Anatomy	120minutes	Practical	OSPE

LYMPH NODE	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Discuss the structure and function of lymph nodes. • Describe the histological appearance & features of lymph nodes 	Anatomy	60 minutes	Lecture	MCQS, SEQS
HISTOLOGY OF LYMPH NODE -	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Identify the structure, function of lymph nodes. • Identify the histological appearance & features of lymph nodes 	Anatomy	120 minutes	Practical	OSPE
BIURET TEST	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> • Recall the structure of peptide bond • Detect the presence of protein in the given sample. • Describe the principle of the reaction taking place in the equipment. • Record the observation off sample and control in the equipment 	Biochemistry	120 minutes	Practical	OSPE
Hb ESTIMATION	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> • Discus the functions of Hb • Identify the parts & principle of Sahlis hemocytometer • Demonstrate the method of Hb estimation • Determine the value of Hb 	Physiology	120 minutes	Practical	OSPE
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<p>WBCs:</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Identify WBC count or total leucocyte count. • Describe the functions WBCs • List the different types of WBCs • List the concentration of different types of WBCs • List the life span of different types of WBCs • Explain the different stages of Leukopoiesis 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>
<p>EOSINOPHILS:</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Explain the role of eosinophils against parasites • Explain the role of eosinophils in allergies 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>
<p>BASOPHILS:</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • List the substances secreted by basophils • Explain the role of basophils in allergic reactions 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>
<p>RETICULOENDOTHELIAL SYSTEM:</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Define the reticuloendothelial system • List the types of macrophages • Identify the role of macrophages (histiocytes) in subcutaneous tissues lymph nodes • Explain the functions of 	<p>Physiology</p>	<p>120 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>

	<p>macrophages in the lungs</p> <ul style="list-style-type: none"> • Explain the functions of macrophages in the liver spleen and bone marrow 				
TONSIL	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Describe the structure, function of tonsil • Discuss the histological appearance & features of tonsil 	Anatomy	60 minutes	Lecture	MCQS, SEQS
HISTOLOGY OF TONSIL	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Identify the structure, function of tonsil • Identify the histological appearance & features of tonsil 	Anatomy	120 minutes	Practical	OSPE
STEPS OF INFLAMMATION:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Explain margination • Define diapedesis • Define the ameboid motion of neutrophils • Explain chemotaxis • Identify the Walling-off effect of inflammation • Define the characteristics of inflammation • Name the tissue factors of inflammation 	Physiology	60 minutes	Lecture	
PHAGOCYTOSIS:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Define phagocytosis • Explain phagocytosis by neutrophils • Explain phagocytosis by macrophages 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> • Explain the killing of bacteria by macrophages and neutrophils 				
FUNCTION OF MACROPHAGES IN INFLAMMATION	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Explain histiocytes providing first-line defense against infection • Discuss the role of neutrophils as a second-line defense in inflammation • Define neutrophilia • Explain the role of macrophages in 3rd line defense • Explain the increased production of granulocytes and monocytes helping provide 4th line of defense. • Explain pus formation. 	Physiology	60 minutes	Lecture	MCQS, SEQS
ISLAMIAT	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Describe the concepts of Quran • Explain in detail the verses of Surah Hijrat (Verses of Surah Al-Hujurat Related to Adab Al-Nabi (Verse No. 1-18)). 	Islamiat	60 minutes	Lecture	MCQS, SEQS
WBC DISORDERS	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Define Quantitative & Qualitative Disorders of WBCs & their related Terminologies. 	Pathology	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> Describe the types of WBC Cancers and their related Terminologies. 				
LEUKOPENIA & LEUKEMIAS:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define leukopenia Define leukemia Explain briefly the effect of leukemia on the body. 	Physiology	60 minutes	Lecture	MCQS, SEQS
HEAT COAGULATION TEST	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> Identify coagulable and non-coagulable proteins Detect the presence of coagulable protein in the given sample by heat coagulation test Describe the principle of the reaction taking place in the equipment 	Biochemistry	120 minutes	Practical	OSPE
IMMUNOGLOBULIN -I	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define immunoglobulin Classify immunoglobulin Identify the site of synthesis of Immunoglobulins Define antigen Differentiate between humoral immunity and cell-mediated immunity. Enumerate the functions of each class of immunoglobulins 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

IMPORTANT BLOOD DISORDERS AND THEIR PREVENTIVE STRATEGIES	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Discuss the blood related disorders • Explain the preventive strategies to reduce the illness and disability related to blood disorders 	Community Medicine	60 minutes	Lecture	MCQS
WBC COUNT	At the end of this Practical First Year M.B.B.S. student will be able to; <ul style="list-style-type: none"> • Discuss WBCs functions & types Discuss specific ruling area for WBCs count Demonstrate the method of WBCs estimation by hemocytometer • Demonstrate the steps to measure WBCs in neubar's chamber Practice the slide focus for Neubar's chamber Calculate the number of WBCs 	Physiology	120 minutes	Practical	OSPE
IMMUNOGLOBULIN -II:	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Identify the difference between serum IgA and non-vascular IgA in secretions • Describe the function of the 'secretory component' T-piece in antibodies • Illustrate the structure of immunoglobulin 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
THYMUS	At the end of this lecture, First Year M.B.B.S. students will be able to: <ul style="list-style-type: none"> • Discuss the structure, function of thymus. 	Anatomy	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> Discuss the histological appearance & features of thymus 				
HISTOLOGY OF THYMUS	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> Identify the histological appearance & features of thymus 	Anatomy	120 minutes	Practical	OSPE
IMMUNITY AND ITS TYPES: -	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define immunity List the types of immunity Define antigen Define antibody Identify the plasma cells Explain the pre-processing of B-cell & T-cell Explain innate immunity 	Physiology	60 minutes	Lecture	MCQS, SEQS
T-CELL / CELL-MEDIATED IMMUNITY:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Identify the different types of T-cells Explain the regulatory functions of lymphokines. Describe Helper T-cell immunity Explain Cytotoxic T-cell immunity Define immune tolerance. Define autoimmunity. 	Physiology	60 minutes	Lecture	MCQS, SEQS
HUMORAL / B-CELL IMMUNITY	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Describe humoral immunity List the different types of antibodies Describe the formation of antibodies by plasma cells 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> Describe the role of antibodies in immunity Explain the role of memory cells in enhancing antibody response-primary and secondary response. Explain the direct action of antibodies. Explain the complement system enhancing effect of antibodies. 				
ALLERGIES AND HYPERSENSITIVITY	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Discuss the delayed reaction allergy Explain atopic allergies, i.e anaphylaxis, urticarial, hay fever, asthma 	Physiology	60 minutes	Lecture	MCQS, SEQS
IMMUNIZATION & Red cell indices -	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Explain the active and passive immunization. State the physiologic basis of MCV, MCHC & PCV 	Physiology	120 minutes	Lecture	MCQS, SEQS
CATEGORIES AND TYPES OF RESEARCH	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Explain the categories of research Define the types of research 	Research	60 minutes	Lecture	MCQS
ABO- BLOOD TYPES-I -	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define ABO blood group system Tabulate Nature of OAB system antigens Define the Terms “Agglutinogen”, “Agglutinins” & 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<p>“Agglutination”.</p> <ul style="list-style-type: none"> Identify Titer of agglutinins at different age groups 				
ABO- BLOOD TYPES-II	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Explain Allele or genotype & 4 blood groups & Concept of phenotype Explain the features of mismatched blood grouping Explain the importance of blood grouping List the minor blood groups. List the frequencies of different blood groups. 	Physiology	60 minutes	Lecture	MCQS, SEQS
RH SYSTEM IN BLOOD GROUPING-I	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Identify the importance of D-Antigen. List the types of Rh Antigen. Explain the importance of Rh system in blood transfusion. Discuss the transfusion reactions due to mismatch transfusions. 	Physiology	60 minutes	Lecture	MCQS, SEQS
RH SYSTEM IN BLOOD GROUPING-II:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Explain erythroblastosis fetalis Summarize the prevention and treatment of erthyroblastosis fetalis 	Physiology	60 minutes	Lecture	MCQS, SEQS

<p>HEMOSTAIS:</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Define Hemostasis. • Describe its Stages. • Describe in detail the events of hemostasis stepwise. 	<p>Pathology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS</p>
<p>BLOOD TRANSFUSION -</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Describe different types of blood groups • Explain the principles of blood transfusion • Classify blood products and define their characteristics. • Describe the adequate storage technique and shelf life of blood products • Discuss the indications of different blood products • Describe the indications of blood transfusion. • List the complications of blood transfusion 	<p>Surgery</p>	<p>60 Minutes</p>	<p>Lecture</p>	<p>MCQS</p>
<p>SATURATION TEST</p>	<p>At the end of this Practical First Year M.B.B.S. student will be able to;</p> <ul style="list-style-type: none"> • Detect the presence of albumin and globulin in the given sample of experiment • Name the reagent to be used in the experiment. • Describe the principle of the reaction taking place in the experiment • Record the observation of the sample and control in the experiment. • Detect the presence of the globulin by full saturation 	<p>Biochemistry</p>	<p>120 minutes</p>	<p>Practical</p>	<p>OSPE</p>

	test.				
BLOOD GROUPING & B.T&C. T -	At the end of this Practical First Year M.B.B.S. student will be able to; <ul style="list-style-type: none"> Describe the principle of respective practical Identify the apparatus & reagents used List the precautions Prepare the tile for blood grouping Detect the blood group Demonstrate the Duke's method of the given practical Define bleeding time Estimate the time of bleeding of the given subject 	Physiology	120 minutes	Practical	OSPE
BLEEDING DISORDER •	At the end of this Practical First Year M.B.B.S. student will be able to; <ul style="list-style-type: none"> Explain etiology and pathogenesis of all bleeding disorders Recall clinical presentation and diagnostic tool required to identify the disease Summarize treatment option available for treatment 	Medicine	60 Minutes	Lecture	MCQS
VITAMIN E AND K: -	At the end of this the lecture First Year M.B.B.S. student will be able to; <ul style="list-style-type: none"> List the different forms of vitamin E that occur in nature. Identify the antioxidant property of vitamin E Outline the clinical features of vitamin E 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

	<p>deficiency.</p> <ul style="list-style-type: none"> List the different forms of vitamin K Identify the dietary sources and daily requirements of vitamin K Explain the various functions of vitamin K specially in coagulation process and its deficiencies 				
<p>HEMOSTASIS</p> <p>-</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define the Term “Hemostasis”. List & Define the Steps of Hemostasis. Define thrombopoiesis. Explain the functions of platelets in hemostasis. Name bleeding disorders. Identify the life span and normal platelet count. Categorize Clotting Pathways & Explain the Process of Blood Clotting. Mention the Abnormalities of -Increasing or Decreasing Levels of Platelets. 	Physiology	60 minutes	Lecture	MCQS, SEQS
<p>COAGULATION:</p> <p>-</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Enlist the clotting factors. Identify clotting pathways Explain extrinsic clotting mechanism-clotting cascade Discuss intrinsic clotting mechanism-clotting cascade Explain the role of calcium in clotting. 	Physiology	60 minutes	Lecture	MCQS, SEQS

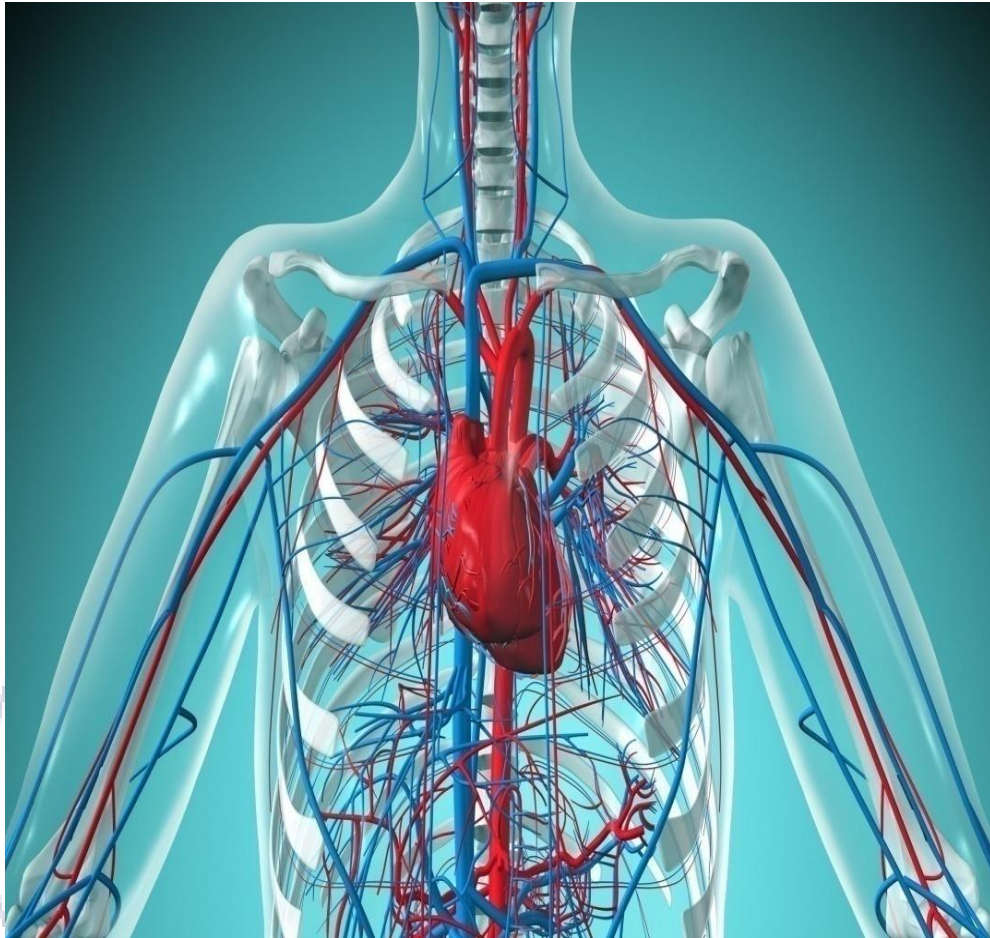
<p>HAEMATOLOGICAL CHANGES DURING PREGNANCY</p> <p>-</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Discuss the haemodynamic changes during pregnancy. • Explain the cause of physiological anemia in pregnancy. • Describe the cause of acute weight gain in pregnancy. 	Gynecology	60 minutes	Lecture	MCQS
<p>LYSIS OF BLOOD CLOTS:</p> <p>-</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Discuss the activation of plasminogen in clot lysis. • Describe hemophilia • Summarize the clotting disorders caused by vitamin-K deficiency. 	Physiology	60 minutes	Lecture	MCQS, SEQS
<p>PLATELET & COAGULATION FACTOR DISORDERS</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Classify Platelet Disorders. • Classify Coagulation Disorders. • Define Hemophilia. • Describe its etiopathogenesis. • Discuss its Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQS
<p>THROMBOCYTOPENIA</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> • Recall etiology and pathogenesis of thrombocytopenia • Demonstrate clinical findings of thrombocytopenia • Restate investigations required for diagnosis and 	Pathology	60 minutes	Lecture	MCQS

	possible treatment options				
Thrombocytopenia	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Recall etiology and pathogenesis of thrombocytopenia Demonstrate clinical findings of thrombocytopenia Restate investigations required for diagnosis and possible treatment options 	Medicine	60 minutes	Lecture	MCQS
Bleeding disorders	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Explain etiology and pathogenesis of all bleeding disorders Recall clinical presentation and diagnostic tool required to identify the disease Summarize treatment option available for treatment 	Medicine	60 minutes	Lecture	MCQS
CLOTTING DISORDER I	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Identify pathogenesis of hereditary and acquired clotting disorders Recall clinical presentation and diagnostic investigations of clotting disorders Tabulate treatment of the disorders 	Medicine	60 minutes	Lecture	MCQS
THROMBOEMBOLIC CONDITIONS:	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define thrombosis. List the causes of 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<p>thromboembolic conditions</p> <ul style="list-style-type: none"> Identify disseminated intravascular condition. Name anticoagulants in clinical use. 				
THROMBOSIS I -	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define Hemostasis. Describe the general sequence of events in Hemostasis. Define Thrombosis. Describe the Factors that predispose to Thrombosis. 	Pathology	60 minutes	Lecture	Mcqs
THROMBOSIS II -	<p>At the end of this the lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> List & Differentiate between the Types of Thrombi. Describe the Fate of Thrombi. Discuss the Clinical Features & Complications of Thrombi. 	Pathology	60 minutes	Lecture	Mcqs
EMBOLISM	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Define Embolus. List & Describe the types of Embolism. 	Pathology	60 minutes	Lecture	Mcqs
DVT & PULMONARY EMBOLISM -	<p>At the end of this the lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define DVT and pulmonary embolism Explain the pathophysiology of DVT and pulmonary embolism List modifiable and non-modifiable risk factors for 	Surgery	60 Minutes	Lecture	Mcqs

	<p>DVT and PE</p> <ul style="list-style-type: none"> Describe clinical presentation of DVT and pulmonary embolism Explain the importance of early identification and prompt treatment of DVT and PE. List the prophylactic measures to prevent DVT and PE. 				
<p>ANTI-COAGULANTS:</p> <p>-</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Explain the role of intravascular anticoagulants. Describe the antithrombin action of fibrin Explain the actions of antithrombin-III Discuss the role of heparin 	Physiology	60 minutes	Lecture	MCQS, SEQS
<p>OVERVIEW OF PHARMACOLOGY OF CLOTTING DISORDERS.</p>	<p>At the end of this lecture, First Year M.B.B.S. students will be able to:</p> <ul style="list-style-type: none"> Outline the physiological role of coagulation cascade. Describe the pathophysiology of clotting disorders Discuss the mechanistic pharmacology of clotting disorders 	Pharma	60 minutes	Lecture	MCQS

CARDIOVASCULAR SYSTEM MODULE



Module IV

*CARDIOVASCULAR
SYSTEM*

INTRODUCTION TO MODULE – IV



Module – IV Cardiovascular System

System	<i>Cardiovascular System</i>
Duration	6 Weeks (From 4 th August 2026 to 11 th September 2026)
Assessment Dates	Monday, 14 th September 2026
Assessment Pattern	MCQs, SEQs & OSPE

*The Assessment pattern and dates are tentative (Subject to change)

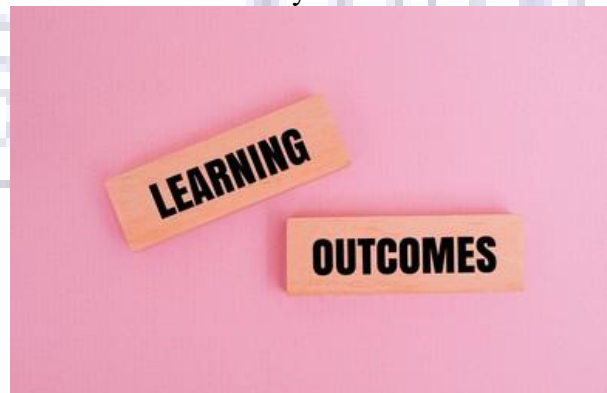
MODULE INTRODUCTION

The Cardiovascular Module provides first-year MBBS students with an integrated understanding of the structure and function of the heart, blood vessels, and blood as a closed circulatory system responsible for delivering oxygen and nutrients and removing metabolic wastes. It combines key concepts from anatomy, histology, embryology, physiology, and biochemistry to explain cardiac structure, development, coronary circulation, cardiac cycle, cardiac output, blood pressure regulation, and myocardial metabolism. The module emphasizes clinical relevance by linking basic sciences with common cardiovascular conditions such as hypertension, atherosclerosis, arrhythmias, and heart failure, enabling students to build a clear foundation for diagnosis and application in clinical practice.

