2025

First Year MBBS

Study Guide

Foundation Module-I

Department of Medical Education

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Prepared By	Reviewed By	Approved By
Director Medical Education. Asst. Director Medical Education.	Curriculum Committee	Vice Chancellor

Document Revision History

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Prof Naeem Akhtar, Dr Ifra Saeed, Dr. Ayesha Yousaf, Dr Sidra Hamid, & Dr Tehmina Qamar	2017-2018	1st	Developed for First Year MBBS. Composed of Horizontally and vertically Foundation Module - I.
Dr Tehzeeb, Dr Samia Sarwar, Dr Ifra Saeed, Dr. Ayesha Yousaf, Dr Tehmina Qamar, & Dr Sidra Hamid	2019-2020	2nd	Developed for First Year MBBS. Horizontally and vertically integrated Learning objectives updated
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Dr Tehzeeb, Dr Samia Sarwar, Dr Ifra Saeed, Dr Ayesha Yousaf, Dr Tehmina Qamar, & Dr Sidra Hamid	2022-2023	4th	Developed for First Year MBBS. Horizontally and vertically integrated Learning objectives updated, Research, Bioethics, Family Medicine curriculum incorporated along with Professionalism
Dr Samia Sarwar, Dr Ifra Saeed, Dr Ayesha Yousaf, Dr Aneela, & Dr Sidra Hamid	2023-2025	5th	Developed for First Year MBBS. Horizontally and vertically integrated Learning objectives updated, Research curriculum revamped Bioethics, Family Medicine curriculum incorporated along with Professionalism. Entrepreneurship curriculum incorporated
Dr Samia Sarwar, Dr Ifra Saeed, Dr Ayesha Yousaf, Dr Aneela, Dr. Arsalan Manzoor & Dr Farzana Fatima	2025-2025	6th	Developed for First Year MBBS. Horizontally and vertically integrated Learning objectives updated, Research curriculum revamped Bioethics, Family Medicine curriculum incorporated along with Professionalism. Entrepreneurship, Leadership, ITC, Artificial Intelligence, Video Graphy, Expository Writing, Social in Medicine curriculum incorporated

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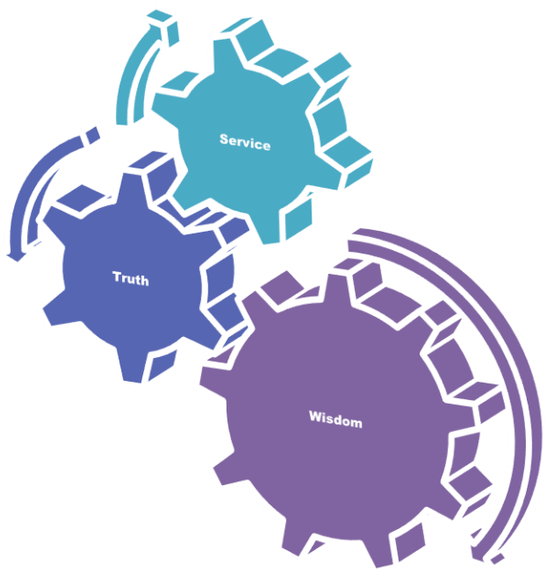
University Moto, Vision, Values & Goals

RMU Motto



Vision and Values

Highly recognized and accredited center of excellence in Medical Education, using evidence-based training techniques for development of highly competent health professionals, who are critical thinkers, experiential self-directed life long learners and are socially accountable

Mission Statement

To impart evidence-based research-oriented health professional education in order to provide best possible patient care and inculcate the values of mutual respect, ethical practice of healthcare and social accountability.

Goals of the Undergraduate Integrated Modular Curriculum

The Undergraduate Integrated Learning Program is geared to provide you with quality medical education in an environment designed to:

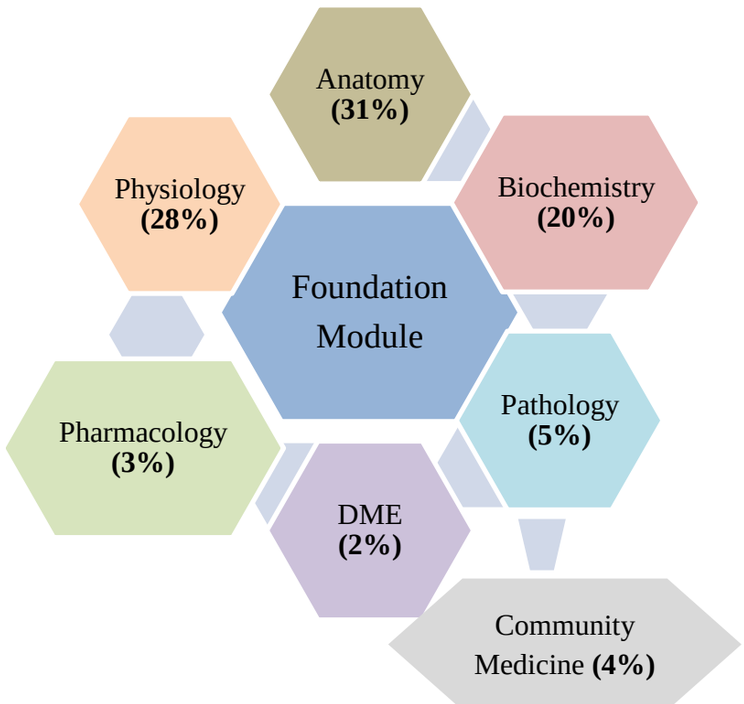
- Provide thorough grounding in the basic theoretical concepts underpinning the practice of medicine.
- Develop and polish the skills required for providing medical services at all levels of the Health care delivery system.
- Help you attain and maintain the highest possible levels of ethical and professional conduct in your future life.
- Kindle a spirit of inquiry and acquisition of knowledge to help you attain personal and professional growth & excellence.

First Year MBBS 2025

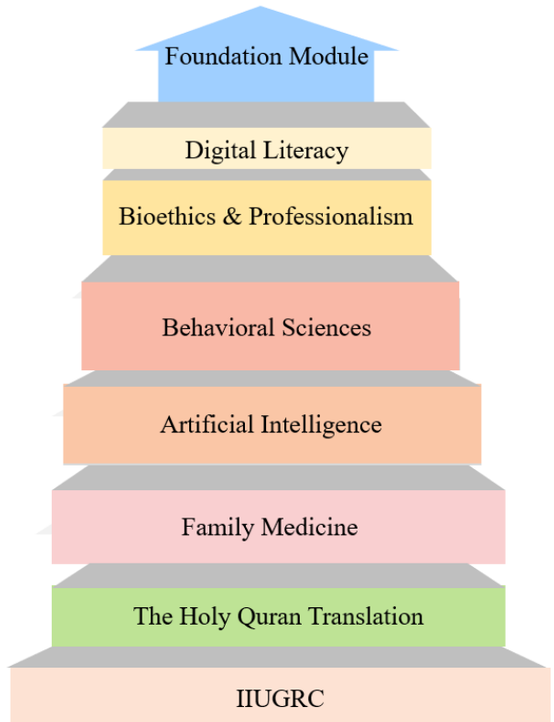
Study Guide

Foundation Module - I

Integration



Disciplines in Foundation Module - I



Spiral / General Education Cluster Courses (5%)

Discipline Wise Details of Modular Content

Integration					
Themes					
Block	**Module**	**General Anatomy**	**Embryology**	**Histology**	**Gross Anatomy**
I	• Anatomy	Introduction to General Anatomy	General Embryology • Introduction to Human Development • Oogenesis • Spermatogenesis • Female Reproductive Cycles • Ovulation and Fertilization • Cleavage and Blastocyst Formation • Development of Mammary Gland	General Histology • Types of Epithelium • Specialization of Apical Cell Surface • Intercellular Junctions and Adhesions • Glandular Epithelium • Mammary Gland	• Anatomicomedical Terminologies I (position & planes) • Anatomicomedical Terminologies II (Anatomical Terms and Axis of Movements) • Anatomicomedical Terminologies III (Cell and Tissues) • Anatomicomedical Terminologies IV (Skin & Body Systems) • Clavicle • Scapula • Humerus • Anterior Axioappendicular Muscles • Posterior Axioappendicular Muscles • Axilla • Brachial Plexus • Brachial Plexus Injuries • Breast • Sternoclavicular and Acromiclavicular Joints • Radiograph and Surface Anatomy of Axioappendicular Region
	• Biochemistry	• Cell and Cell Organelles, Cell Membrane and Transport Across Cell Membrane, Physicochemical Properties, Enzymes, Cancer, Nucleic Acid Chemistry, Genetics			
	• Physiology	• Functional Organization of The Human Body and Control of the “Internal Environment • The Cell and Its Functions • Genetic Control of Protein Synthesis, Cell Function, And Cell Reproduction • Transport of Substances Through the Cell Membrane			

	Orientation Sessions	
	• Welcome Address by VC, Introduntion to RMU • Introduction to Department of Medical Education & Integrated Modular System. • Assessment Model of RMU And Continuous Internal Assessment • Research Model of RMU (IUGRC), Biomedical Ethics, & Family Medicine • Introduction to Digital Services RMU • Introduction to Anatomy Department • Introduction to Physiology Department • Introduction to Biochemistry • Introduction to Behavioral Sciences • Intorduction to Pharmacology • Introduction to Pathology • Introduction to Community Medicine & Research Model of RMU	
	Spiral Courses	
	• Bioethics & Professionalism	• Introduction to history of medical ethics • Leadership Professionalism (DME)
	• Family Medicine	• Introduction to Family Medicine & its application in health care system
	• Integrated Under Graduate Research Innovation (IUGRC)	• Research I Introduction of health research process • Research II characteristic of research process • Research III Basis of ethics in health research • Research IV Basics of ethics in medical research
	• Behavioral Sciences	• Introduction to Behavioral Sciences • Stress in Medical Students & its Managment
	• Information Technology (IT)	• How to use Higher Education Commission (HEC) digital library.
	• Community Medicine (Life Style and Prevention)	• Healthy Lifestyle: A Foundation for Medical Professionals
	Vertical Integration	
	• Pathology	Clinically content relevant to Foundation Module - I • Introduction to Pathology • Cellular Responses to Injury • Intracellular Accumulations • Pigments • Free Radicals/ Reactive Oxygen Species (Ros). • Oxidative StressIrreversible Injury.

		• NecrosisApoptosis (Irreversible Injury) • Genetic Disorders
	• Pharmacology	• Introduction to Pharmacology • Pharmacokinetic processes • Receptors and signal transduction processes
	• Community Medicine	• Introduction to Community Medicine & Research Model of RMU • Immunization & Vaccination • Health Determinants & Indicators • Life Style Medicine • Health Education & Communication
	• Medicine	• Introduction to Medicine and History of Medicine • Chromosomal Abrassions
	• Surgery	• History taking & its importance • CA Breast
	• Obstetrics & Gynaecology	• Infertility • Invitro Fertilization
	• Peadiatrics	• Medical Genetics & Dysmorphology
Early Clinical Exposure (ECE)		
	Departments • Medicine & Allied • Surgery and Trauma • Emergency Department	Skill - 1: Hand Washing Skiill – 2: Wearing Gloves Skill – 3: Providing Basic Life Support in Adults Skill – 4: Scrubbing for Operation Theatre
Clinical Relevance		
	• Medical Ethics • Genetic Disorders • Understanding cellular and molecular mechanisms in disease (e.g., cancer and diabetes) • Importance of homeostasis in maintaining normal physiological function (e.g., dehydration and acid-base imbalances) • Application of medical ethics in real-life scenarios, such as patient confidentiality • Effective doctor-patient communication in history-taking and empathy	

Table of Contents

Foundation Module - I Team

Module Name	:	Foundation Module - I
Duration of module	:	06 Weeks
Coordinator	:	Dr. Tayyaba Qureshi
Co-coordinator	:	Dr. Zenera Saqib
Reviewed by	:	Module Committee

Module Committee		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Umar
2.	Director DME	Prof. Dr. Ifra Saeed
3.	Convener Curriculum	Prof. Dr. Naeem Akhter
4.	Chairperson Anatomy & Dean Basic Sciences	Prof. Dr. Ayesha Yousaf
5.	Additional Director (Assessment) DME	Dr. Arsalan Manzoor Mughal
6.	Chairperson Physiology	Prof. Dr. Samia Sarwar
7.	Chairperson Biochemistry	Dr. Aneela Jamil
8.	Focal Person Anatomy First Year MBBS	Asso. Prof. Dr. Mohtashim Hina
9.	Focal Person Physiology	Dr. Sidra Hamid
10.	Focal Person Biochemistry	Dr. Aneela Jamil
11.	Focal Person Pharmacology	Dr. Zunera Hakim
12.	Focal Person Pathology	Dr. Asiya Niazi
13.	Focal Person Behavioral Sciences	Dr. Saadia Yasir
14.	Focal Person Community Medicine	Dr. Afifa Kulsoom
15.	Focal Person Quran Translation Lectures	Dr. Uzma Zafar
16.	Focal Person Family Medicine	Dr. Sadia Khan

Module Task Force Team		
1.	Coordinator	Dr. Tayyaba Qureshi (Assistant Professor of Anatomy)
2.	DME Focal Person	Dr. Farzana Fatima
3.	Co-coordinator	Dr. Zenera Saqib (Senior Demonstrator of Anatomy)
4.	Co-Coordinator	Dr. Uzma Kiyani (Senior Demonstrator of Physiology)
5.	Co-coordinator	Dr. Raja Khalid Yaqoob (Demonstrator of Biochemistry)

DME Implementation Team		
1.	Director DME	Prof. Dr. Ifra Saeed
2.	Implementation Incharge 1st & 2nd Year MBBS	Dr. Arsalan Manzoor Mughal Dr. Farzana Fatima
3.	Assistant Director DME	Dr. Farzana Fatima
4.	Editor	Muhammad Arslan Aslam

Module I - Foundation Module - I

Introduction: In the Foundation Module - I students will develop understanding of the basic concepts of cell Physiology, Biochemistry, Anatomy, Pathology, Pharmacology, Community medicine and study skills through an integrated course.

Rationale: The Foundation Module - I is designed to impart basic knowledge about the normal structure, organization, functions and development of human body. This knowledge will serve as a base on which the student will construct further knowledge about the etiology, pathogenesis and prevention of diseases; the principles of their therapeutics and management.

Module Outcomes

Each student will be able to:

Knowledge

- Acquire the basic science knowledge and terminology necessary to understand the development and functioning of normal structures of human body starting from biochemical level to organ system level, as well as the concepts of diseases in the community and drug dynamics.
  Use technology based medical education including
- **Artifical Intelligence.**
  Appreciate concepts & importance of**:**
- **Family Medicine**
- **Biomedical Ethics**
- **Research.**
- **Enterpeneurship**

Skills

- Identify different anatomical planes and correlate the importance of these with clinical medicine.
- Identify various apparatus used in lab.
- Preparation and identification of microscopic slides.
- Preparation of solutions of various strengths.
- **Basic Life Support (BLS)**
- **Early Clinical Exposure (ECE)**

Attitude

- Demonstrate **professional attitude, team-building spirit** and **good communication skills.**

This module will run in 6 weeks' duration. The content will be covered through introduction of topics. Instructional strategies are given in the timetable and learning objectives are given in the study guides. Study guides will be uploaded on the university website. Good luck!

SECTION - I

Terms & Abbreviations

Contents

Tables & Figures

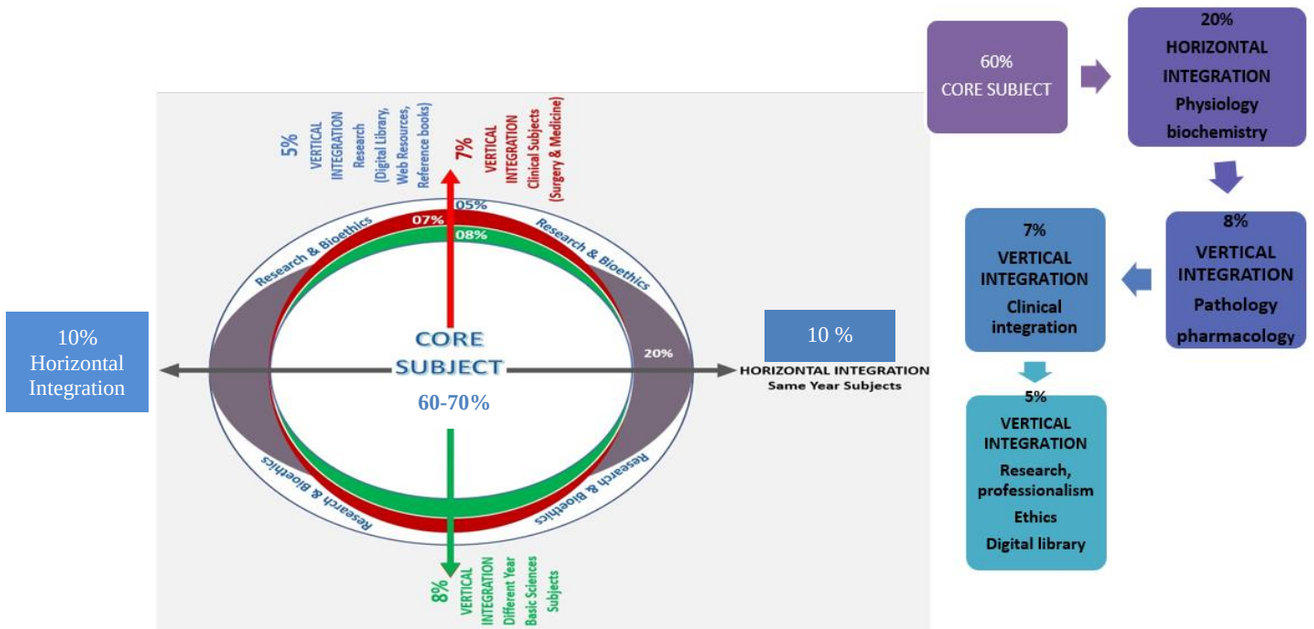
Table1. Domains of Learning According to Blooms Taxonomy

Sr. #	Abbreviation	Domains of learning
1.	C	**Cognitive Domain:** knowledge and mental skills.
	• C1	Remembering
	• C2	Understanding
	• C3	Applying
	• C4	Analyzing
	• C5	Evaluating
	• C6	Creating
2.	P	**Psychomotor Domain:** Motor skills.
	• P1	Imitation
	• P2	Manipulation
	• P3	Precision
	• P4	Articulation
	• P5	Naturalization
3.	A	**Affective Domain:** feelings, values, dispositions, attitudes, etc
	• A1	Receive
	• A2	Respond
	• A3	Value
	• A4	Organize
	• A5	Internalize

Teaching and Learning Methodologies / Strategies

Large Group Interactive Session (LGIS)

The large group interactive session is structured format of Prof Umar Model of Integrated lecture. It will the followed for delivery of all LGIS. The lecturer will introduce a topic or common clinical condition and explains the underlying phenomena through questions, pictures, videos of patients, interviews, and exercises, etc. Students are actively involved in the learning process.



Prof Umar's Model of Integrated Lecture

Small Group Discussion (SGD)

This format helps students to clarify concepts acquire skills and attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics or power point presentations. Students exchange opinions and apply knowledge gained from lectures, SGDs and self study. The facilitator role is to ask probing questions, summarize and help to clarify the concepts.

Table 2. Standardization of teaching content in Small Group Discussions

S. No	Topics	Approximate %
1	Title Of SGD	
2	Learning Objectives from Study Guides	
3	Horizontal Integration	24%
4	Core Concepts of the topic	60%
5	Vertical Integration	08%
6	Related Advance Research points	08%
7	Related Ethical points	
8	Artificial Intelligence	
9	Family Medicine	

Table 3. Steps of Implementaion of Small Group Discussions

Step 1	Sharing of Learning objectives by using students Study guides	First 5 minutes
Step 2	Asking students pre-planned questions from previous teaching session to develop co-relation (these questions will be standardized)	5minutes
Step 3	Students divided into groups of three and allocation of learning objectives	5minutes
Step 4	ACTIVITY: Students will discuss the learning objectives among themselves	15 minutes
Step 5	Each group of students will present its learning objectives	20 min
Step 6	Discussion of learning content in the main group	30min
Step 7	Clarification of concept by the facilitator by asking structured questions from learning content	15 min
Step 8	Questions on core concepts	
Step 9	Questions on horizontal integration	
Step 10	Questions on vertical integration	
Step 11	Questions on related research article	
Step 12	Questions on related ethics content	
Step 13	Students Assessment on online MS teams (5 MCQs)	5 min
Step 14	Summarization of main points by the facilitator	5 min
Step 15	Students feedback on the SGD and entry into log book	5 min
Step 16	Ending remarks	

Self Directed Learning (SDL)

- Self- directed learning is a process where students take primary charge of planning, continuing, and evaluating their learning experiences.
- Time Home assignment
- Learning objectives will be defined
- Learning resources will be given to students = Textbook (page no), web site
- Assessment:

  i Will be online on LMS (Mid module/ end of Module)

  ii.OSPE station

Case Based Learning (CBL)

- It's a learner centered model which engages students in discussion of specific scenarios that typically resemble real world examples.
- Case scenario will be given to the students
- Will engage students in discussion of specific scenarios that resemble or typically are real-world examples.
- Learning objectives will be given to the students and will be based on
  i. To provide students with a relevant opportunity to see theory in practice
  ii. Require students to analyze data in order to reach a conclusion.
  iii. Develop analytic, communicative, and collaborative skills along with content knowledge.

Problem Based Learning (PBL)

- Problem-based learning (PBL) is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem.
- This problem is what drives the motivation and the learning.

The 7- Jump-Format of PBL (Maastricht Medical School)	
Step 7	Syntheise & Report
Step 6	Collect Information from outside
Step 5	Generate learning Issues
Step 4	Discuss and Organise Ideas
Step 3	Brainstorming to Identify Explanations
Step 2	Define the Problem
Step 1	Clarify the Terms and Concepts of the Problem Scenario
Problem- Scenario	

Figure 2. PBL 7 Jumps Model

Practical Sessions/Skill Lab (SKL)

Practical Session/ Skill Lab (SKL)	
Demonstration/ power point presentation 4-5 slide	10-15 minutes
Practical work	25-30 minutes
Write/ draw and get it checked by teacher	20-25 minutes
05 mcqs at the end of the practical	10 minutes
At the end of module practical copy will be signed by head of department	
At the end of block the practical copy will be signed by Head of Department Dean Medical education department QEC	

SECTION – II

Learning Objectives, Teaching Strategies & Tool of Assessments

Contents

- **Orientation Sessions**
- **Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)**
- **Large Group Interactive Session:**
  - Anatomy (LGIS)
  - Physiology (LGIS)
  - Biochemistry (LGIS)
- **Small Group Discussions**
  - Anatomy (SGD)
  - Physiology (SGD)
  - Biochemistry (SGD)
- **Self-Directed Topic, Learning Objectives & References**
  - Anatomy (SDL)
  - Physiology (SDL)
  - Biochemistry (SDL)
- **Skill Laboratory**
  - Anatomy
  - Physiology
  - Biochemistry
- **Learning Management System (LMS)**
  - Anatomy (LMS)
  - Physiology (LMS)
  - Biochemistry (LMS)

Orientation Sessions

17-02-25 Monday		Worthy Vice Chancellor	8:30 AM – 11:00 AM	Welcome Address by VC, Introduntion to RMU	Prof. Dr. Muhammad Umar (SI, HI)
Sr. No	**Date/Day**	**Department**	**Time**	**Topic of Lectures**	**Teachers Name**
Day 1					
1.	17-02-25 Monday	Department of Medical Education (DME)	11:00 AM –11:40 AM	Introduction to Department of Medical Education & Integrated Modular System.	Prof. Dr. Ifra Saeed / Dr. Farzana Fatima
2.	17-02-25 Monday	Department of Assessment	11:40 AM – 12:20 PM	Assessment Model of RMU And Continuous Internal Assessment	Dr. Arsalan Manzoor Mughal
3.	17-02-25 Monday	Family Medicine, Research, Biomedical Ethics & Community Medicine	12:20 PM – 01:00 PM	Research Model of RMU (IUGRC), Biomedical Ethics, & Family Medicine	Dr. Sadia Khan Dr. Khula Noreen
4.	17-02-25 Monday	IT Department	01:00 PM – 2:00 PM	Introduction to Digital Services RMU	Hafiz Shahid Rasool (Director IT)
Day 2					
5.	18-02-25 Tuesday	Department of Anatomy	08.00 AM – 09:00 AM	Introduction to Anatomy Department	Prof. Dr. Ayesha Yousaf
6.	18-02-25 Tuesday	Department of Physiology	09.00 AM – 10.00 AM	Introduction to Physiology Department	Prof. Dr. Samia Sarwar
7.	18-02-25 Tuesday	Department of Biochemistry	10:00 AM – 11:00 AM	Introduction to Biochemistry	Dr. Aneela
8.	18-02-25 Tuesday	Department of Behavioral Sciences	11:00 AM – 12:00 PM	Introduction to Behavioral Sciences	Prof. Dr. Asad Tameez Ud Din
9.	18-02-25 Tuesday	Department of Pharmacology	12:20 PM – 01:00 PM	Intorduction to Pharmacology	Dr.
Day 3					
10.	19-02-25 Wednesday	Department of Pathology	10:00 AM – 11:00 AM	Introduction to Pathology	
11.	19-02-25 Wednesday	Department of Community Medicine	12:20 PM – 01:00 PM	Introduction to Community Medicine & Research Model of RMU	

Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)

(Knowledge)
Anatomy Large Group Interactive Session (LGIS)

Theory						
Code	**Topic**	**Learning Objectives At the End of One Hour the Lecture the Student Should Be Able To**	**Calgary Gauge**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-A-001	Introduction to General Anatomy	• Define the term Anatomy and its various branches	Should Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Define different terminologies related to Anatomy	Should Know	C1		
		• Describe different Anatomical planes and directions in relation to anatomical position	Must Know	C2		
		• Elaborate different phases in life span of man	Nice to Know	C2		
		• Define basic tissues of human body	Should Know	C1		
		• Discuss general outlines and functions of basic tissues	Must Know	C2		
		• Describe formation of different systems of body	Should Know	C2		
		• Understand the curative and preventive health care measures.	Nice to Know	C3		
		• Practice the principles of bioethics	Nice to Know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Read relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
Embryology						
M1-FM-A-002	Introduction to Human Development	• Discuss significance and importance of studying Embryology.	Should Know	C2	LGIS	MCQ SAQ OSVE OSPE
		• Define different terminologies to describe developmental stages.	Must Know	C1		
		• Describe series of critical events that take place during embryonic development.	Must Know	C2		

		• Appreciate difference between embryonic and fetal period.	Must Know	C2		
		• Discuss common chromosomal abnormalities.	Should Know	C2		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare.	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Use HEC digital library.	Nice to know	C3		
		• Read relevant research article.	Nice to know	C3		
M1-FM-A-003	Oogenesis	• Discuss role of female hormones during oogenesis	Must Know	C2	LGIS	MCQ SAQ OSVE OSPE
		• Describe different stages of oogenesis	Must Know	C2		
		• Correlate clinical aspects of gametogenesis	Must Know	C3		
		• To understand the bio-physiological aspects of gametogenesis	Must Know	C2		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Practice the principles of bioethics	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
M1-FM-A-004	Spermatogenesis	• Define spermatogenesis.	Should Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Describe different phases of spermatogenesis	Should Know	C2		
		• Discuss stages of spermiogenesis	Should Know	C2		
		• Elaborate functions of male hormones during spermatogenesis	Should know	C2		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Practice the principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		

		• Able to read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Should Know	C3		
M1-FM-A-005	Female Reproductive Cycles	• Understand Ovarian and Uterine cycle	Must Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Correlate Ovarian and Uterine cycles	Must Know	C3		
		• Describe different phases of Ovarian and Uterine cycles	Must Know	C2		
		• Enumerate female sex hormones	Must Know	C1		
		• Discuss functional significance of female reproductive hormones in reproductive cycles	Must Know	C2		
		• Discuss the anovulatory cycle in female	Must Know	C3		
		• Understand the bio-physiological aspects female reproductive cycle	Nice to know	C2		
		• Focus on provision of curative and preventive health care services	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-006	Ovulation and Fertilization	• Describe follicular development, ovulation and subsequent events in ovary	Must Know	C2	LGIS	MCQ SAQ OSVE OSPE
		• Give an account on role of luteinizing hormone in ovulation	Must Know	C1		
		• Discuss capacitation in female genital tract	Must Know	C2		
		• Describe different phases and results of fertilization	Should Know	C2		
		• Enlist causes of infertility.	Should Know	C1		
		• Enlist different technologies of assisted fertilization	Should Know	C1		
		• Discuss different techniques of assisted reproduction with special emphasis on IVF	Should Know	C3		
		• Discuss the bio-physiological aspects of ovulation and fertilization	Nice to know	C2		
		• Focus on provision of curative and preventive health care services.	Nice to know	C3		

		• Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-007	Cleavage and Formation of Blastocyst	• Define cleavage	Must Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Define compaction	Must Know	C1		
		• Describe blastocyst formation	Must Know	C2		
		• Understand the bio-physiological aspects of cleavage and blastocyst	Must Know	C2		
		• Correlate clinical condition of cleavage and blastocyst formation	Should Know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-008	Development Of Mammary Gland	• Describe the Sources of development of mammary gland .	Must Know	C2	LGIS	MCQ SAQ OSVE OSPE
		• Discuss different stages of activity of mammary gland .	Must Know	C2		
		• Understand the bio-physiological aspects of mammary gland.	Must Know	C2		
		• Correlate clinical conditions of mammary gland	Should Know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Practice principles of bioethics.	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Read a relevant research article;	Nice to know	C3		

		• Use HEC digital library.	Nice to know	C3		
Histology						
M1-FM-A-009	Types of Epithelium	• Define Epithelium	Must Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Discuss general features of Epithelial cells (basal, apical and lateral surfaces)	Must Know	C2		
		• Classify epithelium	Must Know	C2		
		• Explain the histological structure of simple epithelium	Must Know	C2		
		• Describe the location and functions of simple epithelium	Must Know	C2		
		• Classify stratified epithelium.	Must Know	C2		
		• Describe the functions and distribution of stratified epithelium	Must Know	C1		
		• Appreciate the differences between stratified and pseudostratified epithelium	Must Know	C2		
		• Describe characteristics of transitional epithelium	Must Know	C2		
		• Correlate clinical aspects of different types of epithelia	Should Know	C3		
		• To understand the bio-physiological aspects of different types of epithelia	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0010	Specializations of Apical Cell Surface	• Enumerate different apical modifications of cells	Must Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Describe histological structure of each apical modification.	Must Know	C2		
		• Discuss functions of each type of apical modifications	Must Know	C2		
		• Correlate clinical aspects of Specializations	Should Know	C3		

		of apical cell surfaces				
		• Understand the bio-physiological aspects of specializations of apical cell surface	Nice to know	C2		
		• Enlist causes of infertility.	Should Know	C 1		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0011	Intercellular Junctions and Adhesions	• Enumerate different cell junctions	Must Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Describe histological structure of different cell junctions	Must Know	C2		
		• Understand the bio-physiological aspects of intercellular junctions and adhesions	Should Know	C2		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0012	Glandular Epithelium	• Define gland.	Must Know	C1	LGIS	MCQ SAQ OSVE OSPE
		• Compare between exocrine and endocrine glands with examples.	Must Know	C2		
		• Classify glands on the basis of morphology, secretory product, and mode of secretion.	Must Know	C2		
		• Understand the bio-physiological aspects of glands.	Should know	C2		
		• Practice principles of bioethics.	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare.	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		