MODULE LEARNING OUTCOMES

At the end of this module, the students of the 1st year MBBS will be able to:

1. Integrate the structural organization, development, and functional mechanisms of the cardiovascular system by correlating concepts from anatomy, physiology, biochemistry, histology, embryology, and other basic sciences to understand normal cardiac function and circulation.
2. Correlate physiological and biochemical processes involved in cardiac muscle activity, hemodynamics, and regulation of blood pressure with the maintenance of cardiovascular homeostasis
3. Relate structural and functional aspects of the heart and blood vessels with pathological mechanisms and clinical manifestations of common cardiovascular diseases through integration of pathology, pharmacology, medicine, surgery, and other allied disciplines.
4. Apply integrated knowledge from basic and clinical sciences to understand the principles of clinical evaluation, investigation, prevention, and basic management of cardiovascular disorders in patients and within the community



II. Alignment Grid

Topics	Learning Objectives	Department	Duration	Teaching Strategy	Assessment
MEDIASTINUM.	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define the sternal angle and its anatomical significance in locating structures in the mediastinum • Describe the anatomical changes at the sternal angle, including the transition from the thoracic inlet to the mediastinum. • Explain the divisions of the mediastinum (superior and inferior) and their respective boundaries • Identify the key structures located within each division of the mediastinum. • Highlight the clinical importance of the mediastinum in relation to diseases and procedures 	Anatomy	60 minutes	Lecture	SEQ/MCQs
PERICARDIUM	<p><u>At the end of lecture students of 1st year MBBS will be able to:</u></p> <ul style="list-style-type: none"> • Describe the layers of pericardium. • Discuss the sympathetic, para-sympathetic • Explain the sinuses formed by the pericardium. • Discuss surgical 	Anatomy	60 minutes	Lecture	SEQ/MCQs

	<p>significance of transverse pericardial sinus</p> <ul style="list-style-type: none"> Describe the applied anatomy of pericardium (Pericarditis, Pericardial rub & Pericardial effusion, Cardiac Tamponade, Pericardiocentesis) 				
PERICARDIAL DISEASES I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define Pericarditis and Describe its etiology. Define Pericardial Effusion and Describe its etiology. Define Cardiac Tamponade and Describe its etiology. 	Pathology	60 minutes	Lecture	MCQs
HEART – 1	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Identify the location and position of heart. Describe the structure of heart. Describe the external features of heart. Discuss percussion & auscultation of heart 	Anatomy	60 minutes	Lecture	SEQ/MCQs
HEART- 2	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Discuss the internal structure of heart. Differentiate between left and right atria and ventricles. 	ANATOMY	60 minutes	Lecture	SEQ/MCQs
VALVES & OPENINGS OF THE HEART	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Describe the structure 	Anatomy	60 minutes		SEQ/MCQs

	<p>of atrio-ventricular, aortic and pulmonary valves.</p> <ul style="list-style-type: none"> Enumerate openings in left and right atria. Discuss the clinical aspects of valves of heart. Define valvular heart diseases 				
VALVULAR HEART DISEASES	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define Rheumatic Heart Disease. Describe its pathophysiology. Define Infective Endocarditis. List its causes. 	Pathology	60 minutes	Lecture	MCQs
VALVULAR HEART DISEASE I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Recognize pathogenic processes leading to valvular heart disease Recite signs and symptoms pointing towards valvular heart disease Explain investigations which help in diagnosis of the disease Develop a treatment plan regarding management of valvular heart disease 	Medicine	60 minutes	Lecture	MCQs
VALVULAR HEART DISEASE II	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Recognize pathogenic processes leading to valvular heart disease 	Medicine	60 minutes	Lecture	MCQs

	<ul style="list-style-type: none"> Recite signs and symptoms pointing towards valvular heart disease Explain investigations which help in diagnosis of the disease Develop a treatment plan regarding management of valvular heart disease 				
DEVELOPMENT OF HEART – I	<p><u>Abnormalities of cardiac looping</u> <u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Explain the formation of cardiac loop Discuss the abnormalities of cardiac looping 	Anatomy	60 minutes	Lecture	SEQ/MCQs
DEVELOPMENT OF HEART- II	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Discuss partitioning of primordial heart Discuss endocardial cushions and heart defects Discuss atrial septal and ventricular septal defects Discuss ectopia cordis & dextrocardia 	Anatomy	60 minutes	Lecture	SEQ/MCQs
ARTERIAL SUPPLY OF THE HEART	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> List the arteries which supply the heart. Define origin, course and branches of the coronary arteries. Discuss the area supplied by left and 	Anatomy	60 minutes	Lecture	SEQ/MCQs

	<p>right coronary arteries.</p> <ul style="list-style-type: none"> • State the venous drainage of heart. • Define Cardiac catheterization, Coronary angiography, Echocardiography, Myocardial Infarction, Coronary artery disease, Angina Pectoris, Coronary Bypass Graft, Coronary Angioplasty 				
DEVELOPMENT OF ARTERIAL SYSTEM	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Describe the development of aortic arches & its derivatives - Explain the developmental defects related with development of arterial system 	Anatomy	60 minutes	Lecture	SEQ/MCQs
GREAT VESSELS OF HEART- I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Describe in detail the arteries and veins that enter and leave the heart. - Identify the course and tributaries of superior and inferior vena cava. - Explain the branches of aorta and arch of aorta. 	Anatomy	60 minutes	Lecture	SEQ/MCQs
DEVELOPMENT OF VENOUS SYSTEM	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Describe the developmental changes in sinus venosus - Discuss the development of vena cava - Explain the developmental defects related with development of venous system 	Anatomy	60 minutes	Lecture	SEQ/MCQs

<p>GREAT VESSELS OF HEART- II</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Describe the branches of pulmonary trunk and distribution of left and right pulmonary arteries. • Discuss the applied anatomy of great vessels. • Define central venous line 	<p>Anatomy</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>
<p>VENOUS SYSTEM-I</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define vein. • List main functions of veins. • Categorize the venous pressure & discuss their contributing factors. • Describe the role of veins as a venous pump. • Explain the function of veins as blood reservoir 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>
<p>VENOUS SYSTEM-II</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define central venous pressure (CVP). • Draw CVP curve. • Explain the effect of gravity on venous pressure. • Identify the importance of venous valve. • Define varicose veins. 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>
<p>HISTOLOGY OF HEART</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Identify the histological 	<p>Anatomy</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>

	features of Cardiac muscles.				
HISTOLOGY OF VESSELS	<u>At the end of this lecture 1st year MBBS students will be able to:</u> - Describe the histological structure of arteries and veins. - Differentiate between artery and vein.	Anatomy	60 minutes	Lecture	SEQ/MCQs
VASCULITIS VARICOSE VEINS/THROM BOPHLEBITIS	<u>At the end of this lecture 1st year MBBS students will be able to:</u> <ul style="list-style-type: none"> • Define Vasculitis • List its Infectious & Non-Infectious causes • Define Varicose Veins & Thrombophlebitis 	Pathology	60 minutes	Lecture	SEQ/MCQs
HEART AS A PUMP	<u>At the end of this lecture 1st year MBBS students will be able to:</u> <ul style="list-style-type: none"> • Differentiate the action potentials of the skeletal & cardiac muscles. 	Physiology	60 minutes	Lecture	SEQ/MCQs
CHEST TRAUMA	<u>At the end of this lecture 1st year MBBS students will be able to:</u> <ul style="list-style-type: none"> • Define chest trauma • Describe different types of chest injuries • Describe the clinical features of different types of chest injuries • List signs and symptoms of respiratory distress like labored breathing, cyanosis, and altered mental status. • Describe ABCDE of trauma 	Surgery	60 minutes	Lecture	SEQ/MCQs
PROPERTIES OF CARDIAC	<u>At the end of this lecture 1st year MBBS students</u>	Physiology	60 minutes	Lecture	SEQ/MCQs

MUSCLES	<p><u>will be able to:</u></p> <ul style="list-style-type: none"> • Lists and define the cardiac muscle properties 				
ACTION POTENTIALS OF CARDIAC MUSCLES	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Enumerate the phases of the action potential of cardiac muscle • Explain plateau phenomenon in ventricular muscle • Compare plateau of ventricular muscle with atria and SA node • Explain refractory period 	Physiology	60 minutes	Lecture	SEQ/MCQs
PLATEAU IN CARDIAC MUSCLE	<p><u>At the end of this SGT 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> -Define plateau in cardiac muscle -Explain the formation of plateau -Explain the role of plateau in increasing refractory period 	Physiology	60 minutes	SGT	SEQ/MCQs
CONDUCTING SYSTEM OF HEART	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define conducting system of heart. - Identify the location and position of SA node, AV node and AV bundle. - Describe the areas supplied by SA, AV nodes and bundle of HIS. <p>Define artificial cardiac pacemaker & fibrillation of heart</p>	Anatomy	60 minutes	Lecture	SEQ/MCQs
DEVELOPMENT OF CONDUCTING	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p>	Anatomy	60 minutes	Lecture	SEQ/MCQs

SYSTEM OF HEART	<ul style="list-style-type: none"> Describe the development of conducting system of heart. 				
RHYTHMIC EXCITATION OF THE HEART	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Name the pace make of the heart List the conductive system of the heart Explain the conduction of impulse from SA node to the base of the heart Define ectopic pacemaker of heart. 	Physiology	60 minutes	Lecture	SEQ/MCQs
REGULATION OF HEART PUMPING I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define frank starling law Describe bain-bridge reflex Discuss the parasympathetic effect on heart Explain the sympathetic effect on heart Identify the effects of Ca^{2+}, K^{+} and temperature on heart 	Physiology	60 minutes	Lecture	SEQ/MCQs
NORMAL HEART RATE AND ARRHYTHMIAS I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define normal heart rate, tachycardia and bradycardia. - Define arrhythmias. - List and summarize types of heart blocks. - Define atrial & ventricular flutter and fibrillation. Explain re-entry phenomenon- circus 	Physiology	60 minutes	Lecture	SEQ/MCQs

	movement				
FETAL CIRCULATION	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Describe fetal circulation - Explain the developmental defects related with fetal circulation 	Anatomy	60 minutes	Lecture	SEQ/MCQs
CONGENITAL HEART DISEASES	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <p>Introduction to Congenital heart Diseases</p>	Peads	60 minutes	Lecture	MCQs
CONGENITAL HEART DISEASES	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define congenital heart diseases - Discuss the risk factors of congenital heart diseases - List the common types of congenital heart diseases. - Describe the normal and fetal heart function - Explain natural history of CHD in adults - List the complications of congenital heart diseases 	Peads Surgery	60 minutes	Lecture	MCQs
CORONARY CIRCULATION	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Recognize the percentage of cardiac output in coronary circulation. - Discuss the cardiac muscle compression causing changes in 	Physiology	60 minutes	Lecture	SEQ/MCQs

	<p>coronary circulation during systole and diastole.</p> <p>- Explain the autoregulation of coronary circulation.</p>				
CARDIAC CYCLE – I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <p>- Define cardiac cycle, systole and diastole.</p> <p>- Calculate the duration of cardiac cycle.</p> <p>- List & define the phases & events of cardiac cycle.</p>	Physiology	60 minutes	Lecture	SEQ/MCQs
CARDIAC CYCLE – II	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> ● List & define the volume changes during cardiac cycle. ● Relate the volume changes with the phases of cardiac cycle. ● Explain the ventricular pressure changes during cardiac cycle. ● Define stroke volume output, end-systolic volume, end-diastolic volume and ejection fraction 	Physiology	60 minutes	Lecture	SEQ/MCQs
CARDIAC CYCLE-III	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> ● Correlate the events of cardiac cycle with the ECG. ● Correlate the events of cardiac cycle with the heart sounds. ● Name the atrial pressure waves. ● Explain the aortic pressure curve. ● -Draw and explain the 	Physiology	60 minutes	SGT	SEQ/MCQs

	<p>graphical analysis of ventricular pumping-work output of the heart.</p> <ul style="list-style-type: none"> • Define pre-load, after-load and cardiac efficiency. 				
CARDIAC CYCLE	<p><u>At the end of this SGT 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Draw the ventricular pressure curve during cardiac cycle • Draw ventricular volume curve • Draw atrial pressure curve during cardiac cycle 	Physiology	60 minutes	SGT	SEQ/MCQs
ELECTROCARDIOGRAM (ECG)-I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define electrocardiogram “ECG” • List ECG waves • Define intervals and segments • Explain the development of depolarization & repolarization waves. • Explain how ECG can be helpful in the diagnosis of various cardiovascular disorders. 	Physiology	60 minutes	Lecture	SEQ/MCQs
VECTORIAL ANALYSIS I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define “vector”. • Explain the concept of vector direction in ECG. • Describe the vectorial analysis in terms of potential determination. • Relate the ventricular 	Physiology	60 minutes	Lecture	SEQ/MCQs

	<p>potential changes with the development of “QRS complex” & “T” waves on ECG.</p> <ul style="list-style-type: none"> Relate the atrial potential changes with the development of Atrial “P” & “T” waves on ECG. 				
<p>ECG – II CALCULATION OF MEAN ELECTRICAL AXIS OF QRS I</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Identify the right axis deviation in the ECG. Identify the left axis deviation in the ECG. Name the conditions that cause axis deviation. Identify axis deviation in bundle branch block. Name the condition that increases/decreases voltages in QRS complexes. Define current of injury. Identify J-point. Identify T-wave inversion in coronary ischemia. Recognize acute myocardial infarction and differentiate it from old infarction. 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>
<p>ECG – AXIS CALCULATION</p>	<p><u>At the end of this SGT 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> -Calculate electrical axis in the given ECG -Identify J point in the given ECG 	<p>Physiology</p>	<p>60 minutes</p>	<p>Activity</p>	<p>SEQ/MCQs</p>

ELECTROCARDIOGRAPHY	<u>At the end of this activity 1st year MBBS students will be able to:</u> <ul style="list-style-type: none"> - Identify normal waves and intervals of heart - Interpret heart rate of any given ECG - Compute the rhythm of the heart as normal or Abnormal 	Physiology	60 minutes	Lecture	SEQ/MCQs
ELECTROCARDIOGRAPHY	<u>At the end of this lecture 1st year MBBS students will be able to:</u> <ul style="list-style-type: none"> • Identify normal waves and segments and intervals of ECG • Calculate heart rate in the ECG of patients • Interpret cardiac rhythm on ECG classify it as regular or irregular and sort out that the rhythm is normal sinus rhythm or not 	Medicine	60 minutes	Lecture	MCQs
CARDIAC MUSCLES	<u>At the end of this practical 1st year MBBS students will be able to:</u> <ul style="list-style-type: none"> • Explain the structure of cardiac muscle • Identify the slide of cardiac muscles 	Histology	120 minutes	Lecture	SEQ/MCQs
CARDIAC ENZYMES	<u>At the end of this lecture 1st year MBBS students will be able to:</u> <ul style="list-style-type: none"> • Identify the different enzymes useful in diagnosis of acute myocardial infarction • Describe the interpretations of the pattern of enzymes in Myocardial Infarction. 	Biochemistry	60 minutes	Lecture	SEQ/MCQs
RHYTHM	<u>At the end of this lecture</u>	Medicine	60 minutes	Lecture	MCQs

ABNORMALITIES	<p><u>1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Identify normal sinus rhythm at ECG Classify rhythm abnormalities as bradyarrhythmia and tachyarrhythmia 				
CHOLESTEROL CHEMISTRY I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Describe the structure of cholesterol. State the normal range of cholesterol in blood Discuss the biomedical importance of Cholesterol. 	Biochemistry	60 minutes	Lecture	SEQ/MCQs
CARDIAC OUTPUT I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define cardiac output & the cardiac index with their values. Define venous return & detailed account of its regulation Explain the inter-relationship between the venous return and cardiac output. Name the methods of measuring cardiac output. 	Physiology	90 minutes	Lecture	SEQ/MCQs
CHOLESTEROL METABOLISM	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Discuss the synthesis of cholesterol List the tissues in which cholesterol biosynthesis takes place Discuss the importance of rate 	Biochemistry	60 minutes	Lecture	SEQ/MCQs

	limiting step in cholesterol synthesis & describe its regulation				
ISCHEMIC HEART DISEASES (IHD) I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define Ischemic Heart Diseases. • Describe the etiopathogenesis of IHD. • Classify the Types (Clinical Syndromes) of IHD. • Define Atherosclerosis. • Describe its Pathophysiology. • Describe the Morphology of an Atherosclerotic Plaque. 	Pathology	60 minutes	Lecture	MCQs
ISCHEMIC HEART DISEASES (IHD) II	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define Angina Pectoris. • Describe its Types with their etiology and Clinical Manifestations & Complications. • Define Myocardial Infarction (MI). • Describe its etiopathogenesis. • Discuss its Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQs
AUSCULTATION OF HEART SOUNDS AND APEX BEAT (PRACTICAL)	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define heart sound. - Auscultate different areas 	Physiology	120 minutes	Practical	SEQS/OSP E