		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library		C3		
M1-FM-A-0013	Development and Histology Of Mammary Gland	• Describe the Sources of development of mammary gland	Must Know	C2	LGIS	MCQ SAQ OSVE OSPE
		• Discuss the ultra structure of mammary gland	Must Know	C2		
		• Discuss different stages of activity of mammary gland	Must Know	C2		
		• Understand the bio-physiological aspects of mammary gland	Should Know	C2		
		• Correlate clinical conditions of mammary glands.	Should Know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		

(Knowledge)

Anatomy Small Group Discussion (SGDs)

Theory						
Code	**Demonstration/Dissection**	**At the End Of The Demonstration Student Should Be Able To**	**Calgary Gauge**	**Learning Domains**	**Teaching Strategy**	**Assessment Tool**
M1-FM-A-0014	Anatomicomedical Terminology I (Anatomical Position and Planes)	• Describe different anatomical planes of human body and correlate with radiological anatomy • Demonstrate anatomical position of human body	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Apply the strategic use of artificial intelligence in healthcare • Practice principles of bioethics • Read a relevant research article	Nice to know	P C3 C3		
M1-FM-A-0015	Anatomicomedical Terminology -II	• Define different terms related to body parts	Must Know	C1		MCQ
		• Describe axis of movement	Must Know	C2		
		• Demonstrate axis of movement	Must Know	P		

	(Anatomical Terms and Axis of Movements)	• Strategic use of artificial intelligence in healthcare	Nice to know	C3	Skill lab SGD	SAQ OSVE OSPE
		• Focus on provision of curative and preventive health care services	Nice to Know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0016	Anatomicomedical Terminology -III (Cell and Tissues)	• Define cell	Must Know	C1	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Define tissue	Must Know	C1		
		• Describe basic tissues of human body	Must Know	C2		
		• Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Understand the curative and preventive health care services	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use digital library	Nice to know	C3		
M1-FM-A-0017	Anatomicomedical Terminology-IV (Skin and Body Systems)	• Describe general organization of different systems of body	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Discuss concepts of skin and fascia	Must Know	C2		
		• Describe the classification of blood vessels	Must Know	C2		
		• Describe the concepts of divisions of nervous system	Must Know	C1		
		• Describe the formation of spinal nerve	Should Know	C2		
		• Practice principles of bioethics	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Read a relevant research article • Apply strategic use of artificial intelligence in healthcare	Nice to know	C3		

		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0018	Clavicle	• Determine the side	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Demonstrate anatomical position, general features, attachments and articulations (medial and lateral).	Must Know	P		
		• Elaborate pectoral girdle formation movement and dislocation.	Must Know	C3		
		• Describe ossification in detail and Fracture Of clavicle.	Should Know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
M1-FM-A-0019	Scapula	• Determine the side	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Demonstrate anatomical position, general features, attachments, and articulation. (clavicle and shoulder joints)	Must Know	P		
		• Describe scapular anastomosis and its clinical significance	Must Know	C3		
		• Demonstrate Scapular movements.	Must Know	P		
		• Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Focus on provision of curative and preventive health care services	Nice to know	C3		
		• Use HEC digital library.	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
M1-FM-A-0020	Humerus	• Determine the side	Must Know	C2		MCQ SAQ OSVE OSPE
		• Demonstrate anatomical position, general features, attachments and articulation (shoulder and elbow).	Must Know	P		
		• Describe the importance of anatomical and	Should Know	C2		

		surgical neck of humurus			Skill lab SGD	OSCE
		• Correlate axillary, radial, median and ulnar nerve damage with respect to various fractures of humerus.	Should Know	C2		
		• Describe Significance of bicipital groove, angle of humeral torsion and carrying angle	Must Know	C2		
		• Discuss Ossification and fractures	Should to know	C3		
		• Understand the curative and preventive health care measures.	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
M1-FM-A-0021	Anterior Axioappendicular Region	• Describe Superficial fascia with cutaneous nerves and vessels of anterior axioappendicular region • Tabulate muscles of the anterior axioappendicular region	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Understand the bio-physiological aspects of anterior axioappendicular region.	Should Know	C1		
		• Strategic use of artificial intelligence in healthcare	Nice to Know	C3		
		• Understand the curative and preventive health care measures • Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to Know	C3		
		• Use HEC digital library	Nice to Know	C3		
		• Read a relevant research article	Nice to know	C3		
M1-FM-A-0022	Posterior Axioappendicular Muscles	• Tabulate muscles of the pectoral region (origin, insertion, nerve supply, action and applied).	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Identify and describe the pectoral and clavipectoral fascia	Must Know	C2		

		• Use HEC digital library	Nice to Know	C3		
		• Understand the curative and preventive health care measures	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to Know	C3		
		• Read a relevant research article	Nice to Know	C3		
M1-FM-A-0023	Axilla	• Define axilla	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Describe its boundaries.	Must Know	C2		
		• Enumerate the Contents of axilla, (axillary artery with its branches, axillary vein and tributaries, axillary lymphatics, lymph nodes and brachial plexus).	Must Know	C2		
		• Describe the clinical significance of axillary lymph nodes	Should Know	C3		
		• Practice principles of bioethics	Nice to Know	C3		
		• Understand the curative and preventive health care measures	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to Know	C3		
		• Read a relevant research article	Nice to Know	C3		
		• Use HEC digital library	Nice to Know	C3		
M1-FM-A-0024	Brachial Plexus	• Describe the formation of brachial plexus its roots and trunks.	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Describe the origin and root value of different nerves arising	Must Know	C2		
		• Understand the curative and preventive health care measures	Nice to Know	C3		
		• Practice principles of bioethics	Nice to Know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to Know	C3		
		• Read a research article on brachial plexus	Nice to Know	C3		
		• Use HEC digital library	Nice to Know	C3		
M1-FM-A-0025	Brachial Plexus Injuries	• Describe the different neurological deficits arising as a result of damaged to roots, trunks and branches of brachial plexus at different	Must Know	C3	Skill lab SGD	MCQ SAQ OSVE

		levels.				OSPE OSCE
		• Describe the origin and root value of different nerves arising	Must Know	C3		
		• Read a research article on brachial plexus	Nice to know	C3		
		• Understand the curative and preventive health care measures	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0026	Breast	• Describe the extent of breast	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Describe the relations of breast	Must Know	C2		
		• Describe structure of gland.	Must Know	C2		
		• Discuss the blood supply, venous drainage and lymphatics.	Must Know	C2		
		• Correlate Clinical picture and lymphatic spread in breast carcinoma.	Should know	C3		
		• Discuss congenital anomalies of breast	Should know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Understand the curative and preventive health care measures	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice To Know			
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0027	Sternoclavicular and acromioclavicular joints	• Classify joints and discuss the attachment of capsule and ligaments and discuss the different movement on these joints along with muscles involved in these movements.	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE
		• Describe neurovascular supply.	Must Know	C2		
		• Understand the curative and preventive health care measures	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		

		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		
M1-FM-A-0028	Surface Anatomy & Radiology	• Discuss the surface anatomy of axioappendicular region.	Must Know	C2	Skill lab SGD	MCQ SAQ OSVE OSPE OSCE
		• Interpret the normal radiologic appearance of bones in axioappendicular region.	Must Know	C3		
		• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3		
		• Practice principles of bioethics	Nice to know	C3		
		• Understand the curative and preventive health care measures	Nice to know	C3		
		• Read a relevant research article	Nice to know	C3		
		• Use HEC digital library	Nice to know	C3		

(Knowledge)
Anatomy Self Directed Learning (SDL)

Theory			
Code	**Topics Of SDL**	**Learning Objectives**	**Learning Resources**
M1-FM-A-0029	Green Stick Fracture of Clavicle	• Determine the side • Demonstrate anatomical position, general features, attachments and articulations (medial and lateral). • Describe Intramembranous development. • Describe ossification in detail and Fracture of Clavicle • Able to read a relevant research article	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Clavicle (Chapter 3, Page143,153,154). ❖ https://www.youtube.com/watch?v=Ykfzt-olaYs
M1-FM-A-0030	Applied Anatony of Scapular Anastomosis and Its Clinical Significance	• Determine the side • Demonstrate anatomical position, general features, attachments and articulations (medial and lateral). • Describe scapular anastomosis and its clinical significance • Able to read a relevant research article	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Scapula (Chapter 3, Page143-145,154,171,172). ❖ https://www.youtube.com/watch?v=zFawNgaSL6E

M1-FM-A-0031	Applied Anatony of injury to serratus Anterior	• Describe Superficial fascia with cutaneous nerve and vessels of anterior axioappendicular region. • Understand the bio-physiological aspects of anterior axioappendicular region. • Able to read a relevant research article and use digital library	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Anterior axioappendicular muscles (Chapter 3, Page 168,169). https://teachmeanatomy.info/
M1-FM-A-0032	Applied Anatony of Posterior axioappendicular muscles	• Tabulate Muscles of the pectoral region (origin, insertion, nerve supply, action and applied). • Identify and describe the pectoral and clavipectoral fascia. • Able to read a relevant research article and use digital library	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Posterior axioappendicular muscles (Chapter 3, Page 170,171). https://teachmeanatomy.info/
M1-FM-A-0033	Applied Anatony of Axilla	• Define axilla • Describe its boundaries, • Enumerate the Contents of axilla, (axillary artery with its branches, axillary vein and tributaries, axillary lymphatics, lymph nodes and brachial plexus).	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Axilla (Chapter 3, Page 183-190,197,198). ❖ https://teachmeanatomy.info/ ❖ https://www.youtube.com/watch?v=uSMugI_NNJc
M1-FM-A-0034	Erb's paralysis	• Describe the formation of brachial plexus its roots and trunks. • Describe the origin and root values of different nerves arising • Able to read a research article on brachial plexus • Able to use digital library	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Brachial plexus (Chapter 3, Page 191-196). ❖ https://www.youtube.com/watch?v=1qgqrXlpr1Y
M1-FM-A-0035	Klumpke's paralysis	• Describe the different neurological deficits arising as a result of damaged to roots, trunks and branches of brachial plexus at different levels. • Able to read a research article on brachial plexus	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Brachial plexus injuries (Chapter 3, Page 199-200). ❖ https://teachmeanatomy.info/ ❖ https://www.youtube.com/watch?v=c9giLkwgYA0
M1-FM-A-0036	Carcinoma of Breast	• Describe the extent of breast • Describe the relations of breast • Describe structure of gland. • Discuss related clinical	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Breast (Chapter 4, Page 315-318,323-326). ❖ https://www.youtube.com/watch?v=OW0qQnT5GoA

(Psychomotor)

Histology Practicals Skill Laboratory (SKL)

Practicals						
Code	**Practical**	**At the End of The Practical Student Should Be Able To**	**Calgary Gauge**	**Learning Domains**	**Teaching Strategy**	**Assessment Tool**
M1-FM-A-0037	Introduction to Microscope	• Identify different types of microscopes.	Must Know	C1	Skill lab Demonstration	OSPE
		• Describe functions of different parts of microscope.	Must Know	C1		
		• Identify different types of lenses.	Must Know	C1		
		• Focus slides.	Should Know	P		
M1-FM-A-0038	Simple epithelium	• Classify epithelium.	Must Know	C2	Skill lab Demonstration	OSPE
		• Illustrate different types of simple epithelium	Must Know	P		
		• Identify types of simple epithelium.	Must Know	P		
		• Write two points of identification	Should Know	C1		
M1-FM-A-0039	Stratified epithelium /Transitional Epithelium	• Classify stratified epithelium.	Must Know	C1	Skill lab Demonstration	OSPE
		• Illustrate different types of stratified epithelium	Must Know	C1		
		• Discuss functions of stratified epithelium	Must Know	C2		
		• Enlist sites of specific type of epithelium	Must Know	C2		
		• Identify epithelium under microscope	Must Know	C1		
		• Write two points of identification	Should Know	P		
M1-FM-A-0040	Mammary gland	• Illustrate the different stages of activity of mammary gland	Must Know	C2	Skill lab Demonstration	OSPE
		• Identify the slides of different stages of mammary gland	Should Know	P		

Anatomy LGIS Syllabus of Learning Management System (LMS)

Theory				
Code	**Topic**	**Learning Objectives At the End of One Hour the Lecture the Student Should Be Able To**	**Learning Domain**	**Learning Resources**
M1-FM-A-0041	Introduction to General Anatomy	• Define the term Anatomy and its various branches	C1	1. Clinically Oriented Anatomy by Keith Moore 9th edition. 2. Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III
		• Define different terminologies related to Anatomy	C1	
		• Describe different Anatomical planes and directions in relation to anatomical position	C2	
		• Elaborate different phases in life span of man	C2	
		• Define basic tissues of human body	C1	
		• Discuss general outlines and functions of basic tissues	C2	
		• Describe formation of different systems of body	C2	
		• Understand the curative and preventive health care measures.	C3	
		• Practice the principles of bioethics	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Read relevant research article	C3	
		• Use HEC digital library	C3	
Embryology				
M1-FM-A-0042	Introduction to Human Development	• Discuss significance and importance of studying Embryology.	C2	1. Clinically Oriented Anatomy by Keith Moore 9th edition. 2. Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III
		• Define different terminologies to describe developmental stages.	C1	
		• Describe series of critical events that take place during embryonic development.	C2	
		• Appreciate difference between embryonic and fetal period.	C2	

		• Discuss common chromosomal abnormalities.	C2	
		• Understand the curative and preventive health care measures.	C3	
		• Apply the strategic use of artificial intelligence in healthcare.	C3	
		• Practice principles of bioethics	C3	
		• Use HEC digital library.	C3	
		• Read relevant research article.	C3	
M1-FM-A-0043	Oogenesis	• Discuss role of female hormones during oogenesis	C2	1. Clinically Oriented Anatomy by Keith Moore 9th edition. 2. Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III
		• Describe different stages of oogenesis	C2	
		• Correlate clinical aspects of gametogenesis	C3	
		• To understand the bio-physiological aspects of gametogenesis	C2	
		• Understand the curative and preventive health care measures.	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Practice the principles of bioethics	C3	
		• Use HEC digital library	C3	
		• Read a relevant research article	C3	
M1-FM-A-0044	Spermatogenesis	• Define spermatogenesis.	C1	1. Clinically Oriented Anatomy by Keith Moore 9th edition. 2. Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III
		• Describe different phases of spermatogenesis	C2	
		• Discuss stages of spermiogenesis	C2	
		• Elaborate functions of male hormones during spermatogenesis	C2	
		• Understand the curative and preventive health care measures.	C3	
		• Practice the principles of bioethics	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Able to read a relevant research article	C3	
		• Use HEC digital library	C3	

Anatomy SGDs Syllabus of Learning Management System (LMS)