	<p>of heart sounds</p> <ul style="list-style-type: none"> - Locate & measure the apex beat - Identify cardiac murmurs 				
<p>ECG MACHINE & LEADS (PRACTICAL)</p>	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - List the requirement for recording ECG. - Mention the names of leads and electrodes with its placement. - Describe the protocol for performing ECG. - Explain the voltage & time calibration on ECG paper. - List ECG leads & compares deflection with the location of leads. - Calculate the heart rate and P-R interval by using electrocardiogram 	<p>Physiology</p>	<p>120 minutes</p>	<p>Practical</p>	<p>SEQS/OSP E</p>
<p>TEST FOR CHOLESTEROL BY FERRIC CHLORIDE ACETIC ACID REAGENT (PRACTICAL)</p>	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Detect the presence of cholesterol in a given sample by ferric chloride reagent - Describe the principle of the reaction - Record the observations 	<p>Biochemistry</p>	<p>120 minutes</p>	<p>Lecture</p>	<p>OSPE</p>
<p>ISCHEMIC HEART DISEASES (IHD) I</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Describe the etio-pathogenesis of Ischemic Heart Diseases • Explain various clinical presentation of Ischemic Heart Diseases. 	<p>Medicine</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>

<p>ISCHEMIC HEART DISEASE II</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Discuss etiology and pathogenesis of ischemic heart disease • Explain various clinical presentations of ischemic heart disease 	<p>Medicine</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQs</p>
<p>BASIC INTERPRETATION OF X-RAY CHEST</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • will be able to know the imaging anatomy & position of various structures of thorax • will be able to know how to interpret X-ray Chest PA view 	<p>Radiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQs</p>
<p>ISCHEMIC HEART DISEASES (IHD) II</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define Angina Pectoris. • Describe its Types with their etiology and Clinical Manifestations & Complications. • Define Myocardial Infarction (MI). • Describe its etiopathogenesis. • Discuss its Clinical Manifestations & Complications. 	<p>Patho</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQs</p>
<p>ISCHEMIC HEART DISEASE II</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Sort out various investigations required for diagnosis of IHD 	<p>Medicine</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQs</p>

	<ul style="list-style-type: none"> Summarize treatment of ischemic heart disease 				
FACTORS REGULATING CARDIAC OUTPUT	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Associate the role of nervous system in regulation of C.O. Explain the role of preload on C.O. Explain the role of cardiac contractility on C.O. Explain the role of after-load on C.O. 	Physiology	60 minutes	Lecture	SEQ/MCQs
MYOCARDIAL INFARCTION	<p><u>At the end of this Lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define infarction Differentiate infarction from ischemia Identify ECG changes in left sided block Identify ECG changes in right sided block 	Physiology	60 minutes	Lecture	SEQ/MCQs
CHOLESTEROL DEGRADATION	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Explain the metabolic fate of cholesterol in the body. Discuss the formation and functions of bile acids and bile salts 	Biochemistry	60 minutes	Lecture	SEQ/MCQs
HEART SOUNDS I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define heart sounds. Relate the heart sounds with movement of valves & with cardiac events. Define “murmurs”, list the abnormalities that 	Physiology	60 minutes	Lecture	SEQ/MCQs

	produce murmur.				
SODIUM & POTASSIUM METABOLISM-	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> ▪ Describe the normal levels, distribution, and dietary sources of sodium and potassium ▪ Explain their biochemical roles in nerve conduction, muscle contraction, fluid balance, acid-base regulation, and enzymatic functions ▪ Identify electrolytes imbalances including hypo & hyper natremia, hypo & hyperkalemia ▪ Correlate sodium and potassium imbalance with clinical conditions 	Biochemistry	60 minutes	Lecture	SEQ/MCQs
HYPERCHOLESTEROLEMIA AND ATHEROSCLEROSIS	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define hypocholesterolemia and describe its biochemical basis. • Identify the causes of hypocholesterolemia, including genetic disorders, malabsorption syndromes, and hyperthyroidism. • Explain the role of cholesterol in the body and the consequences of its deficiency. • Discuss the clinical 	Biochemistry	60 minutes	Lecture	SEQ/MCQs

	<p>manifestations and potential health implications of hypocholesterolemia.</p> <ul style="list-style-type: none"> Describe the diagnostic markers used to assess cholesterol level 				
CIRCULATORY SYSTEM I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define blood circulation. - List the importance / functions of circulatory system. - List & define the functional parts / components of circulatory system. - List the types of circulation (systemic and pulmonary). - Enumerate the volume of blood in different parts of circulation. 	Physiology	60 minutes	Lecture	SEQ/MCQs
CIRCULATORY SYSTEM II	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Recognize the cross-sectional areas and velocities of blood flow - Explain the pressure in various portions of circulation - Identify the functions of capillaries - List & define the basic principles of circulation 	Physiology	60 minutes	Lecture	SEQ/MCQs
INTRODUCTION TO PLASMA LIPOPROTEINS	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define plasma lipoproteins and 	Biochemistry	60 minutes	Lecture	SEQ/MCQs

	<p>explain their general structure and composition.</p> <ul style="list-style-type: none"> ▪ Describe the classification of lipoproteins based on density (Chylomicrons, VLDL, LDL, and HDL). ▪ Explain the role of apolipoproteins in lipoprotein metabolism and function. 				
<p>INDIVIDUAL LIPOPROTEINS : STRUCTURE, FUNCTIONS, AND METABOLISM</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Describe their structure, composition, and synthesis in the intestines. • Explain their role in the transport of dietary triglycerides (exogenous pathway). • Discuss their metabolism, including the role of lipoprotein lipase (LPL) in triglyceride hydrolysis. • Explain VLDL synthesis in the liver and its function in endogenous triglyceride transport. • Describe the conversion of VLDL into IDL and LDL 	<p>Biochemistry</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>

	through lipoprotein lipase activity.				
PREVENTIVE CARDIOLOGY	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Describe the epidemiology of cardiovascular diseases - List the risk factors of cardiovascular diseases - Discuss the preventive approaches for cardiovascular diseases 	Community Medicine	60 minutes	Lecture	MCQs
CARDIO MYOPATHIES	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define Cardiomyopathy. - List its Types & describe their pathophysiology. - Define Myocarditis. 	Pathology	60 minutes	Lecture	MCQs
INDIVIDUAL LIPOPROTEINS : STRUCTURE, FUNCTIONS, AND METABOLISM	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <p>Low-Density Lipoprotein (LDL):</p> <ul style="list-style-type: none"> • Explain its role as the major carrier of cholesterol in the blood. • Discuss the importance of LDL receptors in cholesterol homeostasis. • Explain the role of oxidized LDL in atherosclerosis and cardiovascular diseases. 	Biochemistry	60 minutes	Lecture	SEQ/MCQs

	<p>High-Density Lipoprotein (HDL):</p> <ul style="list-style-type: none"> Describe its synthesis in the liver and intestines. Explain its role in reverse cholesterol transport (RCT) and its protective role in cardiovascular health. Discuss how high HDL levels are associated with reduced risk of atherosclerosis. 				
OVERVIEW OF PHARMACOLOGY OF HYPERLIPIDEMIA	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define Hyperlipidemia. List the types of Hyperlipidemia. Describe the pathophysiology of hyperlipidemia. <p>Discuss the mechanistic pharmacology of hyperlipidemia.</p>	Pharmacology	60 minutes	Lecture	MCQs
ATHEROSCHLEROSIS	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define Atherosclerosis - Describe its Pathophysiology - List its Complications 	Pathology	60 minutes	Lecture	MCQs
BLOOD FLOW	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Identify determinants of blood flow 	Physiology	60 minutes	Lecture	SEQ/MCQs

	<ul style="list-style-type: none"> - Categorize the types of blood flow - State ohm's law in determining the blood flow - List the methods for recording the blood flow - Explain Reynold's phenomenon 				
ARTERIAL PULSE	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Identify Arterial pulse - Explain protocol for measuring arterial pulse 	Physiology	120 minutes	Practical	SEQS/OSPE
CLINICAL SIGNIFICANCE OF PLASMA LIPOPROTEINS IN HEALTH AND DISEASE	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> ▪ Explain the biochemical role of LDL in atherosclerosis, including the process of LDL oxidation, foam cell formation, and plaque development in blood vessels. ▪ Discuss the biochemical basis of dyslipidemias, including hyperlipoproteinemias & hypolipoproteinemias, their genetic and metabolic causes, and their effects on lipid metabolism. 	Biochemistry	60 minutes	Lecture	SEQs/MCQS
HISTOLOGY OF ARTERY	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • - Explain the structure of artery • -Identify the slide of artery 	Histology	120 minutes	Practical	SEQS/OSPE

<p>INTRODUCTION TO FLUID AND ELECTROLYTE BALANCE I</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Identify the different body compartments • Define “transcellular fluid” • List the types of solutes present in the body Fluids • Discuss electrolyte composition of Extracellular fluid and Intracellular fluid • Identify the chief cation in Extracellular fluid and Intracellular fluid 	<p>Biochemistry</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>
<p>PRESSURE IN CIRCULATORY SYSTEM I</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define blood pressure. • Explain the Korotokoff sound. • Explain the clinical importance of blood pressure. • Explain the effects of pressures on vascular resistance. • Define law of laplace. • Define vascular shear stress 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>
<p>MOVEMENT OF WATER AND ELECTROLYTES BETWEEN COMPARTMENTS</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Recognize the properties of vessel wall and cellmembrane with regards to water and electrolyte movements • Describe the mechanism of movement of electrolytes mainly of 	<p>Biochemistry</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>

	<p>sodium and potassium.</p> <ul style="list-style-type: none"> Describe Starling hypothesis- 				
RESISTANCE	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Cite the units of resistance. Define resistance. Recognize the conductance of blood in relation to resistance. State Poiseuille's law. 	Physiology	60 minutes	Lecture	SEQ/MCQs
RESISTANCE AND BLOOD FLOW I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Explain the importance of fourth power law in determining arteriolar resistance. Classify flow in blood vessels Classify resistance of blood flow in series and parallel circuits. Identify the importance of blood hematocrit and viscosity on vascular resistance and blood flow. 	Physiology	60 minutes	Lecture	SEQ/MCQs
VASCULAR COMPLIANCE AND CONDUCTANCE	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define vascular distensibility. - Define vascular compliance. - Explain the effect of autonomic nerves on volume-pressure relationship. - Explain delayed compliance in vessels. - Explain arterial 	Physiology	60 minutes	Lecture	SEQ/MCQs

	pulsations.				
MICROCIRCULATION	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define Microcirculation along with its function List the Starling forces causing fluid exchange across the capillary Explain the net filtration pressure with the help of starling forces Define interstitial fluid 	Physiology	60 minutes	Lecture	SEQ/MCQs
LYMPHATIC SYSTEM	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> List the function of lymphatic system. Describe Formation of lymph. List the composition of lymph. Explain the importance of lymphatic pump. -Define lymphatic system and lymph flow. Explain the importance of lymphatic system in controlling interstitial fluid. 	Physiology	60 minutes	Lecture	SEQ/MCQs
NORMAL WATER AND ELECTROLYTE BALANCE	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <p>List the various sources of water intake</p> <ul style="list-style-type: none"> Define “metabolic water” Describe the processes of output of water Define “obligatory losses” Differentiate between “insensible and 	Biochemistry	60 minutes	Lecture	SEQ/MCQs

	<p>“sensible perspiration”</p> <ul style="list-style-type: none"> Define “minimal excretory volume”. Discuss the factors determining minimum excretory volume. Define “internal circulation of salts” by GIT and Kidneys 				
CARDIOVASCULAR PHYSIOLOGY OF PREGNANCY	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Explain the reason of increase heart rate during normal pregnancy Describe the changes in plasma volume and red cell mass Appreciate the changes in cardiac output throughout pregnancy and labour 	Gynea	60 minutes	Lecture	MCQs
REGULATORY MECHANISMS OF FLUID AND ELECTROLYTE BALANCE	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> List the regulatory mechanisms that operate to maintain homeostasis Describe the involvement of thirst stimuli. Identify the hormones that maintain the level of water and sodium. Explain the role of kinins and atrial natriuretic peptide in water and electrolyte balance. 	Biochemistry	60 minutes	Lecture	SEQ/MCQs
CIRCULATORY CHANGES DURING EXERCISE	<p><u>At the end of this activity 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> State total circulatory re-adjustments during 	Physiology	60 minutes	Lecture	SEQ/MCQs

	<p>exercise</p> <ul style="list-style-type: none"> • Define changes in arterial blood pressure during exercise • Explain changes in cardiac output during exercise 				
LOCAL CONTROL OF BLOOD FLOW-I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define local blood flow with its importance. • Categorize & define the phases of control of local blood flow. 	Physiology	60 minutes	Lecture	SEQ/MCQs
LOCAL CONTROL OF BLOOD FLOW-II	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • List the different theories for acute control of local blood flow. • - Describe vasodilator theory and metabolic theory (auto-regulation) for local regulation of blood flow. • - Define active and reactive hyperaemia. • - Describe long term control of local blood flow. • - Explain long term regulation of local blood flow. • - List the hormones and their effects in local control of blood flow 	Physiology	60 minutes	Lecture	SEQ/MCQs
ACUTE ARTERIAL BLOOD PRESSURE	<ul style="list-style-type: none"> • <u>At the end of this lecture 1st year MBBS students will be able to:</u> 	Physiology	60 minutes	Lecture	SEQ/MCQs

<p>(ABP) REGULATION</p>	<ul style="list-style-type: none"> - Define arterial blood pressure. - Define pulse pressure and mean arterial pressure. - Calculate mean arterial pressure. - List the short term (Acute) regulators of ABP. - Identify the role of autonomic nervous system (ANS) in acute regulation of ABP. Explain the role of vasomotor center in control of ABP. Explain baroreceptor reflex in acute regulation of ABP. Explain the resetting phenomenon for baroreceptors. 				
<p>OTHER REGULATORS OF ACUTE ARTERIAL BLOOD PRESSURE (ABP)-I</p>	<ul style="list-style-type: none"> <u>At the end of this lecture 1st year MBBS students will be able to:</u> Explain chemoreceptor reflex. Explain the atrial and pulmonary artery reflexes in acute ABP. Explain the volume reflex. Identify the role of atrial natriuretic peptide(ANP) in volume reflex. Explain bain-bridge reflex. 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>SEQ/MCQs</p>
<p>CONGESTIVE CARDIAC FAILURE I</p>	<ul style="list-style-type: none"> <u>At the end of this lecture 1st year MBBS students will be able to:</u> Explain pathogenic 	<p>Medicine</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQs</p>

	<p>process of congestive cardiac failure</p> <ul style="list-style-type: none"> • Demonstrate clinical presentation of congestive cardiac failure • Identify Investigation required for diagnosis and develop a treatment plan for the disease 				
CONGESTIVE CARDIAC FAILURE II	<ul style="list-style-type: none"> • <u>At the end of this lecture 1st year MBBS students will be able to:</u> • Explain pathogenic process of congestive cardiac failure • Demonstrate clinical presentation of congestive cardiac failure • Identify Investigation required for diagnosis and develop a treatment plan for the disease 	Medicine	60 minutes	Lecture	MCQs
OTHER REGULATORS OF ACUTE ARTERIAL BLOOD PRESSURE (ABP)-II	<ul style="list-style-type: none"> • <u>At the end of this lecture 1st year MBBS students will be able to:</u> • - Explain CNS- ischemic response and its importance as a last ditch response during shock. • - Define cushing reaction. 	Physiology	60 minutes	Lecture	SEQ/MCQs
OVERVIEW OF PHARMACOLOGY OF HYPERTENSION	<ul style="list-style-type: none"> • <u>At the end of this lecture 1st year MBBS students will be able to:</u> • Define hypertension. 	Pharmacology	60 minutes	Lecture	MCQs

	<ul style="list-style-type: none"> Describe the pathophysiology of hypertension. Discuss the mechanistic pharmacology of hypertension.. 				
INTERMEDIATE REGULATORS OF ACUTE BLOOD PRESSURE (ABP)	<ul style="list-style-type: none"> <u>At the end of this lecture 1st year MBBS students will be able to:</u> List the Intermediate regulators of Acute blood pressure (ABP) Explain stress relaxation Explain capillary fluid shift mechanism Explain the integrated response according to time. 	Physiology	60 minutes	Lecture	SEQ/MCQs
AIR WAY MANAGEMENT	<ul style="list-style-type: none"> <u>At the end of this lecture 1st year MBBS students will be able to:</u> Describe the anatomy of airway Explain the signs and symptoms of airway obstruction. Recognizing potential airway risks based on patient presentation and medical history. Explain Basic airway management techniques(Head-tilt chin-lift maneuver, Jaw thrust maneuver,Proper positioning for airway maintenance, Use of oropharyngeal 	Anaesthesia	60 minutes	Lecture	MCQs

	airways)				
CARDIOVASCULAR EXERCISE – PRINCIPLES & GUIDELINES	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> ● -Discuss how to design cardiovascular program and what kind of exercises should be included in it. ● - Explain how to monitor your heart rate during cardiovascular exercises. 	Community Medicine	60 minutes	SGT	MCQs
CIRCULATORY SHOCK (CS) I	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> - Define circulatory shock. - List the stages of circulatory shock. - Explain how non-progressive shock changes into progressive one -Describe other pathophysiological aspects of CS 	Physiology	60 minutes	Lecture	SEQ/MCQs
CIRCULATORY SHOCK (C.S) II & HEART FAILURE	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> ● Name the types of CS ● Explain hypovolemic, septic, anaphylactic, neurogenic & cardiogenic shock. ● Define heart failure especially low output cardiac failure ● Explain edema of left sided cardiac failure 	Physiology	60 minutes	Lecture	SEQ/MCQs
SHOCK	<p><u>At the end of this SGT 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> ● Differentiate hypovolemic shock with cardiac shock ● List the different types 	Physiology	60 minutes	SGT	SEQS/OSP E