Code	Demonstration/Dissection	At the End Of The Demonstration Student Should Be Able To	Learning Domains	Learning Resources
M1-FM-A-0045	Anatomicomedical Terminology I (Anatomical Position and Planes)	• Describe different anatomical planes of human body and correlate with radiological anatomy • Demonstrate anatomical position of human body •	C2	Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Apply the strategic use of artificial intelligence in healthcare • Practice principles of bioethics • Read a relevant research article	P C3 C3	
M1-FM-A-0046	Anatomicomedical Terminology -II (Anatomical Terms and Axis of Movements)	• Define different terms related to body parts	C1	Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Describe axis of movement	C2	
		• Demonstrate axis of movement	P	
		• Strategic use of artificial intelligence in healthcare	C3	
		• Focus on provision of curative and preventive health care services	C3	
		• Practice principles of bioethics	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Understand the curative and preventive health care measures.	C3	
		• Read a relevant research article	C3	
		• Use HEC digital library	C3	
M1-FM-A-0047	Anatomicomedical Terminology -III (Cell and Tissues)	• Define cell	C1	Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Define tissue	C1	
		• Describe basic tissues of human body	C2	
		• Practice principles of bioethics	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Understand the curative and preventive health care services	C3	
		• Read a relevant research article	C3	

		• Use digital library	C3	
M1-FM-A-0048	Anatomicomedical Terminology-IV (Skin and Body Systems)	• Describe general organization of different systems of body	C2	Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Discuss concepts of skin and fascia	C2	
		• Describe the classification of blood vessels	C2	
		• Describe the concepts of divisions of nervous system	C1	
		• Describe the formation of spinal nerve	C2	
		• Practice principles of bioethics	C3	
		• Understand the curative and preventive health care measures.	C3	
		• Read a relevant research article • Apply strategic use of artificial intelligence in healthcare	C3	
		• Use HEC digital library	C3	
M1-FM-A-0049	Clavicle	• Determine the side	C2	Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Demonstrate anatomical position, general features, attachments and articulations (medial and lateral).	P	
		• Describe Intramembranous development and cleido-cranial dysostosis.	C3	
		• Elaborate pectoral girdle formation movement and dislocation.	C3	
		• Describe ossification in detail and Fracture Of clavicle.	C2, C3	
		• Practice principles of bioethics	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Understand the curative and preventive health care measures.	C3	
		• Use HEC digital library	C3	
		• Read a relevant research article	C3	
M1-FM-A-0050	Scapula	• Determine the side	C2	
		• Demonstrate anatomical position, general features, attachments, and articulation. (clavicle	P	

		and shoulder joints)		Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Describe scapular anastomosis and its clinical significance	C3	
		• Demonstrate Scapular movements.	P	
		• Practice principles of bioethics	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Focus on provision of curative and preventive health care services	C3	
		• Use HEC digital library.	C3	
		• Read a relevant research article	C3	
M1-FM-A-0051	Humerus	• Determine the side	C2	Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Demonstrate anatomical position, general features, attachments and articulation (shoulder and elbow).	P	
		• Describe the importance of anatomical and surgical neck of humurus	C2	
		• Correlate axillary, radial, median and ulnar nerve damage with respect to various fractures of humerus.	C2	
		• Describe Significance of bicipital groove, angle of humeral torsion and carrying angle	C2	
		• Discuss Ossification and fractures	C3	
		• Understand the curative and preventive health care measures.	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Practice principles of bioethics	C3	
		• Use HEC digital library	C3	
		• Read a relevant research article	C3	
M1-FM-A-0052	Anterior Axioappendicular Region	• Describe Superficial fascia with cutaneous nerve and vessels of anterior axioappendicular region and tabulate muscles of the anterior axioappendicular region	C2	Clinical Oriented Anatomy by Keith

		• Understand the bio-physiological aspects of anterior axioappendicular region.	C1	L. Moore.8TH Edition.
		• Strategic use of artificial intelligence in healthcare	C3	
		• Understand the curative and preventive health care measures • Practice principles of bioethics	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Use HEC digital library	C3	
		• Read a relevant research article	C3	
M1-FM-A-0053	Posterior Axioappendicular Muscles	• Tabulate muscles of the pectoral region (origin, insertion, nerve supply, action and applied).	C2	Clinical Oriented Anatomy by Keith L. Moore.8TH Edition.
		• Identify and describe the pectoral and clavipectoral fascia	C2	
		• Use HEC digital library	C3	
		• Understand the curative and preventive health care measures	C3	
		• Apply the strategic use of artificial intelligence in healthcare	C3	
		• Read a relevant research article	C3	

Anatomy Histology Syllabus of Learning Management System (LMS)

Code	Practical	At the End of The Practical Student Should Be Able To	Learning Domain	Learning Resources
M1-FM-A-0054	Introduction to Microscope	• Identify different types of microscopes.	C1	1. B. Young J. W. Health Wheather's Functional Histology 6th edition. 2. Medical Histology by Prof. Laiq Hussain 7th edition. 3. https://www.udemy.com/course/histology/
		• Describe functions of different parts of microscope.	C1	
		• Identify different types of lenses.	C1	
		• Focus slides.	P	
M1-FM-A-0055	Simple epithelium	• Classify epithelium.	C2	1. B. Young J. W. Health Wheather's Functional Histology 6th edition. 2. Medical Histology by Prof. Laiq Hussain 7th edition. https://www.udemy.com/course/histology/
		• Illustrate different types of simple epithelium	P	
		• Identify types of simple epithelium.	P	
		• Write two points of identification	C1	

(Knowledge)

Physiology Large Group Interactive Session (LGIS)

Theory							
Code	**Topic**	**Learning Objectives At the End of Lecture Students Should Be Able To:**	**Calgary Gauge**	**Grade**	**Learning Domain**	**Teaching Strategy**	**Assessment Tools**
M1-FM-P-001	Introduction to Physiology & Physiology Department	• Introduce faculty members			C1	LGIS SGD	SAQ MCQ VIVA
		• Define physiology	Must Know	A	C2		
		• Classify different branches of physiology	Should Know	B	C2		
		• Explain the importance of physiology in medical and clinical sciences	Nice to Know	C	C1		
M1-FM-P-002	Cell physiology & Homeostasis	• Understand functional organization of human body from cell to systems	Must Know	A	C2	LGIS SGD	M SAQ MCQ VIVA
		• Differentiate between prokaryotes and eukaryotes.	Nice To Know	C	C2		
		• Discuss salient features of cell theory	Must Know	A	C2		
		• Define homeostasis	Must Know	A	C1		
		• Describe homeostatic mechanisms of the major functional systems.	Must Know	A	C1		
M1-FM-P-003	Concept of Body Fluid and Internal Environment	• Describe distribution of total body water	Must Know	A	C1	LGIS SGD	SAQ MCQ VIVA
		• Enlist the proportion of intra cellular and extra cellular fluids.	Must Know	A	C1		
		• Differentiate between ECF & ICF	Must Know	A	C2		
		• Recall Physical characteristics of normal ECF constituents	Must Know	A	C1		
		• Understand the concept of internal environment (which student can differentiate for unicellular and multi cellular organisms.)	Must Know	A	C2		
M1-FM-P-004	Homeostatic Control System I	• Describe the characteristic of control system of the body.	Must Know	A	C1	LGIS SGD	SAQ MCQ VIVA
		• Enlist four control mechanisms of body	Must Know	A	C1		
		• Understand the mechanism of positive feedback, negative feedback, feed forward control and adaptive control with examples.	Must Know	A	C2		
M1-FM-P-005	Homeostatic Control System II	• Recall control mechanisms	Should Know	B	C1	LGIS SGD	SAQ MCQ VIVA
		• Give examples			C1		
		• Compare and contrast feed forward and adaptive mechanisms	Nice to Know	C	C2		
		• Define gain of control system	Must Know	A	C1		
		• Comprehend gain of the control system	Must Know	A	C2		

		• Calculate gain of the feedback system and understand the significance of sign in the formula	Nice To know	C	C3		
M1-FM-P-006	Cellular organelles and cell functions	• Describe cytoskeleton & cell locomotion	Must Know	A	C1	LGIS Group presentations	SAQ MCQ VIVA
		• Discuss functions of cilia and amoeboid movement	Must Know	A	C2		
		• Describe the mechanism of ATP generation	Should Know	B	C1		
		• Enlist three major processes of ATP consumption in the body	Should Know	B	C1		
		• Understand cell ingestion and other independent roles of cell	Should know	B	C2		
M1-FM-P-007	Cell Membrane and Cell Organelles, I & II	• Enlist functions of ER, golgi apparatus, lysosome & perxosome, mitochondria	Must know	A	C1	LGIS SGD Group presentations	SAQ MCQ VIVA
		• Compare and contrast RER & SER, lysosomes & peroxisomes	Must know	A	C2		
		• Understand Docking mechanism	Should know	B	C2		
		• Discuss physiological importance of mitochondria & ATP	Must Know	A	C2		
		• Describe the structure of cell membrane: fluid mosaic model	Must Know	A	C1		
		• Enlist functions of cell membrane	Must Know	A	C1		
		• Enlist membrane bound and non-membrane bound organelles	Nice to know	C	C1		
		• Differentiate between cytoplasm and cytosol	Nice to know	C	C2		
M1-FM-P-008	Cell membrane Ion channels, Transport across the cell membrane: Diffusion	• Enlist various types of ion channels	Must Know	A	C1	LGIS SGD	SAQ MCQ VIVA
		• Enumerate modes of transport mechanism across the cell membrane	Must know	A	C1		
		• Define and discuss factors affecting diffusion	Should know	B	C1		
M1-FM-P-009	Transport across cell membrane: Osmosis	• Recall transport mechanism across the cell membrane with special emphasis on osmosis and osmotic pressure	Should Know	B	C1	LGIS SGD	SAQ MCQ VIVA
		• Recall factors affecting osmosis	Should know	B	C1		
		• Comprehend the concept of moles and osmoles	Nice to know	C	C2		
		• Recall osmolarity of body fluids	Should know	B	C1		
		• Discuss tonicity	Should know	B	C2		
		• Comprehend concept of isotonic, hypertonic and hypotonic	Must Know	A	C2		
M1-FM-P-0010	Transport across cell membrane: Active transport I & II	• Define active transport	Must Know	A	C1	LGIS SGD	SAQ MCQ VIVA
		• Classify active transport	Must know	A	C2		
		• Comprehend various types of active transport with examples with special emphasis on Na-K pump	Must know	A	C2		

M1-FM-P-0011	Structure of nucleus and ribosomes, Cell Division	• Describe structure of nucleus and ribosome	Nice to know	C	C1	LGIS PBL	SAQ MCQs VIVA
		• Discuss vaults	Nice to know	C	C2		
		• Understand basic concepts about DNA and	Should know	B	C2		
		• RNA			C1		
		• Recall various types of RNA and their functions	Must know	A	C1		
		• Enlist and Draw steps of mitosis and meiosis	Nice to know	C	C2		
		• Comprehend role of different parts of chain of DNA as genes like TATA box	Nice to know	C			
M1-FM-P-0012	Genetics Transcription & Translation	• Define & Explain Genetics, Transcription & Translation	Must Know	A		LGIS PBL	SAQ MCQs VIVA
		• Describe Genetic control of protein synthesis	Must Know	A			
		• Differentiate between apoptosis & Necrosis	Should know	B			
	Cellular control mechanism, Cell cycle, Programmed cell death	• Describe different cellular control mechanisms regarding gene regulation	Should know	B	C1	LGIS PBL	SAQ MCQs VIVA
		• Explain Cell differentiation, apoptosis and cellular changes in cancer	Should know	B	C2		
M1-FM-P-0013	Intracellular communication and cell junctions	• Describe the structure of various intracellular connections	Must know	A	C1	LGIS SGD	SAQ MCQ VIVA
		• Give the physiological importance of cell junctions	Must know	A	C1		
M1-FM-P-0014	Signal Transduction	• Describe the various 2nd messenger systems	Must know	A	C1	LGIS	SAQ MCQ VIVA
		• Discuss physiological significance	Must Know	A	C2		

(Knowledge)

Physiology Small Group Discussion (SGDs)

Code	Topic	Learning Objectives	Calgary Gauge	Grade	Learning Domain	Teaching Strategy	Assessment Tools
M1-FM-P-0015	Cell and homeostasis	Understand functional organization of human body	Must Know	A	C2	SGD	MCQ SAQ VIVA
		Discuss homeostasis/control systems of the body	Must know	A	C2		
M1-FM-P-0016	Cell cytoskeleton and locomotion and cell functions	Discuss the functions of cell	Must Know	A	C2	SGD	MCQ SAQ VIVA
		Describe cell cytoskelation	Must know	A	C1		
M1-FM-P-0017	Transport across cell membrane	Describe the structure of cell membrane	Muist know	A	C1	SGD	MCQ SAQ VIVA
		Enlist various ion channels	Must know	A	C1		
		Discuss transport mechanism across the cell membrane with special emphasis on diffusion and osmosis	Must know	A	C2		
		Explain the types of active transport	Must know	A	C2		
M1-FM-P-0018	Intracellular communication and cell junction, signal transduction	Describe the structure and function of various intracellular connections Discuss second messanger system	Must know	A	C1 C2	SGD	MCQ SAQ VIVA

(Knowledge)
Physiology Self Directed Learning (SDL)

Code	Topics Of SDL	Learning Objectives	Learning Resources
M1-FM-P-0019	Concept of body fluids & internal environment.	• Introduction • Concept of extracellular and intracellular fluid • Homeostasis • Examples of control system	❖ Ganong's Review of Medical Physiology.25THEdition, General principles and Energy productionin Medical Physiology (chapter 01, Page 03) ❖ Human Physiology by Dee Unglaub Silver thorn. 8THEdition.Introduction to physiology, controlsystems and homeostasis, chapter no. 1, page no. 40.49 ❖ Physiology by Linda S. Costanzo 6th Edition. Cellular physiology, chapter 01. Page 1

			❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Introduction to Physiology.(Section 01, Chapter1, page 03).
M1-FM-P-0020	Cell membrane & classification ofcell organelles	• Structure of cell membrane • Cell cytoskeleton • Cytoplasm and various organelles • Golgi Apparatus and its function • Lysosomes and peroxisomes • Secretory vesicles	❖ Ganong's Review of Medical Physiology.25THEditions, Overview of Cellular Physiology inMedical Physiology (chapter 02, Page33) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Compartmentation, chapter 3, page95 ❖ Physiological Basis of Medical Practice by Best & Taylor's.13thEdition. The cell (chapter 01,section 1 Page 03, 18) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Introduction to Physiology.(Section 1, chapter 03, page 31)
M1-FM-P-0021	Intracellular communication and celljunction	• Receptors and its types • Cellular signaling and various mechanisms • Signal transduction • Hormone receptors and their activation • Second messenger mechanisms	❖ Ganong's Review of Medical Physiology.25THEdition., Overview of Cellular Physiology inMedical Physiology (chapter 02, Page 33-44) ❖ Human Physiology by Dee Unglaub Silver thorn. 8THEdition. Compartmentation, chapter 3, page109 ❖ Physiology by Linda S. Costanzo 6th Edition. Gastrointestinal Physiology ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th EditionThe cell (chapter 01, Page14) ❖ Textbook of Medical Physiology by Guyton & Hall.14thEdition. Introduction to Endocrinology.(Section 14, Page 920)
M1-FM-P-0022	Receptors and signal transduction	• Receptors and its types • Cellular signaling and various mechanisms • Signal transduction • Hormone receptors and their activation • Second messenger mechanisms	❖ Ganong's Review of Medical Physiology.25THEditions, Overview of Cellular Physiology inMedical Physiology (Chapter 02, Page 41) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Communication, chapter 6, page204 ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Section 7, principles ofhormone action and endocrine control (Chapter 50, Page817) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Introduction to Physiology.(Section 1, Chapter 02, page 13)

M1-FM-P-0023	Homeostasis Control System- I (Negative Feedback System, Conceptof Error and Gain)	• Control systems of body • Negative and positive feedback mechanism and their examples • Apoptosis and necrosis	❖ Ganong's Review of Medical Physiology.25TH Edition, Overview of Cellular Physiology inMedical Physiology (Chapter 02, Page 62) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Introduction to physiology, chapterno. 1, page no. 45 ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Introduction to Physiology.(Section 1, Chapter 1, page 04,07) (Chapter 03, Page 45)
M1-FM-P 0024	Genetics, Transcriptionand Translation	• Building blocks of DNA • Genetic code • Process of transcription and translation • Types of RNA • Cell division	❖ Ganong's Review of Medical Physiology.25TH Edition, General principles and Energy productionin Medical Physiology (Chapter 01, Page 63) ❖ Textbook of Medical Physiology by Guyton & Hall.14thEdition. ❖ (Section 01, Chapter03, Page31)
M1-FM-P-0025	Structure of Nucleus, Ribosomes and Cell Division	• Structure of Nucleus • Ribosomes • Mitosis & Overview of cancer	❖ Ganong's Review of Medical Physiology.25TH Edition, Overview of Cellular Physiology inMedical Physiology (Chapter 02, Page42) ❖ Human Physiology by Dee Unglaub Silver thorn. 8THEdition. Compartmentation, chapter 3, page100 ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. the cell (Chapter 01,Page7,) ❖ Textbook of Medical Physiology by Guyton & Hall.14thEdition. (Section 01, Chapter02, Page 19)
M1-FM-P-0026	Transport across cell membrane andits various types (osmosis, diffusion, primary and secondary active transport	• Types of transport across cell membrane • Diffusion and osmosis • Concept of gating of channels • Primary active transport • Secondary active transport	❖ Ganong's Review of Medical Physiology.25TH Edition, Overview of Cellular Physiology inMedical Physiology (Chapter 02, Page 45) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Membrane dynamics chapter 5,page 160 ❖ Physiology by Linda S. Costanzo 6th Edition. Cellular physiology, chapter 1, page 5 ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Properties and functionsof cell membrane, chapter 2, page 18 ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Membrane Physiology. (Section02, Chapter04, Page51)

(Psychomotor)

Physiology Practicals Skill Laboratory (SKL)

Code	Topic	Learning Objectives	Calgary Gauge	Grade	Learning Domain	Teaching Strategy	Assessment Tool
M1-FM-P-0027	Introduction to Microscope	• Identification of different parts especially focusing lenses and their uses	Must know	A	C1	Skill Lab	OSPE
		• Focusing technique of different blood slides e.g Neubauer's chamber TLC & DLC slides	Should know	B	P		
M1-FM-P-0028	Introduction to Wintrobe & Westergen tube	• Identify the wintrobe and westergen tubes	Must know	A	C1	Skill Lab	OSPE
		• Must Know the differences between two tubes and uses in different methods	Must know	A	P		
M1-FM-P-0029	Apparatus identification (Introduction to Neubauer's chamber, Red Blood Cell (RBC) pipettes& White Blood Cell (WBC) pipette	• Complete study of Neubauer's slide, calculation of volumes of corner squares and central squares	Must know	A	P	Skill Lab	OSPE
		• Important differentiating points between WBC & RBC's pipettes	Must know	A	C1		
		• How to dilute the two pipettes	Should know	B	P		
		• Must Know the composition of diluting fluids	Must kniow	A	C1		
M1-FM-P-0030	Apparatus identification (Introduction to centrifuge machine)	• Be aware with the electrical connections of centrifuge machine and to control different speeds	Nice to know	C	P, A	Skill Lab	OSPE

Physiology Syllabus of Learning Management System (LMS)

Code	Topics	Learning Objectives	Calgary Model
M1-FM-P-0031	Concept of body fluids & internal environment.	Introduction Concept of extracellular and intracellular fluid Homeostasis Examples of control system	Must Know
M1-FM-P-0032	Cell membrane & classification of cell organelles	Structure of cell membrane Cell cytoskeleton Cytoplasm and various organelles Golgi Apparatus and its function Lysosomes and peroxisomes Secretory vesicles	Must Know
M1-FM-P-0033	Intracellular communication and cell junction	Receptors and its types Cellular signaling and various mechanisms Signal transduction Hormone receptors and their activation Second messenger mechanisms	Nice to know
M1-FM-P-0034	Receptors and signal transduction	Receptors and its types Cellular signaling and various mechanisms Signal transduction Hormone receptors and their activation Second messenger mechanisms	Nice to know
M1-FM-P-0035	Homeostasis Control System-I(Negative Feedback System, Concept of Error and Gain)	Control systems of body Negative and positive feedback mechanism and their examples Apoptosis and necrosis	Must Know
M1-FM-P-0036	Genetics, Transcription and Translation	Building blocks of DNA Genetic code Process of transcription and translation Types of RNA Cell division	Must Know
M1-FM-P-0037	Structure of Nucleus, Ribosomes and Cell Division	Structure of Nucleus Ribosomes Mitosis & Overview of cancer	Must Know

M1-FM-P-0038	Transport across cell membrane and its various types (osmosis, diffusion, primary and secondary active transport	Types of transport across cell membrane Diffusion and osmosis Concept of gating of channels Primary active transport Secondary active transport	Must Know / Should know

(Knowledge)

Biochemistry Large Group Interactive Session (LGIS)

Theory						
Code	**Topic**	**Learning Objectives At the End Of Lecture Students Should Be Able To**	**Calgary Gauge**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
Cell organelles						
M1-FM-B-001	Cell and cell organelles	• Explain composition of normal cell • Describe methods to separate different organelles of cell • Describe structure, functions and marker enzymes of ER & Golgi apparatus • Describe structure, functions and marker enzymes of lysosome, peroxisome & ribosome • Describe structure, functions and marker enzymes of mitochondria and Nucleus • Illustrate the clinical conditions and congenital defects of cell organelles	Should Know Must Know Should Know Should Know Should Know Must Know	C2 C2 C2 C2 C2 C3	LGIS	MCQs, SAQs & Viva
Cell membrane and transport across cell membrane						
M1-FM-B-002	Cell membrane	• Explain composition of cell membrane • Understand fluid mosaic model • Describe functions performed by each component	Should Know Should Know Should Know	C2 C2 C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-003	Functions of cell membranes	• Discuss functions & importance of cell membrane	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-004	Transport across cell membrane	• Explain transport of various substances by active and passive transport, diffusion, phagocytosis, endocytosis and exocytosis • Correlate the clinical disorders with defective transport across cell membrane	Should Know Must Know	C2 C3	LGIS	MCQs, SAQs & Viva
Physicochemical properties of cell						
M1-FM-B-005	Osmosis, osmotic pressure and oncotic pressure	• Define osmosis and osmotic pressure. • Discuss biochemical application of osmotic and oncotic pressure and methods to measure them. • Correlate oncotic pressure with clinical scenarios	Should Know Should Know Should Know	C1 C2 C3	LGIS	MCQs, SAQs & Viva

M1-FM-B-006	Phenomenon of viscosity, surface tension, emulsification and adsorption	• Define phenomenon of viscosity, surface tension, emulsification and adsorption • Explain Biochemical applications and methods to measure them	Should Know Should Know	C1 C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-007	Donnan equilibrium, adsorption and ion exchange resins	• Define Donnan equilibrium, adsorption and ion exchange resins. • Describe their effects on tissue fluids and biochemical importance	Should Know Should Know	C1 C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-008	Water and pH	• Define pH, Pka, body buffer • Discuss water distribution in the body • Understand dehydration and overhydration	Should Know Should Know Should Know	C1 C2 C3	LGIS	MCQs, SAQs & Viva
Enzymes						
M1-FM-B-009	Enzymes Introduction	• Define Enzymes. • Explain general functions of enzymes. • Differentiate between coenzyme and cofactors	Should Know Should Know Must Know	C1 C2 C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0010	Mechanism of enzyme action	• Describe different mechanisms of enzyme action.	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0011	Classification of enzymes	• Discuss different classes of Enzymes	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0012	Properties of Enzymes	• Elaborate the Properties of Enzymes such as specificity for substrate and stereo specificity.	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0013	Factors affecting Enzyme action	• Discuss different factors which increase or decrease the activity of enzymes	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0014	Enzyme inhibitors	• Describe enzyme inhibitors and how the activity of the regulatory enzymes can be modulated for benefit of body	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0015	Enzyme Regulation	• Explain enzyme regulation	Must Know	C2	LGIS	MCQs, SAQs & Viva

M1-FM-B-0016	Diagnostic role of Enzymes	• Interpret the role of measuring activity of different enzymes in the diagnosis and prognosis of different diseases • Interpret the role of Enzyme as medicine and their effects on body.	Must Know Nice to know	C3 C3	LGIS	MCQs, SAQs & Viva
Genetics & Cancer						
M1-FM-B-0017	Nucleic acids chemistry	• Explain structure and biological importance of DNA, types of DNA • Differentiate between DNA &RNA • Explain structure, types and functions of RNA	Should Know Should Know Should Know	C2 C2 C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0018	Replication	• Describe mechanism of replication of prokaryotes & Eukaryotes	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0019	Transcription	• Describe mechanism of Transcription of prokaryotes & Eukaryotes	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0020	Translation	• Discuss genetic code • Describe mechanism of Translation in prokaryotes & Eukaryotes • Illustrate mechanism of action of antibiotics at different stages of translation	Must Know Should Know Should Know	C2 C2 C3	LGIS	MCQs, SAQs & Viva
M1-FM-B-0021	DNA damage & Repair	• Describe mechanism of DNA damage & Repair • Apply knowledge of DNA repair mechanisms in related clinical cases	Must Know Nice to Know	C2 C3	LGIS	MCQs, SAQs & Viva
M1-FM-B-0022	Mutations	• Describe different types of mutations with examples	Should Know	C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0023	PCR and Recombinant DNA technology	• Define PCR • Explain mechanism and indications of PCR • Discuss Recombinant DNA technology	Should Know Should Know Must Know	C1 C2 C2	LGIS	MCQs, SAQs & Viva
M1-FM-B-0024	Cancer	• Explain biochemical basis of cancer	Must Know	C2	LGIS	MCQs, SAQs & Viva

(Knowledge)
Biochemistry Small Group Discussion (SGDs)

Theory						
Code	**Topic**	**Learning Objectives**	**Calgary Gauge**	**Learning Domain**	**Teaching Strategy**	**Assessment Tools**
M1-FM-B-0025	Cell and Cell Membrane	• Explain Composition of Normal Cell & Cell Organelles	Should Know	C2	SGD	MCQ SAQ VIVA
		• Describe Composition of Cell Membrane • Understand Fluid Mosaic Model	Should Know	C2		
M1-FM-B-0026	Physicochemical Aspects of Cell	• Define osmosis and osmotic pressure. • Discuss biochemical application of osmotic and oncotic pressure and methods to measure them. • Correlate oncotic pressure with clinical scenarios	Should Know Should Know Nice to Know	C1 C2 C3	SGD	MCQ SAQ VIVA
		• Define phenomenon of viscosity, surface tension. • Explain Biochemical applications and methods to measure them.	Should Know Should Know	C1 C2		
		• Define Donnan equilibrium, adsorption and ion exchange resins. • Describe their effects on tissue fluids and biochemical importance	Should Know Should Know	C1 C2	SGD	MCQ SAQ VIVA

(Knowledge)
Biochemistry Self Directed Learning (SDL)

Theory			
Code	**Topics Of SDL**	**Learning Objectives**	**Learning Resources**
M1-FM-B-0027	Cell and cell organelles	• Explain composition of normal cell • Describe methods to separate different organelles of cell • Describe structure, functions and marker enzymes of ER & Golgi apparatus	❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (chapter 1, page 3)

		• Describe structure, functions and marker enzymes of lysosome, peroxisome & ribosome • Describe structure, functions and marker enzymes of mitochondria and Nucleus • Illustrate the clinical conditions and congenital defects of cell organelles	
M1-FM-B-0028	Cell membrane Transport across cell membrane	• Explain composition of cell membrane • Understand fluid mosaic model • Describe functions performed by each component • Explain transport of various substances by active and passive transport, diffusion, phagocytosis, endocytosis and exocytosis • Correlate the clinical disorders with defective transport across cell membrane	❖ Harper's illustrated biochemistry 32nd edition (chapter 40 page - 460) ○ ❖ Harper's illustrated biochemistry 32nd edition (Chapter 40 page 467)
M1-FM-B-0029	Physichemical Aspects Osmosis, osmotic pressure and oncotic pressure	• Define osmosis and osmotic pressure. • Discuss biochemical application of osmotic and oncotic pressure and methods to measure them. • Correlate oncotic pressure with clinical scenarios	❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 02 page 46)
M1-FM-B-0030	Phenomenon of viscosity, surface tension.	• Define phenomenon of viscosity, surface tension. • Explain Biochemical applications and methods to measure them.	❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 02 page 52, 55)
M1-FM-B-0031	Nucleic Acid Chemistry	• Define Donnan equilibrium, adsorption and ion exchange resins. • Describe their effects on tissue fluids and biochemical importance	○ ❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 02 page 50)
M1-FM-B-0032	Cancer	• • Explain biochemical basis of cancer	❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 6 page 168)
M1-FM-B-0033	Diagnostics Role of Enzyme	• Interpret the role of Enzyme in diagnosis and their effects on body.	❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 06 page 169) ❖ Lippincott Illustrated reviews of biochemistry 8th edition (Chapter 05 page 69)

M1-FM-B-0034	Transcription	• Describe mechanism of Transcription of prokaryotes & Eukaryotes	❖ Lippincott Illustrated reviews of biochemistry 8th edition (Chapter 30 page 459)

(Psychomotor)
Biochemistry Practicals Skill Laboratory (SKL)

Theory						
Code	**Topic**	**Learning Objectives At the End of Practical Students Should Be Able To**	**Calgary Gauge**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-B-0035	Introduction to Laboratory precautions and glassware	• Understand the use of laboratory glassware • State precautions while working in the laboratory	Should Know Should Know	P	Skill Lab	OSPE
M1-FM-B-0036	Introduction of Laboratory equipment's	• Describe parts and working of different laboratory equipments	Should Know	P	Skill Lab	OSPE
M1-FM-B-0037	Physic chemical principals: emulsification and surface tension	• Demonstrate mechanism of surface tension and emulsification	Should Know	P	Skill Lab	OSPE
M1-FM-B-0038	Physic chemical principals: tonicity and adsorption	• Demonstrate effects of solutions of different tonicity on red cells (isotonic, hypotonic and hypertonic) • Illustrate process of adsorption.	Should Know Should Know	P	Skill Lab	OSPE

Biochemistry LGIS Syllabus of Learning Management System (LMS)

Theory				
Code	**Topic**	**Learning Objectives At the End of One Hour the Lecture the Student Should Be Able To**	**Learning Domain**	**Learning Resources**