	<p>of hypovolemic shock with examples</p> <ul style="list-style-type: none"> List the causes of cardiogenic shock <p>-Describe compensation of shock</p>				
SHOCK	<p><u>At the end of this SGT 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define Shock. List the three main types of Shock. Describe the cause of each type. Discuss some of the Clinical Features & Complications of Shock. 	Pathology	60 minutes	SGT	SEQS/OSP E
TYPES &MANANGEMENT OF SHOCK	<p><u>At the end of this SGT 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define shock. Explain the pathophysiology of shock. Label the cardiovascular and metabolic characteristics of shock. Classify the clinical features of shock. 	Surgery	60 minutes	SGT	MCQs
HYPERTENSION	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Recognize risk factors and etiology of primary and secondary hypertension 	Medicine	60 minutes	Lecture	MCQs

	<ul style="list-style-type: none"> Summarize common clinical findings in hypertensive patients Recall investigations required before prescribing antihypertensive drugs Discuss use of antihypertensive drugs Describe the procedure of checking blood pressure by the help of sphygmomanometer 				
HYPERTENSION	<p><u>At the end of this SGT 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define hypertension List the causes of hypertension List the different types of hypertension Summarize treatment options in hypertension 	Physiology	60 minutes	SGT	SEQ/MCQs
HYPERTENSION	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> Define Hypertension. List the Causes & Risk Factors of Hypertension. Classify Hypertension. Describe each type with their pathophysiology. Discuss the Clinical Manifestations & Complications of 	Pathology	60 minutes	Lecture	MCQs

	Hypertension.				
LONG TERM CONTROL OF ARTERIAL BLOOD PRESSURE (ABP)	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define renin-angiotensin aldosterone system. • Draw a flow diagram showing renin-angiotensin aldosterone system. • Define juxta glomerular (JG) apparatus. • Explain the role of rennin in renin-angiotensin aldosterone system. • Explain the mechanism of long term regulation of ABP. 	Physiology	60 minutes	Lecture	SEQ/MCQs
BLOOD PRESSURE RECORDING (PRACTICAL)	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • List the requirements for recording blood pressure. • Describe the methods to perform blood pressure. • Predict the normal range of blood pressure. • Describe the methods to perform blood pressure. • Identify the precautions taken while performing blood pressure. 	Physiology	120 minutes	Practical	OSPE
JUGULAR VENOUS PRESSURE(JVP)	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p>	Physiology	120 minutes	Practical	OSPE

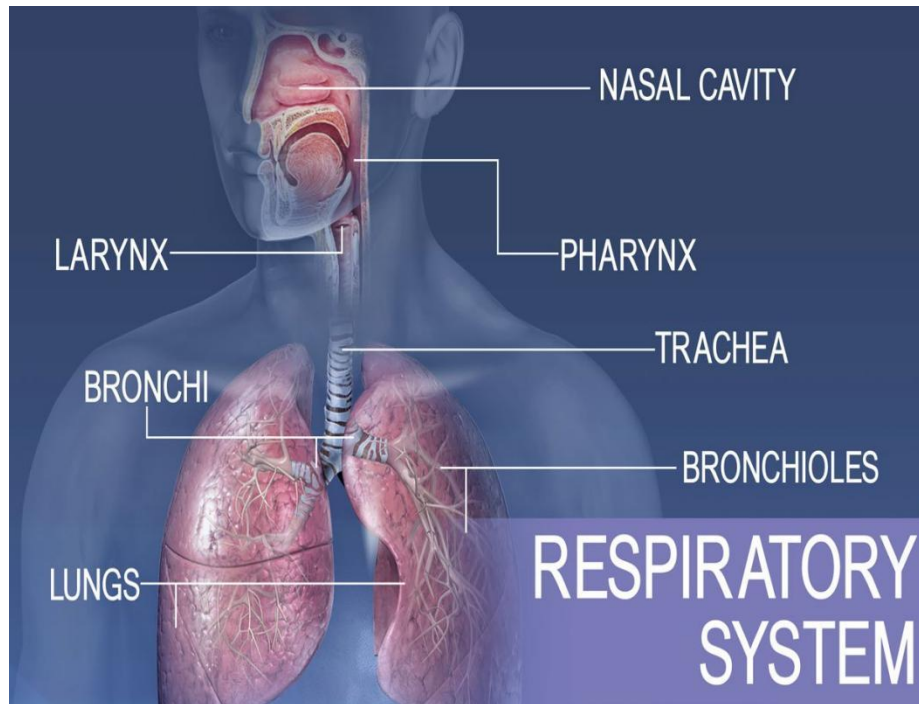
	<ul style="list-style-type: none"> • Demonstrate the proper position of subject • Examine the three ascending and descending waves of raised JVP • Memorize the precautions while examining the subject • List the clinical causes of raised JVP 				
HISTOLOGY OF VEIN	<p><u>At the end of this practical 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Explain the structure of vein • Identify the slide of vein 	Histology	120 minutes	Practical	OSPE
HEART MODEL	<p><u>At the end of this activity 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Identify the various features of heart 	Anatomy	60 minutes	Activity	SEQS/OSPE
HEMORRHAGE	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define haemorrhage • Describe types of haemorrhage • Discuss the causes of haemorrhage • List the risk factors • Recognizing the signs and symptoms of types of haemorrhage • Identify the site of haemorrhage • Describe the basic steps to arrest haemorrhage 	Surgery	60 minutes	Lecture	MCQs
APPROACH TO A PATIENT WITH CHEST	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p>	Family Medicine	60 minutes	Lecture	MCQs

<p>PAIN IN PRIMARY CARE FAMILY MEDICINE CLINIC</p>	<ul style="list-style-type: none"> • Define Ischemic heart disease • Discuss common causes of chest pain • Describe Risk factors associated with cardiac chest pain • Use of medical equipment in identifying different heart sounds AND ECG Machine 				
<p>ACID BASE DISORDERS</p>	<p><u>At the end of this lecture 1st year MBBS students will be able to:</u></p> <ul style="list-style-type: none"> • Define normal pH range in the blood. • Explain the role of the bicarbonate buffer system in maintaining pH balance. • Describe the relationship between respiration and blood CO₂ levels impacting pH. • Define acidosis and alkalosis • Describe the different types of acid-base imbalances (metabolic acidosis, metabolic alkalosis, respiratory acidosis, respiratory alkalosis) • Explain the underlying physiological mechanisms causing these imbalances • Describe the compensatory mechanisms the body 	<p>Surgery</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQs</p>

	initiates to maintain pH balance				
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Respiratory Module



Module V

*Respiratory
Module*

INTRODUCTION TO MODULE – V



Module – V

Respiratory Module

stem	Respiratory System
Duration	5Weeks (15 th September 2026 to 16 th October 2026)
Assessment Dates	Monday 19 th October 2026
Assessment Pattern	MCQs, SEQs & OSPE

*The Assessment pattern and dates are tentative (Subject to change)

MODULE INTRODUCTION

The Respiratory Module provides first-year MBBS students with a foundational understanding of the structure, function, development, and clinical significance of the human respiratory system. It covers the anatomy of the respiratory tract, including the nasal cavity, pharynx, larynx, trachea, bronchi, and lungs, along with the embryological development of the system and related congenital anomalies. The module also introduces key physiological concepts such as the mechanics of breathing, lung volumes and capacities, pulmonary ventilation, gas exchange, and regulation of respiration, which are essential for maintaining homeostasis. In addition, students explore the basic mechanisms and causes of common respiratory diseases, including asthma, pneumonia, tuberculosis, chronic obstructive pulmonary disease (COPD), and lung cancer. Community health aspects such as the effects of environmental pollution, smoking, and occupational exposure on respiratory health are also highlighted. Through the integration of basic sciences with clinical correlations, this module provides a strong foundation for understanding respiratory health and disease and prepares students for advanced clinical learning in later years.

MODULE LEARNING OUTCOMES

At the end of this module, the students of the 1st year MBBS will be able to:

1. Integrate the structural organization, development, and functional mechanisms of the respiratory system by correlating concepts from anatomy, physiology, biochemistry, histology, and embryology to understand normal respiration and gas exchange.
2. Correlate physiological and biochemical processes involved in ventilation, pulmonary circulation, transport of respiratory gases, and regulation of respiration with the maintenance of respiratory homeostasis.
3. Relate structural and functional aspects of the respiratory system with pathological mechanisms and clinical manifestations of common respiratory disorders by integrating concepts from pathology, microbiology, pharmacology, medicine, surgery, and other allied health sciences.
4. Apply integrated knowledge from basic and clinical sciences to understand the principles of clinical assessment, investigation, prevention, and basic management of respiratory diseases in individual patients and at the community level.



Alignment grid

Topic	Learning Objectives	Department	Teaching Strategy	Assessment
NOSE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Describe the parts of the nose • Describe the features of each part? • List the structures forming the lateral and medial walls. • Describe the blood supply, nerve supply, and lymphatics of each part? • Describe the functions and gross anatomy of the paranasal sinus 	Anatomy	Lecture	SEQS/MCQs
HISTOLOGY OF THE NOSE	<p><u>At the end of this lecture, 1st year students will be able to:</u> Describe the histological features of the nose</p>	Anatomy	Lecture	SEQS/MCQs
DEVELOPMENT OF UPPER RESPIRATORY TRACT, NOSE & ITS ANOMALIES	<p><u>At the end of this lecture, 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Enumerate the different Parts of the respiratory system • Discuss the formation & development of nose & its anomalies 	Anatomy	Lecture	SEQS/MCQs
LARYNX	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Describe the extent of it • Enlist the cartilage on it • Describe the mucosal folds • Describe the muscle of larynx • Describe the nerve supply and blood supply of larynx 	Anatomy	Lecture	SEQS/MCQs
HISTOLOGY OF LARYNX	<p><u>At the end of this lecture, 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Describe the different layers of larynx • Discuss the histological characteristics of each layer of larynx 	Anatomy	Lecture	SEQS/MCQs

	<ul style="list-style-type: none"> Describe the histological classification of laryngeal cartilage 			
DEVELOPMENT OF LARYNX & ITS ANOMALIES	<p><u>At the end of this lecture, 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Discuss the development of the laryngotracheal tube 	Anatomy	Lecture	SEQS/MCQs
TRACHEA	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Describe the trachea. Name the structures related to it. Enlist the blood and nerve supply and lymphatic drainage. 	Anatomy	Lecture	SEQS/MCQs
DEVELOPMENT OF TRACHEA & ITS ANOMALIES	<p><u>At the end of this lecture, 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Discuss the development of the trachea. Discuss the tracheoesophageal fistula <p>Discuss the tracheal stenosis & atresia.</p>	Anatomy	Lecture	SEQS/MCQs
HISTOLOGY OF TRACHEA	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Describe the structure of trachea and its layer <p>Describe the different layers of trachea and their histological characteristics</p>	Anatomy	Lecture	SEQS/MCQs
HISTOLOGY OF TRACHEA	<p><u>At the end of this practical 1st year students will be able to:</u></p> <p>Identify the slides under the light microscope for its point of identification and location.</p>	Anatomy	Lecture	SEQS/MCQs
RESPIRATORY PASSAGES, COUGH AND SNEEZING REFLEX:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> List respiratory & non-respiratory functions of lungs Define and Explain cough reflex. Define the sneezing reflex. Define yawning <p>Report other protective reflexes of lung especially Hering Beurer inflation reflex</p>	Physio	Lecture	SEQS/MCQs
UPPER AIRWAY DISEASES	<p><u>At the end of this lecture, 1st year students will be able to:</u></p>	Medicine	Lecture	SEQS/MCQs

	<ul style="list-style-type: none"> • Discuss the cause of various upper airway diseases, including rhinitis, pharyngitis, tonsillitis, and laryngitis. • Recall clinical presentations and diagnosis of upper airway diseases • Recite treatment of upper airway disorders. 			
OVERVIEW OF PHARMACOLOGY OF COUGH	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Recall the physiology of the cough reflex. • Discuss the pathophysiology of cough reflex. • Explain the mechanistic pharmacology of cough suppression and relaxants 	Pharma	Lecture	SEQS/MCQs
DEVELOPMENT OF THORACIC WALL MUSCULATURE & DIAPHRAGM WITH ITS ANOMALIES	<p><u>At the end of this lecture, 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Discuss the development of the thoracic wall musculature & diaphragm with its anomalies • Discuss flail chest, thoracotomy & supernumerary ribs. • Discuss the dislocation of ribs. 	Anatomy	Lecture	SEQS/MCQs
THORACIC CAGE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • List the structures of the thoracic cage. • Discuss the inlet and outlet of the thorax. • Enlist the structure passing through it. <p>Discuss thoracic inlet & outlet syndrome.</p>	Anatomy	Lecture	SEQS/MCQs
STERNUM & THORACIC VERTEBRAE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Describe the anatomical position of the sternum. • Enlist the bones in the sternum? • Describe the muscles' attachment and important structures passing around it. 	Anatomy	Lecture	SEQS/MCQs

	<ul style="list-style-type: none"> Describe the location and shape of the sternum Describe the articulations and muscle attachments Define sternal angle. Discuss the clinical significance of the sternum. (sternal biopsy) Discuss the anatomical changes in the sternal angle Discuss the fracture of the sternum. Describe the gross features of the thoracic vertebrae: vertebral body, IV disk, Laminae, pedicles, intervertebral foramina, processes, and important ligaments. <p>Discuss the Fracture of the thoracic vertebrae.</p>			
GENERAL FEATURES OF ATYPICAL & ATYPICAL RIBS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Identify the different parts of an atypical rib. Discuss the features of atypical ribs. Classify the ribs. Identify the different parts of typical rib. Discuss the features of typical ribs. <p>Discuss the fractures of ribs.</p>	Anatomy	Lecture	SEQS/MCQs
JOINTS OF THORACIC CAGE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Classify the joints of the thorax Discuss the different joints of the thoracic cage <p>Identify the structures of the thoracic cavity</p>	Anatomy	Lecture	SEQS/MCQs
INTER COSTAL SPACES & NEUROVASCULAR BUNDLE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Identify the different layers of the thoracic walls 	Anatomy	Lecture	SEQS/MCQs

	<ul style="list-style-type: none"> • Identify Intercostal muscles • Discuss the movements of the thoracic wall. • Discuss the contents of the intercostal spaces • Describe the origin, course, and branches/tributaries of intercostal vessels • Describe the origin, course, and distribution of intercostal nerves • Discuss the branches and course of the internal thoracic artery • Clinically correlate to the thoracic wall & its abnormalities <p>Define thoracocentesis.</p>			
MEMBRANES & DIAPHRAGM	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Discuss the suprapleural membrane and endo-thoracic fascia • Describe the origin and insertion of the diaphragm • Describe the nerve supply & its movement. • Describe the openings of the diaphragm with its contents <p>Discuss the paralysis of diaphragm.</p>	Anatomy	Lecture	SEQS/MCQs
UNDERSTANDING BEHAVIOUR	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define behaviour • Why behaviours differ in same situations • Define attention and concentration • What factors affect attention and concentration <p>How concentration can be improved</p>	B. Sciences	Lecture	SEQS/MCQs
DEVELOPMENT OF BODY CAVITIES	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Identify the intra embryonic mesoderm and its parts • State the division of lateral plate mesoderm into visceral and parietal layers enclosing the intra-embryonic coelom or body cavity • Recognize the cephalo-caudal and 	Anatomy	Lecture	SEQS/MCQs

	<p>transverse foldings of the embryonic disc</p> <ul style="list-style-type: none"> Describe the extent of the intra-embryonic coelom after folding and its divisions into three serous cavities State the derivatives of the visceral and parietal layers of mesoderm 			
PLEURA	<p><u>At the end of this lecture, 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Describe the gross features of pleura. Explain the division of the pleural layers Describe the pleural cavity and the pleural reflections Outline the surface anatomy related to pleural reflections Memorize the nerve supply and blood supply of it. Discuss the clinical application related to the topic Define pleuritis, pneumothorax, hydrothorax, hemothorax, insertion of chest tube, pleuritis. <p>Define pleural pain.</p>	Anatomy	Lecture	SEQS/MCQs
PLUERAL LESIONS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define & Describe the following conditions: Pulmonary Effusion, Hydrothorax, Haemothorax, Pneumothorax, Chylothorax and Chylothorax 	Patho	Lecture	SEQS/MCQs
LUNGS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Enlist the surfaces of the lungs. Differentiate left and right lung. Explain the lobes, fissures and segments of each lung. Describe root of the lungs. Describe the bronco pulmonary segments and their importance Name vascular supply and lymphatic drainage of it. Discuss about the nerve supply to 	Anatomy	Lecture	SEQS/MCQs

	<p>lungs , pulmonary plexus.</p> <ul style="list-style-type: none"> Define Segmental atelectasis, pulmonary embolism, hemoptysis, bronchogenic carcinoma, carcinoma of lung & lung resection. 			
HISTOLOGY OF LUNGS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Discuss the histological structure of the lung Describe the epithelium of lungs 	Histology	Lecture	SEQS/MCQs
HISTOLOGY OF LUNGS	<p><u>At the end of this practical 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Identify the histological features of the lung <p>Identify the epithelium of lungs</p>	Histology	Lecture	SEQS/MCQs
DEVELOPMENT OF LUNG & ITS DEVELOPMENTAL ANOMALIES	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Discuss the formation of Lung Bud Describe the Branches of Bronchi Discuss the different Stages of development of Lung Describe Maturation of Lung Discuss respiratory distress syndrome. Discuss congenital cyst of lung. 	Anatomy	Lecture	SEQS/MCQs
BASIC INTERPRETATION OF X-RAY CHEST	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> will be able to know the imaging anatomy & position of various structures of thorax will be able to know how to interpret X-ray Chest PA view 	Radiology	Lecture	SEQS/MCQs
ALVEOLAR VENTILATION AND DEAD SPACE:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define Ventilation. Calculate the alveolar ventilation. Explain the “Dead Space” with its types Name the methods of Measuring Dead Space. Describe the Effect of Rapid & 	Physio	Lecture	SEQS/MCQs