M1-FM-B-0039	Cell and cell organelles	• Explain composition of normal cell • Describe methods to separate different organelles of cell • Describe structure, functions and marker enzymes of ER & Golgi apparatus • Describe structure, functions and marker enzymes of lysosome, peroxisome & ribosome • Describe structure, functions and marker enzymes of mitochondria and Nucleus. • Illustrate the clinical conditions and congenital defects of cell organelles	C2 C2 C2 C2 C2 C3	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (chapter 1, page 3)
M1-FM-B-0040	Cell membrane	• Explain composition of cell membrane • Understand fluid mosaic model • Describe functions performed by each component	C2 C2 C2	Harper's illustrated biochemistry 32nd edition (chapter 40 page - 460)
M1-FM-B-0041	Functions of cell membranes	• Discuss functions & importance of cell membrane	C2	
M1-FM-B-0042	Transport across cell membrane	• Explain transport of various substances by active and passive transport, diffusion, phagocytosis, endocytosis and exocytosis • Correlate the clinical disorders with defective transport across cell membrane	C2 C3	Harper's illustrated biochemistry 32nd edition (chapter 40 page - 467)
M1-FM-B-0043	Osmosis, osmotic pressure and oncotic pressure	• Define osmosis and osmotic pressure. • Discuss biochemical application of osmotic and oncotic pressure and methods to measure them. • Correlate oncotic pressure with clinical scenarios	C1 C2 C3	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 02 page 46)
M1-FM-B-0044	Phenomenon of viscosity, surface tension, emulsification and adsorption	• Define phenomenon of viscosity, surface tension, emulsification and adsorption • Explain Biochemical applications and methods to measure them	C1 C2	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 02 page 52, 55)
M1-FM-B-0045	Donnan equilibrium, adsorption and ion exchange resins	• Define Donnan equilibrium, adsorption and ion exchange resins. • Describe their effects on tissue fluids and biochemical importance	C1 C2	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition
M1-FM-B-0046	Water and pH	• Define pH, Pka, body buffer • Discuss water distribution in the body • Understand dehydration and overhydration	C1 C2 C3	

M1-FM-B-0047	Enzymes Introduction	• Define Enzymes. • Explain general functions of enzymes. • Differentiate between coenzyme and cofactors	C1 C2 C2	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 06 page 169) Lippincott Illustrated reviews of biochemistry 8th edition (Chapter 05 page 69)
M1-FM-B-0048	Mechanism of enzyme action	• Describe different mechanisms of enzyme action.	C2	
M1-FM-B-0049	Classification of enzymes	• Discuss different classes of Enzymes	C2	
M1-FM-B-0050	Properties of Enzymes	• Elaborate the Properties of Enzymes such as specificity for substrate and stereo specificity.	C2	
M1-FM-B-0051	Factors affecting Enzyme action	• Discuss different factors which increase or decrease the activity of enzymes	C2	
M1-FM-B-0052	Enzyme inhibitors	• Describe enzyme inhibitors and how the activity of the regulatory enzymes can be modulated for benefit of body	C2	
M1-FM-B-0053	Enzyme Regulation	• Explain enzyme regulation	C2	
M1-FM-B-0054	Diagnostic role of Enzymes	• Interpret the role of measuring activity of different enzymes in the diagnosis and prognosis of different diseases • Interpret the role of Enzyme as medicine and their effects on body.	C3 C3	
M1-FM-B-0055	Nucleic acids chemistry	• Explain structure and biological importance of DNA, types of DNA • Differentiate between DNA &RNA • Explain structure, types and functions of RNA	C2 C2 C2	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 02 page 50)
M1-FM-B-0056	Replication	• Describe mechanism of replication of prokaryotes & Eukaryotes	C2	Lippincott Illustrated reviews of biochemistry 8th edition
M1-FM-B-0057	Transcription	• Describe mechanism of Transcription of prokaryotes & Eukaryotes	C2	
M1-FM-B-0058	Translation	• Discuss genetic code • Describe mechanism of Translation in prokaryotes & Eukaryotes • Illustrate mechanism of action of antibiotics at different stages of translation	C2 C2 C3	
M1-FM-B-0059	DNA damage & Repair	• Describe mechanism of DNA damage & Repair • Apply knowledge of DNA repair mechanisms in related clinical cases	C2 C3	
M1-FM-B-0060	Mutations	• Describe different types of mutations with examples	C2	

M1-FM-B-0061	PCR and Recombinant DNA technology	• Define PCR • Explain mechanism and indications of PCR • Discuss Recombinant DNA technology	C1 C2 C2	
M1-FM-B-0062	Cancer	• Explain biochemical basis of cancer	C2	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 6 page 168)

Bichemistry SGDs Syllabus of Learning Management System (LMS)

Code	Topic	Learning Objectives At the End of One Hour the Lecture the Student Should Be Able To	Learning Domain	Learning Resources
M1-FM-B-0063	Cell and Cell Membrane	Explain Composition of Normal Cell & Cell Organelles	C2	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (chapter 1, page 3)
		Describe Composition of Cell Membrane Understand Fluid Mosaic Model	C2	
M1-FM-B-0064	Physicochemical Aspects of Cell	Define osmosis and osmotic pressure. Discuss biochemical application of osmotic and oncotic pressure and methods to measure them. Correlate oncotic pressure with clinical scenarios	C1 C2 C3	Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (chapter 1)
		Define phenomenon of viscosity, surface tension. Explain Biochemical applications and methods to measure them.	C1 C2	
		Define Donnan equilibrium, adsorption and ion exchange resins. Describe their effects on tissue fluids and biochemical importance	C1 C2	

SECTION - III

Basic and Clinical Sciences (Vertical Integration)

Content

- **Case Base Learning (CBLs)**
- **Vertically Integrated LGIS**

Case Based Learning (CBL)

Subject	Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain
Anatomy	• Fracture of clavicle	Apply basic knowledge of subject to study clinical case.	C3
	• Winging of scapula due to long thoracic nerve injury	Apply basic knowledge of subject to study clinical case.	C3
Physiology	• Down's syndrome	Apply basic knowledge of subject to study clinical case.	C3
	• Smoker's cough	Apply basic knowledge of subject to study clinical case.	C3
Biochemistry	• Enzymes	Apply basic knowledge of subject to study clinical case.	C3
	• Genetics/PCR	Apply basic knowledge of subject to study clinical case.	C3

Large Group Interactive Sessions (LGIS)

Pathology

Theory					
Code	Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tools
M1-FM-VI(Path)-001	Introduction to Pathology	• Define the following terms: • Etiology • Pathogenesis • Morphology	C1	LGIS SGD	MCQ
M1-FM-VI(Path)-002	Cellular Responses to Injury	• Discuss cellular responses to injury for: • Reversible injury • Adaptation • Irreversible injury • Cell death	C2	LGIS SGD	MCQ
		• Describe, the morphologic changes in cell injury culminating in necrosis and apoptosis	C2		
M1-FM-VI(Path)-003	Intracellular Accumulations	• Describe types of intracellular accumulations with clinical examples: • Lipids/ fat	C2	LGIS SGD	MCQ

		• Protein • Glycogen • Pigments			
		• Explain mechanism of intracellular accumulations.	C2		
		• Enlist causes of fatty change	C1		
		• Describe the pathogenesis of fatty liver	C1		
M1-FM-VI(Path)-004	Pigments	• Classify pigments	C2	LGIS SGD	MCQ
		• Explain the mechanism of pigment production and deposition in various clinical settings	C2		
		• Describe the morphological features (gross/ microscopic) with deposition of following pigments: Lipofuscin, Melani, Hemosiderin, Bilirubin, Anthracosis	C1		
M1-FM-VI(Path)-005	Free Radicals/ Reactive Oxygen Species (Ros). Oxidative Stress	1. Define ROS/free radicals	C1	LGIS SGD	MCQ
		2. Enlist oxygen derived free radicals	C1		
		3. Describe mechanism of generation of free radicals	C2		
		4. Describe mechanism of removal of free radicals(antioxidants)	C2		
		5. Describe the pathologic effects of free radicals	C2		
M1-FM-VI(Path)-006	Irreversible Injury. Necrosis	• Define necrosis	C1	LGIS SGD	MCQ
		• Enlist patterns/types with clinical examples	C1		
		• Describe morphological changes (gross and microscopic) in necrosis	C2		
M1-FM-VI(Path)-007	Apoptosis (Irreversible Injury)	• Define apoptosis	C1	LGIS SGD	MCQ
		• Enlist clinical examples of apoptosis in • physiologic conditions	C1		
		• Enlist clinical examples of apoptosis in pathologic conditions	C1		
		• Describe mechanism of apoptosis	C2		
		• Tabulate differences between necrosis and apoptosis	C1		
M1-FM-VI(Path)-008	Genetic Disorders	• Classify human genetic disorders	C1	LGIS SGD PBL	MCQ
		• Define mutation	C1		
		Define the following inheritance pattern: • Autosomal dominant • Autosomal recessive	C1		

		• X-linked			
		• Describe diseases associated with consanguineous marriages	C2		

Pharmacology

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-VI(Pharm)-001	Introduction to Pharmacology	• Define pharmacology	C1	LGIS	MCQ
		• Discuss main branches of Pharmacology	C2		
		• Define drug according to WHO	C1		
		• Describe drug nomenclature	C1		
		• Cite important drug references	C1		
		• Describe the sources of drug	C2		
M1-FM-VI(Pharm)-002	Pharmacokinetic processes	• Identify the four key processes of pharmacokinetics	C1	LGIS	MCQ
		• Define absorption, distribution, metabolism and excretion of drug	C1		
		• Recognize the clinical importance of these pharmacokinetic processes	C1		
		• Briefly discuss the factors affecting these processes	C2		
M1-FM-VI(Pharm)-003	Receptors and signal transduction processes	• Define receptors and ligand	C1	LGIS	MCQ
		• Classify different types of receptors	C2		
		• Explain the mechanism of signal transduction	C2		
		• Describe the concept of receptor affinity and specificity	C2		
		• Define the properties of agonists, antagonists and inverse agonist	C1		

Community Medicine

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-VI(CM)-001	Introduction Community Medicine & Research Model of RMU	• Define community medicine • Define preventive medicine • Differentiate public health and community medicine • Understand IUGRC implementation in RMU	C1 C1 C2 C1	LGIS	MCQs
M1-FM-VI(CM)-002	Immunization & Vaccination	• Understand immunizing agents and vaccine • Differentiate between functions of different types of immunoglobins • Understand the concepts of cold chain • Describe common minor vaccine reactions • Understand and memorize EPI program	C1 C1 C2 C1 C1	LGIS	MCQs
M1-FM-VI(CM)-003	Health Determinants & Indicators	• Explain dimensions and determinants of health and their role in achieving positive health • Discuss concept of health and wellbeing • Describe the importance of health indicators • Classify health indicators • Calculate Morbidity and Mortality • Describe Disability indicators • Compare indicators among countries	C1 C2 C1 C1 C3 C2 C2	LGIS	MCQs
M1-FM-VI(CM)-004	Lifestyle Medicine	• Understand the Role of Lifestyle Factors in Health • Assess and Diagnose Lifestyle-related Health Risks • Implement Lifestyle Interventions for Disease Prevention and Management • Understand the Multidisciplinary Approach in Lifestyle Medicine	C1 C2 C3 C2	LGIS	MCQs

Medicine

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-VI(M)-001	Introduction to Medicine and History of Medicine	• Understand the scope, principles, and practice of medicine in the context of healthcare.	C1	LGIS	MCQs
		• Explore the history of medicine, focusing on key milestones and their influence on modern medical practices.	C2		
M1-FM-VI(M)-002	Chromosomal Abrassions	• Understand the concept of chromosomal abrasions and their causes.	C2	LGIS	MCQs
		• Identify the types of chromosomal abrasions and their impact on genetic material.			

Surgery

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-VI(S)-001	History taking & its importance	• Enlist the components of a detail history	C1	LGIS	MCQs
		• Describe Importance of each component	C2		
M1-FM-VI(S)-002	CA Breast	• Understand the basic concepts of breast cancer, including risk factors and pathophysiology.	C2	LGIS	MCQs
		• Describe the clinical presentation, diagnostic methods, and staging of breast cancer.	C3		
		• Gain insight into the treatment options and preventive measures for breast cancer.	C3		

Obstetrics & Gynaecology

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-VI(OBG)-001	Infertility	• Understand the basic definitions and types of infertility in both males and females.	C2	LGIS	MCQs

		• Enlist the common causes and risk factors associated with infertility.	C2		
		• Gain insight into the diagnostic methods and general management approaches for infertility.	C1		
M1-FM-VI(OBG)-002	Invitro Fertilization	• Understand the basic principles and process of in vitro fertilization (IVF).	C2	LGIS	MCQs
		• Discribe the indications, procedure steps, and success factors involved in IVF.	C2		
		• Gain an awareness of the ethical considerations and potential complications associated with IVF.	C3		

Peadiatrics

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-VI(Peads)-001	Medical Genetics & Dysmorphology	Describe the chromosomal abnormality and clinical features of trisomy 21	C2	LGIS	MCQs

List of Foundation Module - I Vertical Integration Lectures

Date/Day	Department	Time	Topic of Lectures	Teachers Name & Contact #
18-02-25 Tuesday	Pharmacology	12:20 PM – 01: 00 PM	Introduction to Pharmacology	Dr Arsheen Arshad +92 335 5425558
19-02-25 Wednesday	Pathology	10:00 AM to 11:00 AM	Introduction to Pathology	Dr Rabbiya Khaalid 0333 5608074 Dr Sara Rafi +92 345 4181333
20-02-25 Thursday	Community Medicine	01.00PM – 02:00 PM	Immunization and Vaccines	Dr Farah Pervaiz 0300-5146616 Dr Asif Maqsood 0331-9524329
21-02-25 Friday	Community Medicine	08.00 AM - 09.00 AM	Health determinants and indicators	Dr Farah Pervaiz 0300-5146616 Dr Asif Maqsood 0331-9524329
	Pharmacology	11:00AM to 12:00PM	Pharmacokinetic processes	Dr. Saba Sarfraz +92 333 6191746
22-02-25 Saturday	Pathology	10:00 AM - 11:00 AM	Cellular response to injury	Dr Rabbiya Khaalid 0333 5608074 Dr Sara Rafi +92 345 4181333
	Pharmacology	11:00AM - 12:00PM	Receptors and signal transduction processes	Dr. Memuna Kanwal +92 333 0430482
	Community Medicine	01:00AM - 02:00 PM	Lifestyle Medicine	Dr Farah Pervaiz 0300-5146616 Dr Asif Maqsood 0331-9524329
26-02-25 Wednesday	Surgery	11:00 AM – 11:50 PM	History taking and its importance	Dr. Asad Amir 0345 5533704 Dr. Hira 0332 2988981
27-02-24 Thursday	Community Medicine	08:00 AM – 9:00 AM	Health education and communication	Dr Farah Pervaiz Dr Asif Maqsood

03-03-25 Monday	Medicine	10:30AM - 11:10AM	Intro to medicine and history of medicine	Dr. Sualeha Imran 0336-5270575 Dr. Ayesha Hijab 0331-2291113
05-03-25 Wednesday	Pathology	09:20AM - 10:10AM	Pigments	Dr Sara Rafi +92 345 4181333
06-03-25 Thursday	Pediatrics	08:00AM - 9:20AM	Medical Genetics and Dysmorphology	Dr. Muhammad Asim +92 321 5226631
10-03-25 Monday	Pathology	09:20AM - 10:10AM	Free radicals /reactive oxygen species	Dr Rabbiya Khaalid 0333 5608074 Dr Sara Rafi +92 345 4181333
11-03-25 Tuesday	Pathology	08:00AM - 9:20AM	Irreversible injury, necrosis and apoptosis	Dr Rabbiya Khaalid 0333 5608074 Dr Sara Rafi +92 345 4181333
14-03-25 Friday	Gynae & Obs	08:00 AM – 9:00 AM	Infertility	Dr. Ammara +923315119677 Dr. Sadia bano +923346874269
19-03-25 Wednesday	Pathology	09:20AM - 10:10AM	Genetic disorders	Dr Rabbiya Khaalid 0333 5608074 Dr Sara Rafi +92 345 4181333
	Medicine	10:30AM - 11:10AM	Chromosomal aberrations	Dr. Madiha Nazar Dr. Unazua
21-02-25 Friday	Surgery	11:00AM- 12:00PM	CA Breast	Dr. Asad Amir Dr. Hira 0332 2988981

SECTION - IV

Spiral Courses

Content

- **Longitudinal Themes**
    - **The Holy Quran Translation**
    - **Biomedical Ethics & Professionlism**
    - **Behavioural Sciences**
    - **Family Medicine**
    - **Artificial Intelligence (Innovation)**
    - **Integrated Undergraduate Research Curriculum (IUGRC)**
    - **Enterpeneurship**
    - **Digital Literacy Module**
    - **Early Clinical Exposure (ECE)**

Introduction to Spiral Courses

The Holy Quran Translation

A course of Islamic Studies provides students with a comprehensive overview of the fundamental aspects of Islam, its history, beliefs, practices, and influence on society and familiarize students with a solid foundation in understanding the religion of Islam from an academic and cultural perspective. Ethics, in integrated form will shape the core of the course to foster among students the universal ethical values promoted by Islam

Bioethics

Biomedical ethics, also known as bioethics, is a field of study that addresses the ethical, social, and legal issues arising from medicine and the life sciences. It applies moral principles and decision-making frameworks to the practice of clinical medicine, biomedical research, and health policy. Biomedical ethics seeks to navigate the complex ethical dilemmas posed by advances in medical technology, research methodologies, and healthcare practices. Key areas of focus include patient rights and autonomy, confidentiality, informed consent, end-of-life care, resource allocation, and the ethics of genetic engineering, among others.