	Deep Breathing on Alveolar Ventilation.			
MECHANICS OF PULMONARY VENTILATION:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Identifies the muscles of respiration. Define pleural pressure and its changes during respiration. State alveolar pressure. Identify the trans-pulmonary pressure. 	Physio	Lecture	SEQS/MCQs
PULMONARY CIRCULATION, 3 ZONES ACCORDING TO BLOOD FLOW:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define pulmonary circulation. Summarize the zones of pulmonary circulation. Define Ventilation/ Perfusion (V/Q) Ratio & effects of its mismatching. 	Physio	Lecture	SEQS/MCQs
SPIROMETRY:	<p><u>At the end of this practical 1st year students will be able to:</u></p> <p>Determine the vital capacity.</p>	Physio	Practical	SEQS/MCQs
SPECTROPHOTOMETRY (PRACTICAL)	<p><u>At the end of this practical 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define spectrophotometry Identify visible light as part of the electromagnetic spectrum. Quote the application of spectrophotometer Identify the components on the equipment Describe the working of spectrophotometer. Discuss the terms Incident light, transmitted light, transmittance and optical density. Describe Lambert-Beers Law. Discuss the function of spectrophotometer with that of estimating the concentration of biomolecules in a solution 	Biochem	Practical	SEQS/MCQs
PULMONARY VOLUMES AND CAPACITIES:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> List the Components of 	Physio	Lecture	SEQS/MCQs

	<p>Respiration.</p> <ul style="list-style-type: none"> • Explain the Exchange of gases at the respiratory membrane • Recognizes the difference between respiratory zone and conducting zone • List & Define Lung “Volumes” & “Capacities”. 			
COMPLIANCE OF THE LUNGS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define compliance of the lungs • List the factors affecting lung compliance. • Explain the compliance curve. • Explain the Compliance of the lungs and thoracic wall together. <p>Define the work of breathing.</p>	Physio	Lecture	SEQS/MCQs
PHOSPHOLIPIDS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define phospholipids. • Classify the phospholipids • Discuss the functions of phospholipids. • Explain the clinical importance of dipalmitoyl lecithin (DPL) 	Biochem	Lecture	SEQS/MCQs
SURFACTANT	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Explain the principles of surface tension • Explain the role of surfactant • Identify the relation of surface tension and the radius of alveoli. • Explain the effect on absence of surfactant on alveolar radius • Define respiratory distress syndrome. 	Physio	Lecture	SEQS/MCQs
GLYCOLIPIDS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • List important glycolipids of biological importance • Differentiate in a tabular form between cerebrosides and gangliosides 	Biochem	Lecture	SEQS/MCQs
PREVENTION OF RESPIRATORY	<p><u>At the end of this lecture 1st year students will be able to:</u></p>	Community Medicine	Lecture	MCQs

DISEASES	<ul style="list-style-type: none"> List the common respiratory diseases Discuss various strategies and approaches for the prevention of respiratory diseases 			
LUNG INJURY	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define Acute Lung Injury (ALI) & Respiratory Distress Syndrome (ARDS). Describe its etio-pathogenesis. Discuss its Clinical Manifestations & Complications 	Patho	Lecture	MCQs
PULMONARY CAPILLARY DYNAMICS, PULMONARY EDEMA:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define dynamics of pulmonary capillaries. List pressures in different pulmonary vessels. Summarize the zones of pulmonary circulation <p>Summarize the development of pulmonary edema.</p>	Physio	Lecture	SEQS/MCQs
VASCULAR LUNG DISORDERS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define & Describe the following lesions: Pulmonary Embolism, Pulmonary Hemorrhage, Pulmonary Infarction And Pulmonary Hypertension 	Patho	Lecture	MCQs
FATTY ACIDS, GLYCEROL AND ESSENTIAL FATTY ACIDS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define fatty acids and classify them. List the biological of essential fatty acids List the sources and clinical uses of glycerol Recall the structure of triglycerides 	Biochem	Lecture	SEQS/MCQs
BIOLOGICAL OXIDATION-1	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define biological oxidation Explain the process of biological 	Biochem	Lecture	SEQS/MCQs

	<p>oxidation with ATP synthesis</p> <ul style="list-style-type: none"> List the co-enzymes involved in biological oxidation Define electron transport chain. Discuss about mitochondrial electron transport chain. Identify the importance of use of oxygen in electron transport chain. List the site specific inhibitors of electron transport chain and their effects. 			
TRANSPORT OF OXYGEN:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Identifies the role of partial pressure of O₂ in downhill transport of O₂ from the lungs to the tissues(diffusion of oxygen) Explain the stepwise association of oxygen molecule (O₂) with hemoglobin Define the saturation of hemoglobin with oxygen and P₅₀. 	Physio	Lecture	SEQS/MCQs
O₂-HB DISSOCIATION CURVE-I	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> List the stepwise reversible combination of O₂ transport from the lungs to the body tissues. Explain the Oxy – Hb dissociation curve Define the shape of the curve Explain the plotting of the curve Define 50% (P₅₀) saturation of hemoglobin Explain the factor affecting Hb-O₂ curve Enumerate the conditions causing right-ward shift Enumerate the conditions causing left-ward shift 	Physio	Lecture	SEQS/MCQs

<p>O₂-HB DISSOCIATION CURVE-II</p>	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Explain the maximum amount of oxygen which combines with hemoglobin • Explain the maximum amount of O₂ released from hemoglobin in tissues. • Explain the transport of O₂ during exercise • Define utilization coefficient. • Summarize the factors affecting O₂ diffusion. • Define O₂ transport in dissolved state. • Explain the usage of O₂ by the cells. • Identifies the importance of Carbon monoxide Poisoning in Hb-O₂ dissociation curve. • Explain the Bohr's effect. 	<p>Physio</p>	<p>Lecture</p>	<p>SEQS/MCQs</p>
<p>BIOLOGICAL OXIDATION-2</p>	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define oxidative phosphorylation • Discuss the role of Electron Transport chain and oxidative phosphorylation with emphasis on Mitchell's chemiosmotic hypothesis. • Explain the structure of ATP synthase enzyme with the process of ATP production in mitochondria. • Define uncouplers and their biochemical effects 	<p>Biochem</p>	<p>Lecture</p>	<p>SEQS/MCQs</p>
<p>TRANSPORTATION OF CO₂:</p>	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define the average transport of CO₂ from tissues to the lungs • Define the important role of CO₂ in PH regulation of body fluids. • Enumerate the three important 	<p>Physio</p>	<p>Lecture</p>	<p>SEQS/MCQs</p>

	<p>forms of CO₂ Transport from Tissues to the Lungs.</p> <ul style="list-style-type: none"> • Explain the transportation of CO₂ in bicarbonate form. • Describe the Process of “Chloride Shift”. • Define reversal of chloride shift. • Explain the Effects of “Hypo” & “Hyperventilation” on Blood pH • Explain Haldane effect, compare it with Bohr effect 			
PULSE OXIMETER:	<p><u>At the end of this practical 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Explain the normal oxygen saturation in arterial blood • Describe the two things a pulse oximeter can measure • List the parameters that are displayed on a pulse oximeter screen • Enlist the conditions which are not measured by a pulse oximeter • Discuss what should be done when the saturation falls • Review and understand the applicable regulation relative to monitoring pulse oximetry. • List the use of pulse oximetry • Describe patient conditions that may affect pulse oximetry accuracy • Demonstrate a comprehensive patient assessment utilizing pulse oximetry. • List the precautions taken while monitoring pulse oximetry • Demonstrate the procedure of pulse oximetry monitoring 	Physio	Practical	OSPE
INTRODUCTION TO PRACTICALS OF ESTIMATION OF BIOCHEMICAL	<p><u>At the end of this practical 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • List the type of body fluids to estimate the value of a biochemical parameter. 	Biochem	Practical	SEQS/MCQs

<p>PARAMETERS</p>	<ul style="list-style-type: none"> Describe the concept of interpreting a result. Define the terms stock standard solution and sample size. Identify the need for using stock standard solutions Calculate the concentration of stock standard solutions Draw a concentration and optical density graph to construct a 'line of best fit' for the purpose of obtaining the concentration of sample 			
<p>RESPIRATORY CHANGES DURING PREGNANCY</p>	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Memorize the ventilator changes occurring during pregnancy. Explain the blood gases and acid base changes during pregnancy. Describe the ventilator and anatomical changes giving rise to breathlessness in pregnancy. 	Gynea	Lecture	SEQS/MCQs
<p>REGULATION OF RESPIRATION DURING EXERCISE:</p>	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Enlist the Effects of exercise on Respiration and Pulmonary ventilation Correlates the chemical and nervous factors in controlling respiration during exercise. Explain the changes in tissues during exercise. Summarizes effects on Diffusing Capacity for O₂ and consumption of O₂. Summarizes the effects on Oxygen Debt Summarizes effects on V_{O2} Max Define Respiratory Quotient. Define abnormal breathing especially cheyne stroke breathing. 	Physio	Lecture	SEQS/MCQs
<p>NERVOUS REGULATION OF RESPIRATION:</p>	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Summarize the Control 	Physio	Lecture	SEQS/MCQs

	<p>Mechanisms of Breathing.</p> <ul style="list-style-type: none"> • Define Nervous regulation. • List the Respiratory Centers with their Functions. • Describe the Role of “DRG” in “Ramp Signals”. 			
TOBACCO AND ITS EFFECTS ON RESPIRATORY SYSTEM	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Describe the composition of tobacco and its effects on respiratory system • Discuss the strategies for prevention of tobacco use. 	Medicine	Lecture	SEQS/MCQs
CHEMICAL CONTROL OF RESPIRATION:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define peripheral chemoreceptors • Explain the role of Arterial O₂ in chemical control. • Discuss the basic mechanism of stimulation of chemoreceptors by a decrease in PO₂ • Explain the role of chemosensitive area in chemical control. • Discuss the excitation of chemosensitive area, H⁺ concentration directly. • Explain the indirect effect of CO₂ on chemosensitive area 	Physio	Lecture	SEQS/MCQs
INTRODUCTION TO RESTRICTIVE & OBSTRUCTIVE LUNG DISEASES	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define Restrictive & Obstructive Lung Diseases. • List the Diseases which fall into each Category. • Explain their Etiopathogenesis. • Discuss their Clinical Manifestations & Complications. 	Patho	Lecture	SEQS/MCQs
CHRONIC OBSTRUCTIVE LUNG DISEASES (COPD)	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define COPD • Describe the pathophysiology of Emphysema & Chronic 	Patho	Lecture	SEQS/MCQs

	<p>Bronchitis.</p> <ul style="list-style-type: none"> Define the terms Blue Bloaters & Pink Puffers. Discuss their Clinical Manifestations & Complications. 			
COPD	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Recall over all pathogenesis of chronic obstructive pulmonary disease Recognize risk factors and describe pathogenesis of the disease Recite both chronic bronchitis and emphysema as main clinical presentation of the disease Summarize investigations required to diagnose the condition Explain treatment options available for treatment of chronic obstructive pulmonary disease 	Medicine	Lecture	MCQs
ASTHMA	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define Asthma. Describe its pathophysiology. Discuss its Clinical Manifestations & Complications. 	Patho	Lecture	MCQs
EICOSANOIDS, THEIR CLASSIFICATION AND FUNCTIONS IN HEALTH AND DISEASE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define eicosanoids Classify prostaglandins into 4 major groups. Discuss the metabolism of prostaglandins. List the important inhibitors and stimulants of PG synthesis Identify the occurrence and distribution of PGs in the body Discuss the important function of PGs <p>List the functions of other eicosanoids: prostacyclins, thromboxanes,</p>	Biochem	Lecture	SEQS/MCQs

	leukotrienes and lipoxins			
LIPID PEROXIDATION & ITS SIGNIFICANCE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define lipid peroxidation and explain its biochemical basis. • Describe the mechanism of lipid peroxidation, including initiation, propagation, and termination phases. • Identify the major reactive oxygen species (ROS) involved in lipid peroxidation. • Explain the role of free radicals in initiating lipid peroxidation. • Recognize the cellular and physiological consequences of lipid peroxidation. 	Biochem	Lecture	SEQS/MCQs
LIPID PEROXIDATION & ITS SIGNIFICANCE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • List the major biomarkers of lipid peroxidation • Discuss the significance of lipid peroxidation in the pathogenesis of diseases • Describe the body's antioxidant defense mechanisms, including enzymatic (e.g., superoxide dismutase, catalase, glutathione peroxidase) and non-enzymatic (e.g., vitamin E, vitamin C) antioxidants. • Explain the role of lipid peroxidation in membrane damage and cell injury. • Discuss therapeutic approaches to reduce lipid peroxidation and oxidative stress. 	Biochem	Lecture	SEQS/MCQs
ASTHMA	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Recite various risk factors and pathogenesis of asthma • Explain various clinical presentations of asthma • Discuss diagnostic investigations 	Medicine	Lecture	MCQs

	<p>required to identify asthma</p> <p>Describe treatment plan of asthma patient</p>			
HYPOXIA AND O₂ THERAPY:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define Hypoxia, and differentiate hypoxia from Hypoxemia • List the Types of Hypoxia. • Summarize the different types of Hypoxia • Explain O₂ therapy in different types of Hypoxia. <p>Summarize the Benefits of O₂ Therapy in Hypoxia</p>	Physio	Lecture	SEQS/MCQs
HISTOLOGY OF LUNGS	<p><u>At the end of this practical 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Identify the slides under the light microscope for its point of identification and location. 	Anatomy	Practical	SEQS/MCQs
PEAK EXPIRATORY FLOW RATE:	<p><u>At the end of this practical 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Record the peak expiratory flow rate 	Physio	Practical	SEQS/MCQs
OXIDATION OF EVEN CHAIN FATTY ACIDS 1(LIPID METABOLISM)	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Discuss the β-oxidation of fatty acids. • Discuss the use of fatty acids for energy by cardiac muscles in fasting state • Identify the role of carnitine in β-oxidation of fatty acids. • Describe the end product and reactions involved in β-oxidation of even chain fatty acids 	Biochem	Lecture	SEQS/MCQs
CYANOSIS:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Explain cyanosis • Enumerate the types of cyanosis. • Define atelectasis. • Enumerate the causes of atelectasis. 	Physio	Lecture	SEQS/MCQs

	<ul style="list-style-type: none"> Define Hypercapnia. Define Pneumonia <p>Define Asthma</p>			
INTRODUCTION TO ACID BASE BALANCE BIOCHEM	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define pH, acids and bases with suitable examples. Differentiate between strong and weak acids and bases 	Biochem	Lecture	SEQS/MCQs
ARTIFICIAL RESPIRATION:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> State the ideal method of artificial respiration Describe the requirements of artificial breathing <p>Compare the difference between both breathing</p>	Physio	Lecture	SEQS/MCQs
ATELECTASIS & PULMONARY EDEMA	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define Atelectasis. Describe its Etio-Pathogenesis. Discuss its Clinical Manifestations & Complications. Define Pulmonary Edema. Describe its Etio-Pathogenesis. <p>Discuss its Clinical Manifestations & Complications.</p>	Patho	Lecture	MCQs
HYPER CAPNIA:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define hypo and hypercapnia. Explain hypercapnia during asphyxia. Define dyspnea <p>Explain the effects of drowning on respiration.</p>	Physio	Lecture	SEQS/MCQs
ACCLIMATIZATION-I:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define Acclimatization. Explain the Acclimatization of the Body in Response to Hypoxia. Explain the role of arterial chemoreceptors at high altitudes. Summarize the increase in RBC 	Physio	Lecture	SEQS/MCQs

	<p>and Hb levels during acclimatization.</p> <p>Identifies an increase in the diffusing capacity of O₂ through the respiratory membrane</p>			
ENERGETICS OF BETA OXIDATION OF EVEN CHAIN FATTY ACIDS (LIPID METABOLISM)	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Describe the energetics produced by β-oxidation of 16-Carbon fatty acid palmitate Explain the Odd chain fatty acid oxidation 	Biochem	Lecture	SEQS/MCQs
PNEUMONIA	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Discuss briefly the strategies for preventing pneumonia in children <p>Discuss the strategies for preventing pneumonia in adults.</p>	C.Medicine	Lecture	MCQs
PULMONARY INFECTIONS I	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define Pneumonia. Describe its Etiopathogenesis. <p>Discuss its Clinical Manifestations & Complications.</p>	Patho	Lecture	SEQS/MCQs
ACUTE BRONCHITIS AND PNEUMONIA	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Describe clinical presentation of bronchitis and pneumonia in patients Identify common microorganisms causing these infections Recall the investigations required for diagnosis <p>Summarize treatment options required for patient suffering from bronchitis and pneumonia</p>	Medicine	Lecture	SEQS/MCQs
BUFFERS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> Define buffer. Describe the mechanism of buffer action List the major sources of acids in the body List the various buffer systems 	Biochem	Lecture	SEQS/MCQs

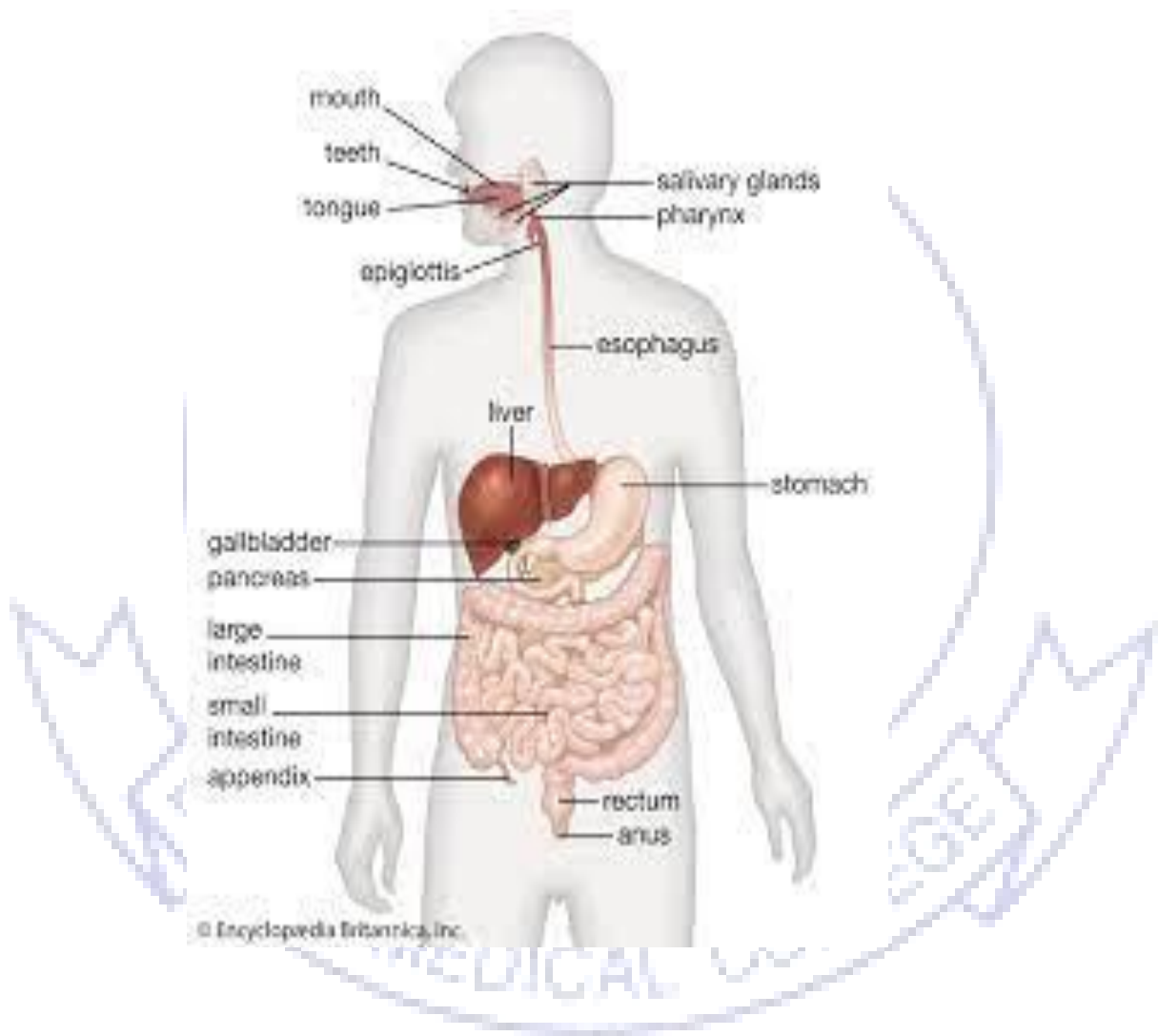
	<p>in plasma and the erythrocytes</p> <ul style="list-style-type: none"> • Define ‘alkali reserve’ • Discuss the different mechanisms which regulate the pH of blood • Identify the first line of defense <p>Describe the buffering action of plasma proteins and hemoglobin</p>			
ACCLIMATIZATION-II:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Summarize the changes in peripheral circulation during acclimatization. • Discuss the O₂-Hb dissociation curve at high altitude. • Identifies the natural acclimatization of natives in high altitude • Summarizes acute pulmonary edema during quick ascend. • Summarizes chronic mountain sickness. 	Physio	Lecture	SEQS/MCQs
DEEP SEA DIVING:	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Discuss the oxygen hemoglobin dissociation curve at high pO₂. • Define oxygen toxicity at high pressures. • Define decompression sickness (caisson’s/ dysbarism, and bends disease). • Discuss the symptoms of decompression sickness. • Explain scuba diving <p>Explain the significance of hyperbaric O₂ therapy.</p>	Physio	Lecture	SEQS/MCQs
PULMONARY INFECTIONS II	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define Pulmonary Tuberculosis. • Describe its Etiopathogenesis. <p>Discuss its Clinical Manifestations</p>	Patho	Lecture	SEQS/MCQs

	& Complications.			
PULMONARY TUBERCULOSIS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Recite causative organism of tuberculosis and explain its pathogenesis • Describe clinical presentation of pulmonary tuberculosis • Discuss investigations required for diagnosis of disease • Summarize treatment of pulmonary tuberculosis 	Medicine	Lecture	SEQS/MCQs
BASIC INTERPRETATION OF COMMON CHEST PATHOLOGIES ON CHEST X-RAY PA VIEW	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • will be able to know changes in chest X-ray pattern in common lung diseases • Will be able to differentiate pleural effusion from pneumonia 	Radiology	Lecture	SEQS/MCQs
ROLE OF RESPIRATION IN ACID-BASE BALANCE	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Explain the mechanism of bicarbonate buffer system in blood • Identify the link between bicarbonate buffer system and respiration. • Explain the role of respiration in pH regulation and related disorders 	Biochem	Lecture	SEQS/MCQs
IDIOPATHIC PULMONARY FIBROSIS	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Define Idiopathic Pulmonary Fibrosis. • Describe its Etiopathogenesis. • Discuss its Clinical Manifestations & Complications. 	Patho	Lecture	SEQS/MCQs
PULMONARY FUNCTION TEST	<p><u>At the end of this lecture 1st year students will be able to:</u></p> <ul style="list-style-type: none"> • Normal PFT'S value in children 	Paeds Medicine	Lecture	SEQS/MCQs

FORMATIVE ASSESSMENT	<u>At the end of this lecture 1st year students will be able to:</u>	C.Medicine	Lecture	SEQS/MCQs
APPLIED PHYSIOLOGY	<ul style="list-style-type: none"> Define pneumothorax & tension pneumothorax State type I and type II respiratory failure	Physiology	Lecture	SEQS/MCQs



Gastrointestinal Module



Module VI

Gastrointestinal Module

INTRODUCTION TO MODULE – VI



Module – VI

Gastrointestinal Module

System	Gastrointestinal System
Duration	6Weeks (20 th October 2026 to 27 th November 2026)
Assessment Dates	Monday 30 th November 2026
Assessment Pattern	MCQs, SEQs & OSPE

*The Assessment pattern and dates are tentative (Subject to change)

MODULE INTRODUCTION

The Integrated Gastrointestinal (GIT) Module for first-year MBBS students is designed to provide a clear understanding of the structure and function of the gastrointestinal system through an integrated approach. The module combines basic sciences—Anatomy, Physiology, and Biochemistry—with relevant aspects of Pathology, Pharmacology, and clinical correlations to help students understand digestion, absorption, and nutrient metabolism. Students will study the development, gross and microscopic structure, and functional mechanisms of the GIT, including the roles of the liver, gallbladder, and pancreas. This integrated learning approach enables students to relate basic scientific concepts to common clinical conditions such as gastroesophageal reflux disease (GERD), peptic ulcer disease, inflammatory bowel disease, and liver disorders, thereby building a strong foundation for future clinical learning and developing essential problem-solving and clinical reasoning skills.

MODULE LEARNING OUTCOMES

At the end of this module, the students of the 1st year MBBS will be able to:

1. Describe the embryological development, histological features, and gross anatomy of the gastrointestinal tract and its associated organs.
2. Explain the physiological mechanisms of GI motility, secretion, digestion, absorption, and the functions of the liver and pancreas.
3. Correlate structural features of the GI system with their physiological and biochemical roles in digestion, absorption, and metabolism.
4. Discuss the etiology, pathogenesis, and key pathological concepts underlying common gastrointestinal disorders.
5. Identify and interpret the clinical features, complications, and basic principles of management of major GI diseases such as GERD, peptic ulcer disease, IBD, and liver cirrhosis.



III. Alignment Grid

Topics	Learning Objectives	Department	Duration	Teaching strategy	Assessment
FORMATION OF GUT TUBE	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the formation of gut tube. • Discuss the divisions of the gut tube. • Describe the derivatives of endoderm and visceral mesoderm. • Describe the molecular regulation of gut tube formation 	Anatomy	60 minutes	Lecture	MCQs, SEQs
ORAL CAVITY & ESOPHAGUS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the boundaries and subdivisions of the oral cavity. • Explain the anatomical features and functions of the tongue and its muscles. • Illustrate the location, openings, and relations of the salivary glands • Describe the anatomical extent and parts of the oesophagus • Explain the location and course of the oesophagus in relation to surrounding structures. • Discuss the anatomical 	Anatomy	60 minutes	Lecture	MCQS, SEQS

	<p>relations of the oesophagus's cervical, thoracic, and abdominal parts.</p> <ul style="list-style-type: none"> • Identify the sites of physiological constrictions along the esophagus. • Relate the arterial and venous supply of the oesophagus to its clinical significance. • Differentiate the nerve supply of the upper and lower parts of the oesophagus. 				
DEVELOPMENT OF THE ESOPHAGUS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the derivatives of the foregut? • Describe the formation of the oesophagus in detail? • Explain oesophageal atresia? • Describe tracheoesophageal fistula (TEF)? • Discuss congenital hiatal hernia? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
HISTOLOGY OF ORAL CAVITY & ESOPHAGUS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the general structure of digestive tract? • Describe the histology of lip? • Describe the histology of tongue? 	Anatomy	60 minutes	Lecture	MCQS, SEQS,OSP E

	<ul style="list-style-type: none"> Describe the general histology of esophagus? Explain mucosa, submucosa, muscularis and serosa/ adventitia of esophagus? Describe the esophageal glands in detail? 				
MASTICATION & HORMONES OF GIT	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define mastication State chewing reflex Explain the site of secretion, stimuli of secretion & actions of gastrin, CCK (cholecystokinin), secretin, GIP (gastric inhibitory peptide & motilin hormones 	Physiology	60 minutes	Lecture	MCQS, SEQS
SALIVA AND IT'S FUNCTIONS	<p>At the end of this lecture First Year M.B.B.S students will be able to;</p> <ul style="list-style-type: none"> Locate the G.I Glands & their secretions Summarize the types of salivary gland with their secretions Describe the components & importance of saliva. Explain the mechanism of salivary secretion. Discuss the factor regulating salivary secretions 	Physiology	60 minutes	Lecture	MCQS, SEQS
DEGLUTITION	<p>At the end of this lecture First Year M.B.B.S</p>	Physiology	60 minutes	Lecture	MCQS, SEQS

	<p>students will be able to;</p> <ul style="list-style-type: none"> • Define deglutition. • List the phases of deglutition. • Locate the deglutition center in the brain. 				
DISORDERS OF ESOPHAGUS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Gastroesophageal Reflux Disease (GERD). • Describe its Etiopathogenesis. • Discuss its Clinical Manifestations & Complications. • Define Barrett Esophagus. • Describe its Etiopathogenesis. • Discuss its Clinical Manifestations & Complications 	Pathology	60 minutes	Lecture	MCQS, SEQS
BENIGN DISORDERS OF OESOPHAGUS:	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • To summarize the basic anatomy of the oesophagus • Define oesophageal constrictions points. • Enumerate congenital anomalies of oesophagus • List the causes of dysphagia • Classify dysphagia • List the clinical features of various 	Surgery	60 minutes	Lecture	MCQS

	benign diseases of oesophagus				
OESOPHAGEAL CARCINOMA	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Summarize the anatomy of oesophagus and revise the lymphatic supply. Define progressive dysphagia Classify types of oesophageal carcinoma List the risk factors of carcinoma oesophagus Identify common signs and symptoms of carcinoma oesophagus Identify the different histological types of esophageal cancer. 	Surgery	60 minutes	Lecture	MCQS
ANTEROLATERAL ABDOMINAL WALL	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Describe the extent of the anterolateral abdominal wall. Describe the components of the anterolateral abdominal wall. Name the muscles, their attachments, actions and innervation of the anterolateral abdominal wall. Describe the blood supply and innervation of the anterolateral abdominal wall 	Anatomy	60 minutes	Lecture	MCQS,S.E QS
RECTUS SHEET, INGUINAL	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p>	Anatomy	60 minutes	Lecture	MCQS, SEQS

CANAL:	<ul style="list-style-type: none"> • Define the rectus sheet. • Describe the composition and contents of the rectus sheet? • Explain the inguinal canal. • Describe the boundaries and contents of the inguinal canal? 				
RECTUS SHEET, INGUINAL CANAL AND HERNIAS II	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define inguinal hernia? • Classification of inguinal hernias? • Differentiate the direct and indirect inguinal hernias in detail? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
INGUINAL HERNIA	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Revise the anatomy of the inguinal canal and its relevance to hernia formation • Differentiate between direct and indirect inguinal hernias based on their anatomical origin. • Enumerate the risk factors for development of hernia • Identify key clinical presentation features • List the potential complications of inguinal hernia 	Surgery	60 minutes	Lecture	Mcqs
POSTERIOR	<p>At the end of this lecture First Year M.B.B.S.</p>	Anatomy	60 minutes	Lecture	MCQS,

<p>ABDOMINAL WALL</p>	<p>students will be able to;</p> <ul style="list-style-type: none"> • Discuss the muscles involves in posterior abdominal wall. • Describe the attachments, nerve supply and actions of muscles of posterior abdominal wall? • Describe other structures present in the posterior abdominal wall. • Describe formation, termination and tributaries of IVC. 				<p>SEQS</p>
<p>ABDOMINAL WALL HERNIA</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Summarize the basic anatomy of abdominal wall and its natural or acquired Weaknesses. • Define hernia • Enlist the causes of abdominal hernia • Classify the various types of abdominal wall hernia • list the complications of abdominal hernias 	<p>Surgery</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>
<p>PERITONEUM I</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define peritoneum? • Discuss parietal and visceral peritoneum? • Describe the terms intraperitoneal, extraperitoneal, retroperitoneal and subperitoneal viscera 	<p>Anatomy</p>	<p>60 minutes</p>	<p>Lectures</p>	<p>MCQS, SEQS</p>

	<p>with examples?</p> <ul style="list-style-type: none"> • Describe the modifications of peritoneum? • Discuss greater and lesser sac? 				
PERITONEUM II	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe epiploic foramen and its boundaries? • Describe the mesentry in detail? • Describe the ligaments of stomach? • Describe the ligaments of liver? • Describe the ligaments of spleen? • Discuss peritoneal adhesions? • Define ascites? 	Anatomy	60 minutes	Lectures	MCQS, SEQS
PERITONITIS:	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define peritonitis • Explain the mechanisms leading to peritonitis • Describe the inflammatory response within the peritoneal cavity, including the release of inflammatory mediators. • Identify common presenting symptoms of peritonitis • Discuss the importance of a thorough history 	Surgery	60 minutes	Lecture	Mcqs

	and physical examination in case of peritonitis				
DEVELOPMENT OF THE STOMACH	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> Describe the formation of the stomach? Describe the rotation of the stomach in the embryo? Define pyloric stenosis? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
STOMACH	At the end of this Lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> Discuss the parts of stomach? Describe the attachments of stomach? Describe the blood supply, innervation and lymphatic drainage of stomach? Define pyloric stenosis? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
MOTOR FUNCTIONS OF STOMACH 1	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> List & Define the Physiologic Division of Stomach. Explain the Arrangement of Smooth Muscles in Stomach. List & Explain the Motor Functions of the Stomach. Describe Hunger Contractions & the 	Physiology	60 minutes	Lecture	

	Vomiting				
HISTOLOGY OF STOMACH	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> Describe the general histology of stomach? Explain mucosa, submucosa, muscularis and serosa of stomach? Describe the cells of stomach in detail? 	Anatomy	60 minutes	Lecture	
STOMACH	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> Identify and differentiate the slide under microscope Describe the general histology of stomach. Identify mucosa, submucosa, muscularis and serosa of stomach. Describe the cells of stomach in detail. 	Practical	120 mins	Dr Fehmi	
MOTOR FUNCTIONS OF STOMACH 2	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> List the Motor Functions of Stomach Categorize the Factors that Affects Gastric Emptying List & Describe the Factors that Promotes Gastric Emptying List & Describe the Factors that Inhibit Gastric Emptying 	Physiology	60 minutes	Lecture	MCQS, SEQS
GASTRIC ACID SECRETION	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> List the gastric gland, 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<p>their secretions & functions</p> <ul style="list-style-type: none"> • Describe physiological arrangement of the gastric (oxyntic) gland • Discuss the mechanism of HCl secretion • Name the factors that affect the gastric acid secretion • List & define the phases of gastric secretion 				
<p>DIGESTION AND ABSORPTION OF CARBOHYDRATES</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • List the principal carbohydrates present in commonly consumed foodstuffs. • Describe the biochemical composition and enzymatic action of saliva and gastric juice involved in carbohydrate digestion. • Explain the role and mechanism of α-amylase and pancreatic amylase in the breakdown of starch and glycogen. • Recognize the site and mechanism of absorption of monosaccharides in the gastrointestinal tract, including active and facilitated transport. • Discuss the physiological 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

	importance of glucose transporters (GluT) in glucose absorption and metabolism.				
GLYCOLYSIS (CARBOHYDRATE METABOLISM)	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Glycolysis • Differentiate between aerobic and anaerobic glycolysis. • Identify the biomedical importance of glycolytic pathway • Describe the sequence of reactions involved in glycolytic pathway • Define substrate level phosphorylation • Name the end product formed in aerobic and anaerobic glycolysis. • Describe the regulation of glycolysis via substrates, end-products and hormones • Calculate the total and net number of ATPs produced of in aerobic and anaerobic glycolysis. • List the fates of pyruvate 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
GUT WALL 1	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • List the Parts & the Organs that are Associated with G.I 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<p>Tract.</p> <ul style="list-style-type: none"> List the Functions of different Parts of G.I Tract. Name the Layers of Gut with their role. List & Describe the Electrical Activity / Membrane Potentials of G.I Tract. 				
<p>GLUCONEOGENESIS (CARBOHYDRATE METABOLISM):</p>	<p>At the end of this Practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define gluconeogenesis. List the non-carbohydrate sources of glucose. Identify the importance of gluconeogenesis to occur in the body. Describe the reactions of gluconeogenesis Describe Cori cycle. List the fates of lactic acid. Describe the regulation of gluconeogenesis 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
<p>KREBS CYCLE (CARBOHYDRATE METABOLISM)</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Describe the conversion of pyruvate into acetyl CoA in mitochondria. Identify that TCA cycle is a common and final pathway for breakdown of acetyl CoA obtained from carbohydrates, proteins and lipids to CO₂ and H₂O 	Biochemistry	60 minutes	Lecture	Mcqs ,Seqs