Biomedical ethics within medical universities plays a pivotal role in shaping the moral framework through which future healthcare professionals navigate the complex and often challenging decisions they will face in their careers. This critical discipline integrates ethical theories and principles with clinical practice, research, and healthcare policy, fostering a deep understanding of the ethical dimensions of medicine. By embedding biomedical ethics into the curriculum, Rawalpindi medical university equips students with the tools to critically analyze and address ethical dilemmas, ranging from patient confidentiality and informed consent to end-of-life care and the equitable distribution of healthcare resources.

This education goes beyond theoretical knowledge, encouraging students to apply ethical reasoning in practical scenarios, thus preparing them for the moral complexities of the medical field. Biomedical ethics also promotes a culture of empathy, respect, and integrity, ensuring that future medical practitioners not only excel in their technical skills but also uphold the highest ethical standards in patient care and research. Through seminars, case studies, and interdisciplinary collaborations, students are encouraged to engage in ethical discourse, reflecting on the societal impact of medical advancements and the responsibility of medical professionals to society. This foundational aspect of medical education cultivates a generation of healthcare professionals committed to ethical excellence, patient advocacy, and the pursuit of equitable healthcare for all.

Professionalism

Professionalism in medicine refers to the set of values, behaviors, and relationships that underpin the trust the public has in doctors and other healthcare professionals. It encompasses a commitment to competence, integrity, ethical conduct, accountability, and putting the interests of patients above one's own. Professionalism involves adhering to high standards of practice, including maintaining patient confidentiality, communicating effectively and respectfully with patients and colleagues, and continually engaging in self-improvement and professional development. It also includes a responsibility to improve access to high-quality healthcare and to contribute to the welfare of the community and the betterment of public health. In essence, professionalism in medicine is foundational to the quality of care provided to patients and is critical for maintaining the trust that is essential for the doctor-patient relationship.

Rawalpindi Medical University emphasizes the importance of professionalism in medicine, integrating it throughout its curriculum to ensure that students embody the core values of respect, accountability, and compassion in their interactions with patients, colleagues, and the community. This focus on professionalism is designed to prepare students for the complexities of the healthcare environment, instilling in them a deep sense of responsibility to their patients, adherence to ethical principles, and a commitment to continuous learning and improvement. Through a combination of theoretical learning, practical training, and mentorship, RMU encourages its students to exemplify professionalism in every aspect of their medical practice. Workshops, seminars, and clinical rotations further reinforce these values, providing students with real-world experiences that highlight the importance of maintaining professional conduct in challenging situations. RMU's approach to professionalism not only shapes competent and ethical medical professionals but also contributes to the broader mission of improving healthcare standards and patient outcomes. By prioritizing professionalism, Rawalpindi Medical University plays a crucial role in advancing the medical profession and ensuring that its graduates are well-equipped to meet the demands of a rapidly evolving healthcare landscape with honor and integrity.

Communication Skills

Communication skill for health professionals involves the ability to effectively convey and receive information, thoughts, and feelings with patients, their families, and other healthcare professionals. It encompasses a range of competencies including active listening, clear and compassionate verbal and non-verbal expression, empathy, the ability to explain medical conditions and treatments in an understandable way, and the skill to negotiate and resolve conflicts. Effective communication is essential for establishing trust, ensuring patient understanding and compliance with treatment plans, making informed decisions, and providing holistic care. It directly impacts patient satisfaction, health outcomes, and the overall efficiency of healthcare delivery

At Rawalpindi Medical University (RMU), the development of communication skills is regarded as a fundamental aspect of medical education, recognizing its critical importance in enhancing patient care, teamwork, and interdisciplinary collaboration. RMU is dedicated to equipping its students with exceptional communication abilities, enabling them to effectively interact with patients, their families, and healthcare colleagues. The curriculum is thoughtfully designed to incorporate various interactive and experiential learning opportunities, such as role-playing, patient interviews, and group discussions, which allow students to practice and refine their communication skills in a supportive environment.

By integrating communication skills training throughout its programs, RMU not only enhances the interpersonal competencies of its future healthcare professionals but also contributes to improving the overall quality of healthcare delivery. Graduates from RMU are distinguished not just by their clinical expertise but also by their ability to connect with patients and colleagues, making them highly effective and compassionate practitioners.

Behavioral Sceinces

Behavioral sciences in medicine focus on understanding and addressing the psychological and social aspects of health and illness. This interdisciplinary field combines insights from psychology, sociology, anthropology, and other disciplines to enhance medical care and patient outcomes. It explores how behavior, emotions, and social factors influence health, disease, and medical treatment. By incorporating behavioral science principles into medical practice, healthcare professionals can better understand patients' perspectives, improve communication, and promote positive health behaviors, ultimately contributing to more comprehensive and effective patient care.

Family Medicine

Family medicine is a medical specialty dedicated to providing comprehensive health care for people of all ages and genders. It is characterized by a long-term, patient-centered approach, building sustained relationships with patients and offering continuous care across all stages of life. It focuses on treating the whole person within the context of the family and the community, emphasizing preventive care, disease management, and health promotion.

The Family Medicine Curriculum at Rawalpindi Medical University (RMU) marks a significant stride towards holistic healthcare education, aiming to prepare medical graduates for the comprehensive and evolving needs of family practice. This curriculum is designed to offer a broad perspective on healthcare, focusing on preventive care, chronic disease management, community health, and the treatment of acute conditions across all ages, genders, and diseases. Emphasizing a patient-centered approach, the curriculum ensures that students develop a deep understanding of the importance of continuity of care, patient advocacy, and the ability to work within diverse community settings.

RMU's Family Medicine Curriculum integrates theoretical knowledge with practical experience. Students are exposed to a variety of learning environments, including community health centers, outpatient clinics, and inpatient settings, providing them with a well-rounded understanding of the different facets of family medicine. This hands-on approach is complemented by interactive sessions, workshops, and seminars that cover a wide range of topics from behavioral health to geriatric care, ensuring students are well-equipped to address the comprehensive health needs of individuals and families.

Artificial Intelligence

To realize the dreams and impact of AI requires autonomous systems that learn to make good decisions. Reinforcement learning is one powerful paradigm for doing so, and it is relevant to an enormous range of tasks, including robotics, game playing, consumer modeling and healthcare. This class will provide a solid introduction to the field of reinforcement learning and students will learn about the core challenges and approaches, including generalization and exploration. Through a combination of lectures, and written and coding assignments, students will become well versed in key ideas and techniques for RL. Assignments will include the basics of reinforcement learning as well as deep reinforcement learning — an extremely promising new area that combines deep learning techniques with reinforcement learning. In addition, students will advance their understanding and the field of RL through a final project.

Integrated Undergraduate Research Curriculum

The integrated undergraduate research curriculum (IUGRC) of RMU occupies a definite space in schedule of each of the five years in rational and incremental way. It has horizontal harmonization as well as multidisciplinary research work potentials. In the first-year teachings are more introductory & inspirational rather than instructional. The teachings explain what & why of research and what capacities are minimally required to comprehend research & undertake research. Some research dignitaries' lecture are specifically arranged for sharing their experiences and inspiring the students. Students are specifically assessed through their individual compulsory written feedback (reflection) after the scheduled teachings end.

Entrepreneurship

Entrepreneurship is the process of designing, launching, and running a new business, which typically starts as a small enterprise offering a product, process, or service for sale or hire. It involves identifying a market opportunity, gathering resources, developing a business plan, and managing the business's operations, growth, and development.

Entrepreneurship in medical universities represents a burgeoning field where the innovative spirit intersects with healthcare to forge advancements that can transform patient care, medical education, and healthcare delivery. This unique amalgamation of medical expertise and entrepreneurial acumen empowers students, faculty, and alumni to develop groundbreaking medical technologies, healthcare solutions, and startups that address critical challenges in the health sector. By integrating entrepreneurship into the curriculum, Rawalpindi Medical university is not only expanding the traditional scope of medical education but also fostering a culture of innovation and problem-solving. This enables future healthcare professionals to not only excel in clinical skills but also in business strategies, leadership, and innovation management.

Such initiatives often lead to the creation of medical devices, digital health platforms, and therapeutic solutions that can significantly improve patient outcomes and make healthcare more accessible and efficient. Through incubators, accelerators, and partnerships with the industry, medical universities are becoming hotbeds for healthcare innovation, driving economic growth, and contributing to the broader ecosystem of medical research and entrepreneurial success.

Digital Literacy Module

Digital literacy means having the skills one needs to live, learn, and work in a society where communication and access to information is increasingly through digital technologies like internet platforms, social media, and mobile devices.

Early Clinical Exposure (ECE)

Early clinical exposure helps students understand the relevance of their preclinical studies by providing real-world contexts. This can enhance motivation and engagement by showing students the practical application of their theoretical knowledge. Early exposure allows students to begin developing essential clinical skills from the start of their education. This includes not only technical skills but also crucial soft skills such as communication, empathy, and professionalism. Direct interaction with patients early in their education helps students appreciate the complexities of patient care, including the psychological and social aspects of illness. Early exposure to various specialties can aid students in making informed decisions about their future career paths within medicine.

Early clinical experiences contribute to the development of a professional identity, helping students see themselves as future physicians and understand the responsibilities and ethics associated with the profession. This can help reduce the anxiety associated with clinical work by familiarizing students with the clinical environment. It can build confidence in their abilities to interact with patients and healthcare professionals. Engaging with real-life clinical situations early on encourages the development of critical thinking and problem-solving skills, which are essential for medical practice. It helps bridge the gap between theoretical knowledge and practical application, leading to a more integrated and holistic approach to medical education. It allows students to observe and understand how healthcare systems operate, including the challenges and limitations faced in different settings.: Early patient interaction emphasizes the importance of patient-centered care from the outset, underscoring the importance of treating patients as individuals with unique needs and backgrounds. Practical experiences can enhance long-term retention of knowledge as students are able to connect theoretical learning with clinical experiences.: Early clinical experiences often involve working in multidisciplinary teams, which fosters a sense of collaboration and understanding of different roles within healthcare.

In summary, early clinical exposure in medical education is pivotal for the holistic development of medical students, providing them with a strong foundation of practical skills, professional attitudes, and a deep understanding of patient-centered care.

Biomedical Ethics & Professionlism

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-SI(BE)-001	Introduction to History of Medical Ethics	• To appraise the historical perspective of Hippocratic oath • Understanding the beginnings of contemporary bioethics to address ethical dilemmas	C2 C2	LGIS	MCQs

Behavioral Sciences

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-SI(BS)-001	Introduction to Behavioral Sciences	• To describe Holistic and Traditional Allopathic medicine.	C1	LGIS	MCQs
M1-FM-SI(BS)-001	Stress in Medical Students & its Managment	• Define stress and its types of stress • Enlist causes of stess among medical student of effectively	C1		

Family Medicine

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-SI(FMed)-001	Introduction to Family Medicine & its application in health care system	• Describe presenting complaints of patients with body aches	C3	LGIS-1	MCQs
		• Discus complications of body aches			
		• Describe initial treatment of patients with body aches			
		• Know when to refer patient to consultant/ Hospital			

Integrated Undergraduate Research Curriculum (IUGRC)

Theory					
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
M1-FM-SI(IUGRC)-001	IUGRC (Research 1) Introduction to Health Research Process and Researcher	• Define health research & concepts of health research methods • Discuss the value of research in health and human development • Elaborate fundamental types of health research • Conceptualize the drivers of research • Describe meanings of health research & health research methods • Differentiate among various types of health research	C1 C2 C2 C2 C2 C2	LGIS	MCQs
M1-FM-SI(IUGRC)-002	IUGRC (Research 2) Characteristics of Research Process and Health Research Process	• Elaborate various characteristics of a health research process • Differentiate research from a non-research activity • Elaborate ingredients of researcher • Discuss the criteria for selection of a research topic • Elaborate the types of variables • Differentiate between qualitative and quantitative data	C1 C2 C2 C2 C2 C2	LGIS	MCQs
M1-FM-SI(IUGRC)-003	IUGRC (Research 3) Basics of Ethics in Health Research	• Elaborate the value of ethics in conduct of Health Research • Explain basic ethical principles of health research • Explain ethics of research methods • Interpret the application of data collection ethics	C2 C2 C2 C2	LGIS	MCQs
M1-FM-SI(IUGRC)-004	IUGRC (Research 4) Basics of Ethics in Medical Research	• Narrate responsibility for ethics in HR • Explain Nuremburg code and importance of ethics in • current research trends	C1 C2 C2	LGIS	MCQs

		• . Elaborate General ethical principles including explanation of basic principles of Beneficence, non-maleficence, respect • and justice • Discuss the Declaration of Helsinki	C2		

Information Technology (IT)

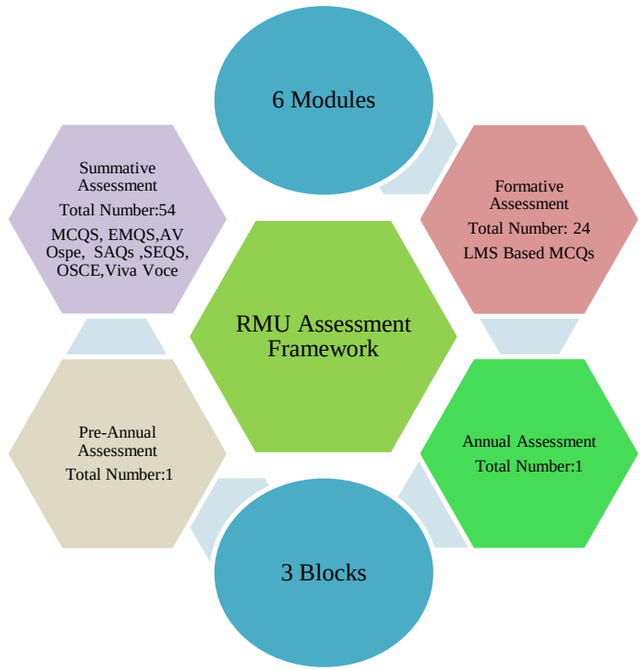
Theory				
Code	**Topic**	**Learning Objectives** **At the end of the lecture the student should be able to**	**Teaching Strategy**	**Assessment Tool**
M1-FM-SI(DL)-001	RMU Goes digital	• Introduction to LMS, CMS and MS Teams. • Introduction to RMU website • How to use HEC digital library • How to use up to date website	LGIS	MCQs

List of Foundation Module - I Spiral Courses Lectures

Date/Day	Department	Time	Topic of Lectures	Teachers Name & Contact #
18-02-25 Tuesday	Behavioral Sciences	11:00 AM – 12:00 PM	Introduction to Behavioral Sciences	Dr. Asad Nizami +92 333 5167705
20-02-25 Thursday	Behavioral Sciences	10.00AM – 11:00 AM	Stress in medical students and it's management	Dr. Azeem Rao +92 321 6358118 Dr. Sadia +92 333 4746639
21-02-25 Friday	Community Medicine	10:00AM – 11:00AM	Introduction to health research process and researcher ((IUGRC 1)	Dr Rizwana Shahid 0323-5375362 Dr AbdulQudoos 0334-0560161
26-02-25 Wednesday	Community Medicine	10:10 AM – 11:00 AM	Characteristic of research process and health research process (IUGRC 2)	Dr Rizwana Shahid Dr AbdulQudoos
28-02-25 Friday	Community Medicine	10:00AM -11:00AM	Basis of ethics in health research (IUGRC 3)	Dr Rizwana Shahid Dr Abdul Qudoos
01-03-25 Saturday	Community Medicine	11:00AM- 11:50AM	Basis of ethics in medical research (research 4)	Dr Rizwana Shahid Dr Abdul Qudoos
08-03-25 Saturday	Community Medicine	08:00 AM to 09:20 AM	Basis of ethics in health research (research 5)	

SECTION-V

Assessment



Assessment

Assessment is the systematic basis for making inferences about the learning and development of students. It is the process of defining, selecting, designing, collecting, analyzing, interpreting, and using information to increase students' learning and development.