	<ul style="list-style-type: none"> • Describe the reactions of TCA cycle. • Define “anaplerotic reactions” • Identify the reaction of TCA cycle involved in substrate level phosphorylation. • Identify that TCA cycle is “amphibolic” in nature. • Describe the regulation of krebs cycle. 				
GUT WALL 2	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Name the Layers of GI wall • Describe Basic electrical rhythm, slow wave & spike potential • Identify the Cells responsible for pacemaker activity in GIT & their location in small & large intestine • Difference between action potential of GI smooth muscles & other muscles • Explain Factors increasing or decreasing frequency of spike potential & Phenomenon of tone, a property of GI muscles. 	Physiology	60 minutes	Lecture	Mcqs ,Seqs
ENTERIC NERVOUS SYSTEM 1	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Enteric Nervous System • List the Divisions of 	Physiology	60 minutes	Lecture	Mcqs ,Seqs

	<p>Enteric Nervous System</p> <ul style="list-style-type: none"> • Mention Location of Meissner's & Myenteric Nerve Plexus in the Gut Wall • Describe the Role of Enteric System in Control of G.I Functions 				
ENTERIC NERVOUS SYSTEM 2	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • List the types of plexus with their arrangement. • Differentiate between Myenteric & Submucosal Plexus • Name the neurotransmitters released from the enteric neurons • List & define the GIT Reflexes 	Physiology	60 minutes	Lecture	Mcqs ,Seqs
GLYCOGENESIS GLYCOGEN METABOLISM	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Identify that glycogen is the major storage form of glucose in human beings Lecture Hall 1 • Describe the reactions of glycogenesis. • Describe the regulation of glycogen synthesis 	Biochemistry	60 minutes	Lecture	Mcqs ,Seqs
GLYCOGENOLYSIS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Identify that glycogen breakdown is not the reversal of glycogenesis. 	Biochemistry	60 minutes	Lecture	Mcqs ,Seqs

	<ul style="list-style-type: none"> Describe the reactions of glycogenolysis. Describe the regulation of glycogenolysis 				
AUTONOMIC CONTROL OF GIT	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define “Autonomic Nervous System” with its Characteristic Feature List the Divisions of Autonomic Nervous System Explain the Role of Autonomic Nervous System in Controlling G.I Functions 	Physiology	60 minutes	Lecture	MCQS, SEQS
Functional Dyspepsia	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define and diagnose functional dyspepsia on the basis of ROME IV CRITERIA Recognize investigation to exclude anatomical disorder Summarize drugs which can be required for treatment of the disease 	Medicine	60 minutes	Lecture	Mcqs ,
G.I REFLEXES 1	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define “Reflex” & “Reflex Arc” List the Gastrointestinal Reflexes Categorize G.I 	Physiology	60 minutes	Lecture	MCQS, SEQS

	Reflexes according to the Level of their Integration.				
ACID PEPTIC DISEASES	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define & Classify Acid Peptic Disease(APD). • Define Gastritis. • Classify its Types: Acute & Chronic Gastritis. • Describe their Etio-Pathogenesis. • Discuss their Clinical Manifestations & Complications.. 	Pathology	60 minutes	Lecture	Mcqs
GASTROINTESTINAL REFLUX DISEASE	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Identify gastroesophageal reflux disease and describe its risk factors and pathogenesis • Recognize common clinical signs and symptoms of the disease • Recall the diagnostic investigations and summarize treatment of the disease 	Medicine	60 minutes	Lecture	Mcqs
COMPLICATION OF GERD & BARRETTE ESOPHAGUS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define GERD. • Explain the structure of the lower esophageal sphincter (LES) and its 	Surgery	60 minutes	Lecture	MCQS

	<p>role in preventing reflux.</p> <ul style="list-style-type: none"> • Identify risk factors that contribute to GERD • List the Clinical Manifestations of GERD • Enumerate the complications of GERD. • Define Barrette Esophagus 				
PEPTIC ULCER DISEASE (PUD)	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Peptic Ulcer Disease (PUD). • Describe its Etio-Pathogenesis • Describe its Morphological Manifestations of Benign and Malignant ulcers. • Discuss its Clinical Manifestations & Complications 	Pathology	60 minutes	Lecture	Mcqs
PEPTIC ULCER DISEASE	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe pathogenesis of peptic ulcer disease • Identify clinical features and diagnostic investigations of the disease • Develop a treatment plan to control the disease 	Medicine	60 minutes	Lecture	Mcqs

<p>PERFORATED PEPTIC ULCER;</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • To summarize the basic anatomy and physiology of stomach and duodenum • Describe the pathophysiology of development of peptic ulcer • Enlist the causes of peptic ulcer • Differences between duodenal ulcer and gastric ulcer presentation. • Enumerate the risk factors for perforated peptic ulcer • Explain the clinical presentation of patient with perforated peptic ulcer 	<p>Surgery</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>
<p>GASTRIC FUNCTION TESTS-1:</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Recall the constituents of gastric juice. • Identify the clinical indications for performing gastric function tests • Describe the procedure of obtaining a sample of gastric juice from the patients. • Classify gastric function tests. • Outline the normal response of fractional test meal analysis 	<p>Biochemistry</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>

DEVELOPMENT OF DUODENUM	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> • Describe the formation of duodenum? • Describe the rotation of duodenum? • Discuss duodenal atresia. 	Anatomy	60 minutes	Lecture	MCQS, SEQS
DEVELOPMENT OF MIDGUT	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> • Discuss Omphalocele. • Describe Gastroschisis • Explain Meckel's diverticulum. • Describe volvulus. • Discuss apple peel atresia 	Anatomy	60 minutes	Lecture	MCQS, SEQS
GASTRIC FUNCTION TESTS-2:	At the end of this lecture First Year M.B.B.S. students will be able to; <ul style="list-style-type: none"> • Define Hyperchlorhydria, Hypochlorhydria and achylia gastric. • Discuss about hyperchlorhydria, hypochlorhydria and achylia gastric • List the stimulation tests performed to induce gastric acid production • Outline the interpretations of the results of stimulation tests. • Discuss about tubeless gastric analysis and its importance 	Biochemistry	60 minutes	Lecture	MCQs, SEQs ,OSPE
G.I REFLEXES 2	At the end of this lecture,	Physiology	60 minutes	Lecture	Mcqs,

	<p>the First Year MBBS students will be able to:</p> <ul style="list-style-type: none"> • Explain the reflexes that occur entirely via enteric nervous system, • Discuss the reflexes that are mediated via sympathetic ganglia, • Discuss the reflexes that occur via spinal cord or brain stem, • Describe the effects & causative factors of entero-gastric reflex • Discuss the role of gastrocolic & duodenocolic reflexes in movements of colon, colonoileal reflex & • Identify other reflexes i.e. peritoneo-intestinal, reno & vesico-intestinal reflexes. 				seqs
DUODENUM	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the parts of small intestine. • Describe the parts of duodenum and their important relations? • Describe blood supply, innervation and lymphatic drainage of duodenum. • Explain duodenal ulcer. 	Anatomy	60minutes	Lecture	MCQS, SEQS
JEJUNUM AND ILEUM	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the anatomy jejunum? • Describe the anatomy 	Anatomy	60 minutes	Lecture	MCQS, SEQS

	<p>of ileum?</p> <ul style="list-style-type: none"> • Differentiate between jejunum and ileum? • Describe the blood supply, innervation and lymphatic drainage of jejunum and ileum? • Describe the mesentery of small intestine, its root its relations? 				
SMALL INTESTINE	<p>At the end of this Practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Identify and differentiate the slide under microscope • Develop proficiency in using a light microscope to observe tissue samples at various magnifications and focus levels. • Describe the general histology of small intestine. • Explain mucosa, submucosa, muscularis and serosa of small intestine. • Describe the cells of small intestine. • Discuss plica circulares. • Describe villi and microvilli. • Describe the payer's patches 	Anatomy	120 minutes	Practical	OSPE
MOVEMENTS OF SMALL INTESTINE 1	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Types of movements of small intestine. 	Physiology	60 minutes	Lecture	MCQS, SEQs

	<ul style="list-style-type: none"> • Their functions. • Different patterns of mixing contractions of small intestine. • Role of enteric nervous system in small intestinal movements & Peristaltic rush. 				
MOVEMENTS OF SMALL INTESTINE 2	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Role of CGRP (calcitonin gene receptor peptide) in movements & its significance, • Hormonal control of propulsive movements of small intestine i.e. hormones that stimulate & that inhibit movements • Movements of villi 	Physiology	60 minutes	Lecture	MCQS, SEQS
ESTIMATION OF TOTAL PROTEINS II	<p>At the end of this practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Record the readings of transmittance and optical density of stock standard solutions and sample with the use of spectrophotometer. • Calculate the concentration of stock standard solutions of 'S' test tubes. • Draw the graph to obtain the concentration of total proteins for the sample. • Define the terms hypoproteinemia and 	Biochemistry	120 minutes	Practical	OSPE

	<p>hyperproteinemia.</p> <ul style="list-style-type: none"> • Interpret the result of whether the working sample is hypoproteinemia/hyperproteinemia or within the normal range. • Discuss a few clinical causes of hypoproteinemia and hyperproteinemia 				
CECUM AND APPENDIX	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the anatomical position, shape, and location of the cecum in the right iliac fossa. • Explain the features and functions of the ileocecal valve. • Illustrate the various positions of the vermiform appendix in relation to the cecum • Identify the peritoneal relations and mesentery (mesoappendix) of the appendix • Relate the arterial and venous supply of the cecum and appendix to their corresponding lymphatic drainage. • Differentiate the nerve supply of the cecum and appendix and its relevance to pain localisation. • Correlate the anatomical position of 	Anatomy	60 minutes	Lecture	MCQS, SEQS

	the appendix with the clinical presentation of appendicitis.				
DEVELOPMENT OF LIVER AND GALL BLADDER	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the formation of liver? • Describe the formation of gall bladder? • Explain the molecular regulation of liver induction? • Describe the accessory hepatic duct? • Explain duplication of gall bladder? • Define intra and extra hepatic biliary duct atresia? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
	•				
LARGE BLOOD VESSELS OF GIT 1	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe abdominal aorta in detail • Name the branches of abdominal aorta • Explain the level of entrance and its termination in abdomen • Describe celiac trunk its branches and area of supply? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
LARGE BLOOD VESSELS OF GIT 2	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe SMA its branches and area of supply? • Describe IMA its branches and area of 	Anatomy	60 minutes	Lecture	MCQS, SEQS

	<p>supply?</p> <ul style="list-style-type: none"> Describe portal vein its formation, course and termination? Define aortic dissection and aortic aneurysm? 				
DIGESTION AND ABSORPTION OF PROTEINS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> List the principal dietary proteins and the proteolytic enzymes present in gastric, pancreatic, and intestinal juices. Describe the optimal pH range, activators, substrates, and products formed by major proteolytic enzymes involved in protein digestion. Explain the sequential action of proteolytic enzymes from stomach to intestine during protein digestion. Identify the site and mechanism of absorption of amino acids in the gastrointestinal tract. Discuss how absorbed amino acids are transported to the liver and integrated into metabolic processes. 	Biochemistry	60 minutes	Lecture	MCQS
ESTIMATION OF ALBUMIN : GLOBULIN RATIO I	<p>At the end of this Practical, First Year M.B.B.S. students will be able to;</p>	BIOCHEMISTRY	60 minutes	Practical	OSPE

	<ul style="list-style-type: none"> • State the normal range of Albumin: globulin ratio. • Name the reagents to be used in the experiment. • Read the instructions to prepare the stock standard solutions of Albumin and the sample. • Describe the principle of the reaction taking place in the experiment. • Record the readings of transmittance and optical density of stock standard solutions and sample with the use of spectrophotometer. 				
<p>GASTROINTESTINAL CHANGES DURING PREGNANCY</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Explain the oral changes including salivary and dental changes during pregnancy. • Identify the anatomical and hormonal changes leading to heart burn during pregnancy. • Explain the reason of delayed gastric emptying responsible 	Gynae	60 minutes	Lecture	MCQS

	<p>for frequent constipation during pregnancy.</p> <ul style="list-style-type: none"> • Discuss the common hepatic changes occurring during pregnancy. 				
LIVER	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the lobes of liver? • Describe the ligamentous attachments of liver? • Describe the peritoneal relations of liver? • Describe the structures present within the hilum of liver? • Define accessory lobe of liver? • Define hepatic segments? • Define hepatic cirrhosis? • Define CLD? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
HISTOLOGY OF LIVER	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the general histology of liver. • What is hepatic lobule, hepatic acinus and portal lobule? • Describe the contents of portal triad? • Explain space of Disse and its contents? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
LIVER	<p>At the end of this practical First Year M.B.B.S. students will be able to;</p>	Anatomy	60 minutes	Practical	OSPE

	<ul style="list-style-type: none"> • Identify the lobule, central vein under microscope • Recognize the radiating hepatocytes • Identify hepatic lobule, hepatic acinus and portal lobule. • Identify the contents of portal triad. 				
FUNCTIONS OF LIVER	<p>At the end of this Lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • List the metabolic functions of liver. • Identify the role of liver in storage of blood. • Discuss the role of liver in plasma protein synthesis. • Summarize the storage functions of liver 	Physiology	60 minutes	Lecture	MCQS, SEQS
DISORDERS OF LIVER	<p>At the end of this practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Hepatitis. • Describe its Etio-Pathogenesis. • Classify its Types. • Discuss their Clinical Manifestations & Complications. • Define Jaundice. 	Pathology	60 minutes	Lecture	Mcqs

<p>LIVER TRAUMA</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the Anatomy of the liver. • Identifying common causes of liver trauma • Explain Clinical presentation of different types of liver trauma • List potential complications like bleeding, infection, bile leaks, and hepatic failure following liver trauma 	<p>Surgery</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>
<p>LIVER DISORDER DURING PREGNANCY</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Classify the liver disorders in pregnancy. • Discuss its maternal and fetal risks. • Understand the common clinical manifestation of the liver disorders in pregnancy. 	<p>Gynae</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS</p>
<p>ESTIMATION OF ALBUMIN : GLOBULIN RATIO II</p>	<p>At the end of this Practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Calculate the concentration of stock standard solutions of 'S' test tubes. • Draw the graph to obtain the concentration of Serum Albumin for the sample. • Apply the formula of 	<p>Biochemistry</p>	<p>120 minutes</p>	<p>Lecture</p>	<p>OSPE</p>

	<p>(Serum Total Proteins – Serum Albumin) to obtain the value of Serum Globulin.</p> <ul style="list-style-type: none"> • Quote the value of Serum Total Proteins obtained from the previous practical. • Calculate the Albumin: Globuli • Interpret the result of whether the ratio of the working sample is above the range, below the range or within the normal range. • Discuss a few clinical causes of increased and decreased Albumin:Globulin ratio. 				
HEPATITIS	<p>At the end of this Practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Recall definition and pathogenesis of hepatitis • Restate causes of hepatitis • Recognize clinical findings of hepatitis in patient • Summarize investigation and treatment plan 	Medicine	60 minutes	lecture	Mcqs
LIVER FUNCTION TEST 1	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Discuss functions of liver such as metabolic functions, secretory 	Biochemistry	60 minutes	Lecture	MCQS, SEQS

	<p>functions, excretory functions, hematologic functions, protective functions and storage functions</p> <ul style="list-style-type: none"> • Outline the interpretation of results of protein, albumin estimation and fibrinogen. • Relate the interpretation of the results of serum cholesterol with the degree of function of liver. • Describe the test prothrombin time and outline the interpretation of the results. • Identify the importance of estimation of ammonia to assess the degree of liver damage 				
CIRRHOTIC LIVER DISEASE	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Identify etiology and pathogenesis of cirrhotic liver disease • Restate various clinical presentations of cirrhotic liver disease • Analyze the role of investigations to diagnose the disease • Formulate plan for treatment of signs and symptoms as well as precautions measures to decrease risk of 	Medicine	60 minutes	Lecture	Mcqs

	complications				
LIVER FUNCTION TEST 2	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Explain the procedure of oral and IV hippuric acid test. • Identify the importance for assessing detoxification function of liver with hippuric acid test. • Indicate the use of MEGX test for evaluating the capacity of metabolising drugs by the liver. • Recognize BSP retention test for estimating the excretory function of liver. • Explain the procedure of galactose tolerance test. • Identify the importance of this test in assessing liver dysfunction 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
GALLBLADDER	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the parts and relations of gall bladder? • Describe the blood supply, innervation and 	Anatomy	60 minutes	Lecture	MCQS, SEQS

	<p>lymphatic drainage of gall bladder?</p> <ul style="list-style-type: none"> • Describe bile duct, its relations and opening? • Define cholelithiasis 				
HISTOLOGY OF GALL BLADDER	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the general histology of gall bladder? • Explain mucosa, muscularis and serosa of gall bladder? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
GALL BLADDER	<p>At the end of this Practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Identify and differentiate the slide under microscope • Describe the general histology of gall bladder. • Identify mucosa, muscularis and serosa of gall bladder 	Anatomy	120 minutes	Practical	OSPE
SECRETION OF BILE	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define bile • List the components of biliary secretion. • Discuss the role of liver & the gall bladder in the formation of bile • Explain emptying of gall bladder • List the functions of bile 	Physiology	60 minutes	Lecture	MCQS, SEQS

<p>FUNCTIONS OF BILE SALTS 1</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define bile salts • Enlist the functions of bile salts • Identify the factors that control the production and circulation of bilirubin • Understand the pathological factors that can lead to jaundice • Analyse how clinical examination and diagnostic testing can identify the cause of jaundice 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>
<p>FUNCTIONS OF BILE SALTS 2</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define “Bile”. • Describe Functional Arrangement of Hepatocytes Related to Bile Production. • List Stages of Biliary Secretions. • Explain Formation & Functions of Bile Salts. • Describe Enterohepatic Circulation of Bile Salts with its Importance. 	<p>Physiology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>
<p>DIGESTION AND ABSORPTION OF LIPIDS IN SMALL INTESTINE</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Recognize the factors that makes small intestine the major site for fat digestion. 	<p>Biochemistry</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>

	<ul style="list-style-type: none"> • Describe the role of the hormones: secretin and cholecystokinin • Describe the composition of bile • List the lipolytic enzymes present in pancreatic juice along with their pH range, mode of action and activators • List the products formed from hydrolysis of triglycerides. • Point the percentage of lipids which is absorbed • Describe the mechanism of absorption of TG products • Identify that triglycerides are packaged in chylomicrons and transported to liver. 				
DISORDERS OF GALL BLADDER	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Cholecystitis & Cholelithiasis. • Describe their Etio-Pathogenesis. • Discuss their Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	Mcqs
CHOLELITHIASIS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • To summarize the basic anatomy and physiology of the gall 	Surgery	60 minutes	Lecture	Mcqs

	<p>bladder and bile ducts.</p> <ul style="list-style-type: none"> • To describe the pathophysiology of gall stones. • Classify the various types of gall stones and their causes. • Enlist signs and symptoms of patient with acute and chronic cholecystitis. • List the complications of gallstones 				
PANCREAS	<p>At the end of this Lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the relations of pancreas and its parts? • Describe the borders of pancreas with their relations? • Describe the main pancreatic and accessory pancreatic ducts with their openings in duodenum? 	Anatomy	60 Minutes	Lecture	MCQS, SEQS
PANCREATIC SECRETION.	<p>At the end of this Practical First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define “Pancreas”. • List the Types of Pancreatic Secretions. • Categorize Pancreatic Exocrine Secretion with their Functions. • List Stimuli & Phases of Pancreatic Exocrine Secretions. • Explain the Mechanism of Exocrine Secretions of Pancreas 	Physiology	60 minutes	Lecture	MCQS, SEQS

<p>ACUTE PANCREATITIS</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Summarize the surgical anatomy and physiology of pancreas. • Enlist Congenital abnormalities of the pancreas • Define and classify pancreatitis • Enumerate The Causes Of Acute Pancreatitis. • Explain the pathophysiology of acute pancreatitis 	<p>Surgery</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>
<p>DERIVATIVES OF HINDGUT</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the derivatives of hindgut? • Describe the formation of urorectal septum? • Describe rectovaginal fistula? • Discuss rectoanal fistula? • Describe congenital megacolon? 	<p>Anatomy</p>	<p>60 Minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>
<p>LARGE INTESTINE I</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the parts of large intestine and its peritoneal relations? • Differentiate between appendices epiploici, tenia coli? • Describe ascending colon relations? 	<p>Anatomy</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQS</p>

	<ul style="list-style-type: none"> • Discuss the relations of transverse colon? • describe transverse mesocolon and greater omentum? 				
Ultrasound Abdomen	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • will be able to know imaging appearance of normal abdominal viscera on ultrasound abdomen • Will be able to understand different ultrasound probes and their function 	Radiology	60 minutes	Lecture	Mcqs
LARGE INTESTINE II	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the relations of descending colon? • Describe the relations of sigmoid colon? • Discuss the recesses of sigmoid colon? • What is sigmoid mesocolon? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
APPENDICITIS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Appendicitis. • Describe its Etio-Pathogenesis. • Discuss its Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	MCQS, SEQS
MOVEMENTS OF COLON	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Colon (Large Intestine). 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<ul style="list-style-type: none"> List the Functions of Large Intestine. Explain Arrangement of Smooth Muscles with Movements in Colon Categorize & Compare Colonic Movements with Small Intestinal Movements Mention Abnormalities associated with Colonic Movements 				
LARGE INTESTINE III	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Discuss the blood supply, innervation and lymphatic drainage of large intestine? Define intussusception and volvulus? Describe diverticulitis? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
HISTOLOGY OF LARGE INTESTINE	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Describe the general histology of large intestine? Explain mucosa, submucosa, muscularis and serosa of large intestine? Describe the cells of large intestine? 	Anatomy	60 minutes	Lecture	MCQS, SEQS
LARGE INTESTINE	<p>At the end of this Practical, First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Identify and differentiate the slide under microscope 	Anatomy	120 minutes	Practical	OSPE

	<ul style="list-style-type: none"> • Develop proficiency in using a light microscope to observe tissue samples at various magnifications and focus levels • Describe the general histology of large intestine. • Explain mucosa, submucosa, muscularis and serosa of large intestine. • Describe the cells of large intestine. 				
ACUTE APPENDICITIS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • To summarize the aetiology and surgical anatomy of acute appendicitis • Explain the basic concept of migratory right iliac fossa pain. • Define acute appendicitis • Enlist risk factor for acute appendicitis • Enumerate Common conditions encountered preoperatively 	Surgery	60 minutes	Lecture	Mcqs
ACHALASIA AND MEGA COLON	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • List the esophageal motility disorders • Define the achalasia. • Describe the esophago-gastric 	Physiology	60 minutes	Lecture	MCQS, SEQS

	<p>junction.</p> <ul style="list-style-type: none"> Describe the pathology, clinical presentation & diagnosis of achalasia. Describe the Megacolon (Hirschsprung's Disease) 				
INTRODUCTION TO MICRONUTRIENTS	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define micronutrients Differentiate between macronutrients and micronutrients Discuss the types of micronutrients 	Community Medicine	60 minutes	Lecture	Mcqs
INTRODUCTION TO NUTRITION	<ul style="list-style-type: none"> Define nutrition, balanced diet, macronutrients, micronutrients, and BMR List essential amino acids, dietary protein sources, and recommended daily protein intake. Describe the role of proteins in the nutrition Define caloric value of food List the factors influencing biological value of proteins Outline the role of carbohydrates in diet Identify the requirement of carbohydrates in diet.. Outline the role of lipids in diet 	Biochemistry	60 minutes	Lecture	MCQS, SEQS
VOMITING AND	At the end of this lecture	Physiology	60 minutes	Lecture	MCQS,

<p>DIARRHEA 1</p>	<p>First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define the nausea , retching and vomiting • Enlist the causes of vomiting. • Describe the vomiting center. • Describe the vomiting reflex. • Describe the antiperistalsis. • Describe the vomiting act • Define diarrhea • Describe the classification of diarrhea • Describe the enteritis, ulcerative colitis & psychogenic diarrhea 				<p>SEQS</p>
<p>PROTEIN CALORIE MALNUTRITION:</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define protein-calorie malnutrition. • Identify the types of PCM (marasmus, kwashiorkor, marasmic-kwashiorkor • Recall the biochemical roles of proteins, carbohydrates, and fats in digestion, absorption, and metabolism in the GIT. • Explain the biochemical and clinical features of marasmus and kwashiorkor. • Discuss factors contributing to PCM, 	<p>Biochemistry</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>MCQS, SEQs</p>

	<p>including inadequate intake, poor digestion/absorption, infections, and socio-economic determinants.</p> <ul style="list-style-type: none"> • Identify clinical and biochemical markers (albumin, prealbumin, transferrin) suggestive of PCM in case scenarios. • Discuss principles of digestion and absorption to understand how GIT disorders (e.g., chronic diarrhea, pancreatic insufficiency) worsen PCM. • Interpret basic laboratory reports relevant to malnutrition (electrolytes, liver function tests, serum proteins). 				
DIARRHEA	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Memorize definition and classification of diarrhea • Recognize pathogenesis and clinical presentation of all types of diarrhea • Summarize treatment options for both acute and chronic diarrhea 	Medicine	60 minutes	Lecture	Mcqs
Iodine deficiency	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Discuss Iodine deficiency disorder 	Community medicine	60 minutes	Lecture	Mcqs

	<p>and its etiology.</p> <ul style="list-style-type: none"> • Explain the prevention and control of Iodine deficiency disorder 				
OVERVIEW OF PHARMACOLOGY OF EMESIS:	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define emesis. • Describe the pathophysiology of emesis. • Discuss the mechanistic pharmacology of emesis. 	Pharma	60 Minutes	Lecture	Mcqs
MALABSORPTION	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Malabsorption. • Describe its Etiopathogenesis. • Discuss its Clinical Manifestations & Complications 	Pathology	60 minutes	Lecture	Mcqs
MALABSORPTION SYNDROME	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Explain the disorder with its pathogenesis • List out the disease causing malabsorption syndrome • Summarise clinical features of disorder • Identify the laboratory test as well as radiological test required to diagnose the disorder • Discuss treatment in accordance to diseases causing the syndrome 	Medicine	60 minutes	Lecture	MCQS

<p>Principles of drug development</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define the process of drug development. • List the phases of drug development. • Define pre-clinical studies of drug development. • Explain the different phases of clinical trials. • Explain the role of FDA in drug development. • Define post-marketing surveillance of drugs. 	<p>Pharmacology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>
<p>OVERVIEW OF PHARMACOLOGY OF DIARRHEA</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define diarrhea. • Explain the pathophysiology of diarrhea. • Discuss the mechanistic pharmacology of diarrhea. 	<p>Pharmacology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>
<p>INFLAMMATORY BOWEL DISEASES (IBD) I</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define & Classify IBD. • Define Ulcerative Colitis. • Describe its Etio-Pathogenesis. • Discuss its Clinical Manifestations & Complications 	<p>Pathology</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>
<p>Inflammatory bowel disease</p>	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p>	<p>Medicine</p>	<p>60 minutes</p>	<p>Lecture</p>	<p>Mcqs</p>

	<ul style="list-style-type: none"> • Define and classify inflammatory bowel disease • Recall etiology and pathogenesis of both Crohns disease and ulcerative colitis • Describe the clinical features of ulcerative colitis and Crohns disease • Discuss the investigations done for diagnosis and prescribe treatment of the disease 				
INTESTINAL OBSTRUCTION	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • To summarize the basic anatomy and physiology of small and large intestines • To describe the pathophysiology of intestinal obstruction • To differentiate between dynamic and adynamic intestinal obstruction • Enlist the causes of intestinal obstruction • Classify various types of intestinal obstruction. • Explain the possible complications of intestinal obstruction. 	Surgery	60 minutes	lecture	Mcqs
CONSTIPATION	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe etiology and 	Medicine	60 minutes	Lecture	Mcqs

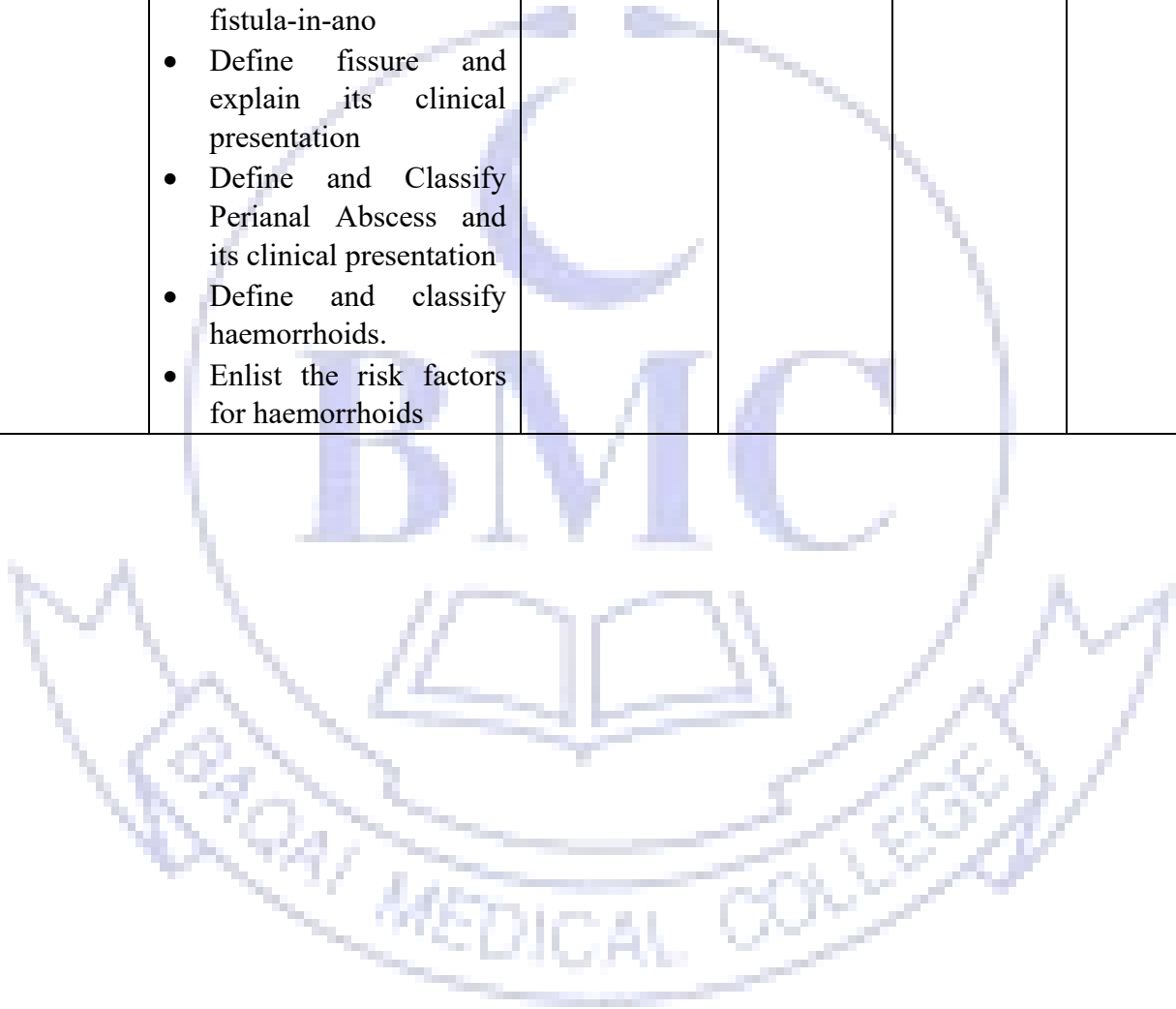
	<p>pathogenesis of constipation</p> <ul style="list-style-type: none"> • Demonstrate diagnostic investigations and treatment of constipation 				
INFLAMMATORY BOWEL DISEASES (IBD) II	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Define Crohn's Disease. • Describe its Etio-Pathogenesis. • Discuss its Clinical Manifestations & Complications. 	Pathology	60 minutes	Lecture	Mcqs
IRRITABLE BOWEL SYNDROME	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Recognize irritable bowel syndrome according to ROME IV criteria • Explain the pathogenesis and clinical presentation of disease • State regarding diagnostic investigation and treatment 	Medicine	60 minutes	Lecture	Mcqs
Principles of breast feeding	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Important of breast feeding 	Paeds	60 minutes	Lecture	Mcqs
Vitamin A & C Deficiency	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • List the sources and functions of Vitamin A 	Community medicine	60 minutes	Lecture	Mcqs

	<p>& C</p> <ul style="list-style-type: none"> • Explain the causes and risk factors of Vitamin A & C Deficiency • Describe the signs and symptoms of Vitamin A & C Deficiency • Describe the prevention strategies of Vitamin A & C Deficiency 				
Pediatric nutrition	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Importance of balanced diet 	Paeds	60 minutes	Lecture	Mcqs
NUTRITION IN SURGERY	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • List the risk factors of malnutrition in the surgical patient • Describe the Fluid and electrolyte requirements in the pre- and postoperative patient • Discuss the nutritional requirements of surgical patients • Describe the different methods of providing nutritional support • List the complications of enteral and parenteral nutrition 	Surgery	60 minutes	Lecture	Mcqs
Approach to a patient with Common Gastrointestinal problems	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Discuss different symptoms of 	Family Medicine	60 minutes	Lectures	Mcqs

	Gastrointestinal problems presenting in primary care (vomiting, Abdominal pain, diarrhea)				
Role of radiology in Acute Abdomen	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • will be able to interpret the changes in abdominal visceral appearance in emergency abdominal pathologies • Will be able to correlate different radiological and clinical signs in acute abdomen 	Radiology	60 minutes	Lectures	Mcqs
RECTUM By the end of lecture, students will be able to	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Discuss peritoneal relations of rectum? • Describe the internal structure of rectum? • Describe the blood supply, innervation and lymphatic drainage of rectum? • Define rectal prolapse? 	Anatomy	60 minutes	Lectures	MCQS, SEQS
ANAL CANAL	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> • Describe the dentate/ pectinate line? • Describe the differences in the anal canal above and anal 	Anatomy	60 minutes	Lectures	MCQS, SEQS

	<p>canal below the dentate line?</p> <ul style="list-style-type: none"> Describe the blood supply, innervation and lymphatic drainage of anal canal? Define hemorrhoids, anal fissure and abscess 				
ANORECTAL MALFORMATION	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Describe the normal anatomy of the perineum List the causes of anorectal malformation Enumerate different types of anorectal malformation Identify clinical features of different types of anorectal malformation 	PAEDS SURGERY	60 minutes	Lecture	Mcqs
DEFECATION	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p> <ul style="list-style-type: none"> Define “Defecation”. List Physiologic Arrangement that Favors Defecation Reflex. List & Explain the Levels of Integration of Defecation Reflex. Explain the Mechanism of Defecation. List Factors that Affects Large Bowel Activity. 	Physiology	60 minutes	Lectures	MCQS, SEQS
ANORECTAL DISEASES	<p>At the end of this lecture First Year M.B.B.S. students will be able to;</p>	SURGERY	60 minutes	Lecture	Mcqs

	<ul style="list-style-type: none"> • To describe the anatomy of the anus and anal canal • Enlist the common perianal diseases • Enumerate causes of painful and painless bleeding per rectum • Define and Classify fistula-in-ano • Define fissure and explain its clinical presentation • Define and Classify Perianal Abscess and its clinical presentation • Define and classify haemorrhoids. • Enlist the risk factors for haemorrhoids 				
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