Assessment Policy

Scope

This policy is applicable to all the students of the MBBS program of RMU for all modes of teaching (on campus/online/any other) from the date of approval by the RMU Academic Council.

1. **Guiding principles**

- RMU has the responsibility to ensure to all the stakeholders that students have achieved the identified outcomes of the medical degree course.
- Assessment requires a variety of methods; no single method can completely ensure that the requisite competence level has been achieved. Hence each assessmentinstrument must be selected based on its utility index.
- Feedback, ensuring that the feedback loop is closed, should be provided to students following all assessments to ensure that students identify gaps in their learning andfaculty can review future curricular and assessment content.
- The quality of the entire assessment including confidentiality of the assessment process must be ensured.
- The assessment process should be clear and transparent so that students know in advance the expectations (from students) and consequences of the assessment.
- Details of the conduct of examinations are available in the Examination policy document.

2. **Purposes of Assessment**.

- To ensure appropriate competence has been achieved.
- Feedback to students regarding their readiness and deficiencies
- Feedback to faculty to evaluate the effectiveness of the teaching program.

3. Forms of assessments

3.1 Formative Assessment

A formative assessment refers to a low-stakes assessment that does not normally contribute towards a student's final grade. Assessment for learning is carried out throughout modules and clerkships using various strategies (at the discretion of module coordinators and clerkship directors' feedback. Weekly assessment of Large Group Interactive Session (LGIS) and Self-Directed Learning (SDL) Sessions will be conducted on LMS (learning management system). The LMS result will be shared by module coordinator and DME through vice chancellor on weekly basis

3.2 Summative Assessment

A summative assessment is performed at the end of a unit that allows a teacher to measure a student's understanding, typically against a standardized criterion. These Assessment includes End of Module Assessment (EMA), End of Block Assessment (EBA), Pre- Annual Assessment (PAA) and Annual Professional Assessment (APA). Each Assessment comprises of theory component and a practical component.

3.2.1 Components of Assessment

- Cognitive competence is tested in the theory component using the following tool of assessment
  - USMLE/ PLAB Type / Multiple Choice Questions (MCQs)
  - USMLE/ PLAB Type / Extended Match Questions (EMQ)
  - Short Answer Questions (SAQs)
  - Short Essay Questions (SEQs)
- Competence in psychomotor and affect domains is tested in practical component using the following tools of assessment
  - Audio Visual OSPE (AVOSPE): This comprises of stations using PowerPoint slides with images animations and videos
  - Laboratory OSPE (Lab OSPE): This comprises of stations focused on practical (hands on performance) components from core subject areas
  - Integrated OSPE (I OSPE): This comprises of stations, from each core subject, emphasizing horizontal and vertical integration
  - Objective Structured Clinical Examinations (OSCE): This comprises of stations, dedicated to Early Clinical Exposure (ECE), Simulated Patients (SP), models, ALPHA and clinical component of core subjects
  - Objective Structured Viva Examinations (OSVE): This comprises of table viva for each core subject. Students will be evaluated by internal and

external examiner using a structured marking rubric, with each viva

3.2.2 End of Module Assessment (EMA)

- End of module assessments will be conducted at the end of each module.
- The module teams will be responsible for the assessment plan including assessment strategies, timings, and other essentials

3.2.3 End of Block Assessment (EBA)

- End of block assessments will be conducted at the end of each block.
- The block teams will be responsible for the assessment plan including assessment strategies, timings, and other essentials
- 80% attendance in each subject will be mandatory
- Student must pass in all LMS, mid module assessments to appear in EBA
- There will be no remedial classes for attendance compensation
- There will be no remedial of assessment in case of poor academic performance

Table of Specification (TOS) For Module Examination for First Year MBBS

Domains: C-Core Subject (70%) Levels C1-C2, HV- Horizontal & Vertical Integration (20%) Levels C2-C3, S- Spiral Integration (10%) Levels C2-C3

End of Module Assessment	Subject	Theory (Cognitive) Assessment																			Practical (Skill & Attitude) Assessment											Grand Total	Total Time of Module Assessment
		MCQs					EMQs			SAQs					SEQs				Marks	Total Marks Theory	Total Time	AV OSPE					Time	AED Reflective Writing	OSVE			Total Practical Marks		
		C	HV	S	Total	Marks	C	Total	Marks	C	HV	S	Total	Marks	C	HV	S	Total				C	HV	S	Total	Marks			Viva	Copy	Total			
First Module	Anatomy	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Physiology	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Biochemistry	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
Formative- Weekly LMS Based Assessment of 30 MCQs (10 MCQs per Subject)																																	

End of Module Assessment	Subject	Theory (Cognitive) Assessment																			Practical (Skill & Attitude) Assessment											Grand Total	Total Time of Module Assessment
		MCQs					EMQs			SAQs					SEQs				Marks	Total Marks Theory	Total Time	AV OSPE					Time	AED Reflective Writing	OSVE			Total Practical Marks		
		C	HV	S	Total	Marks	C	Total	Marks	C	HV	S	Total	Marks	C	HV	S	Total				C	HV	S	Total	Marks			Viva	Copy	Total			
Second Module	Anatomy	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Physiology	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Biochemistry	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
Formative- Weekly LMS Based Assessmen tof 30 MCQs (10 MCQs per Subject)																																	

Block	Subjects	LMS Based Assessment					OSPE						Grand Total	Total Block Time
		MCQs					LabOSPE	IOSPE	COSPE	Total	Marks	Time		
		C	HV	S	Total	Time	C	HV	S					
BLOCK	Anatomy	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS
	Physiology	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS
	Biochemistry	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS

50% Questions/OSPE Stations/Viva Stations will be from Foundation Module and 50% Questions will be from MSK-1 Module

For Each assessment student will have to individually pass Theory and Practical components

Weekly LMS Assessment			
Subjects	Anatomy	Physiology	Biochemist
No of MCQs*	30	30	30
Marks/MCQ	30	30	30
*MCQ=1 Mark each, 1 min each			

Marks per Item

MCQ=1	EMQ= 5	SAQ= 5	SEQ= 9	AVOSPE= 5		OSPE= 3

OSPE Time=1 Round of 40 Students =80 min

3 Round of 40 Students =240 min

OSVE=Time per student=5mins

3.2.4 Continuous Internal Assessment (CIA)

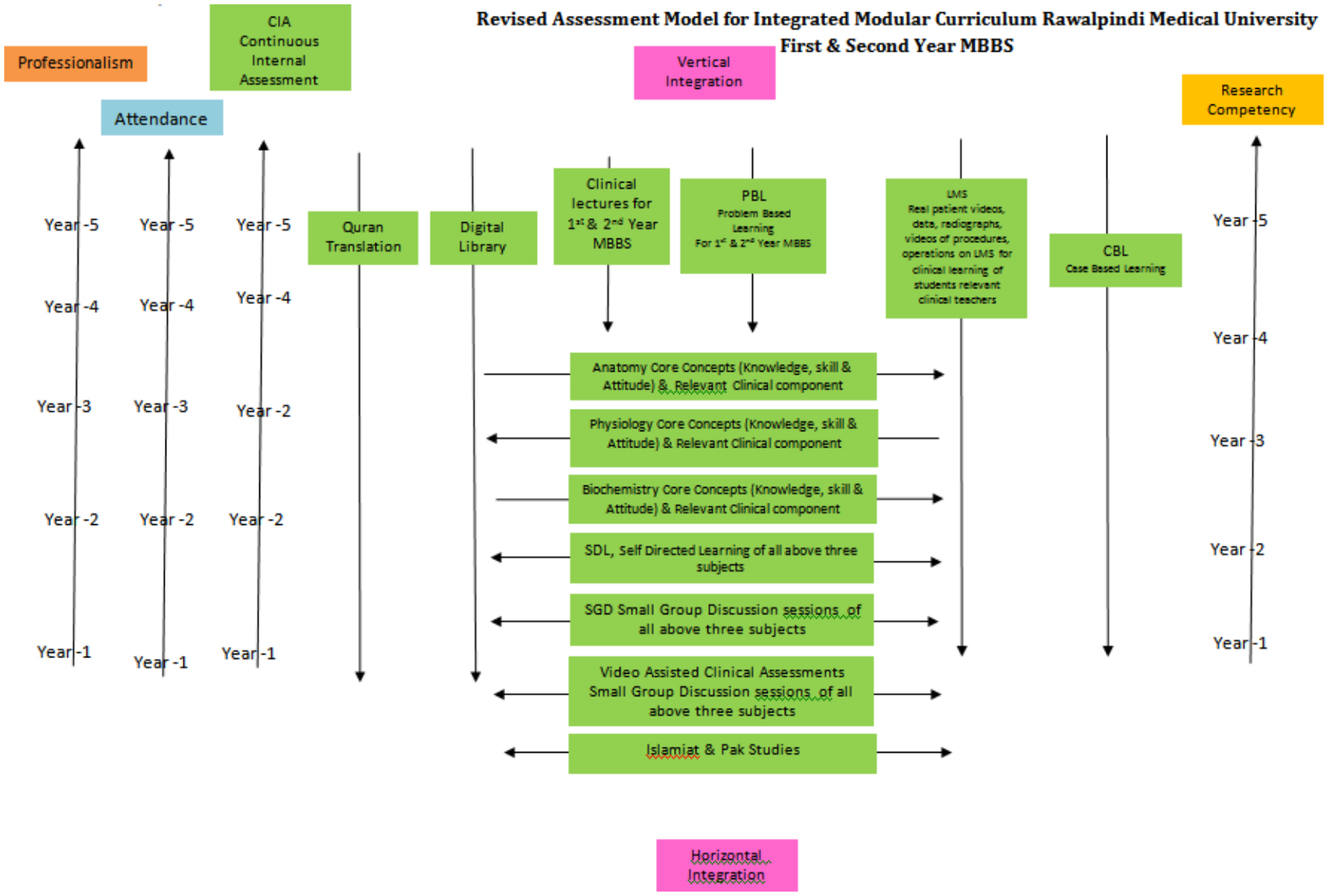
Continuous Internal Assessment means the assessment based on tests and assignments given to the students during an academic period.

Break up of internal assessment is as follows:

Blocks	Subjects	Total marks	Module 1	Module 2	Total marks
Block 1 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
Block 2 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
Block 3 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
				Total marks	270 Marks

Once internal assessment is compiled it CANNOT be altered under ANY circumstance unless a clerical/ human error is detected. He will repeat classes and skillsThere will be no change in calculated internal assessment scores for supplementary University examination.

I. Diagrammatic Presentation of Various Components of Clinically Oriented Integrated Modular Curriculum of Rawalpindi Medical University



Reference: The Integrated & Clinically Oriented Assessment Model For Under Graduates Rawalpindi Medical University "Mumtahin""ممتحن"(The Examiner)

No. of Assessments of Anatomy for First Year MBBS (Block- I):

Block	Sr. #	Module – 1 Foundation Module - I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – I	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 2 MSK-I Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – I Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

No. of Assessments of Anatomy for First Year MBBS (Block- II):

Block	Sr. #	Module – 3 MSK-II Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – II	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 4 Blood & Immunity Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – II Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

No. of Assessments of Anatomy for First Year MBBS (Block- III):

Block	Sr. #	Module – 5 CVS Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – II	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 6 Respiration Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – III Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

Total Time of Anatomy Assessments for First Year MBBS:

Module	Summative Assessment Time	Formative Assessment Time	Total Assessments Time
Foundation Module - I	2 Hours & 35 minutes	30 Minutes	**3 Hours & 05 Minutes**
MSK-I Module	2 Hours & 35 minutes	60 Minutes	**3 Hours & 35 Minutes**
Block -I	**5 Hours & 30 Minutes**		**5 Hours & 30 Minutes**
MSK-II Module	2 Hours & 35 minutes	30 Minutes	**3 Hours & 05 Minutes**
Blood & Immunity Module	2 Hours & 35 minutes	60 Minutes	**3 Hours & 35 Minutes**
Block -II	**5 Hours & 30 Minutes**		**5 Hours & 30 Minutes**
CVS Module	2 Hours & 35 minutes	30 Minutes	**3 Hours & 05 Minutes**
Respiration Module	2 Hours & 35 minutes	60 Minutes	**3 Hours & 35 Minutes**
Block -III	**5 Hours & 30 Minutes**		**5 Hours & 30 Minutes**
Pre-Annual Examination		……	7 Hours & 45 Minutes
First Professional		……	3 Hours & 45 Minutes
Grand Total	**31 Hours & 30 Minutes**	**4 hours and 30 minutes**	**48 Hours**

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 250 Hours:	Grand Total Assessment Hours **48 Hours**
	5:1	

No. of Assessments of Physiology for First Year MBBS (Block- I):

Block	Sr. #	Module – 1 Foundation Module - I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – I	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 2 MSK-I Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – I Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

No. of Assessments of Physiology for First Year MBBS (Block- II)

Block	Sr. #	Module – 3 MSK-II Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – II	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs Av OSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 4 Blood & Immunity Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – II Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

No. of Assessments of Physiology for First Year MBBS (Block- III):

Block	Sr. #	Module – 5 CVS Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – II	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 6 Respiration Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – III Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

Total Time of Physiology Assessments for First Year MBBS:

Module	Summative Assessment Time	Formative Assessment Time	Total Assessments Time
Foundation Module - I	2 Hours & 35 minutes	30 Minutes	**3 Hours & 05 Minutes**
MSK-I Module	2 Hours & 35 minutes	60 Minutes	**3 Hours & 35 Minutes**
Block -I	**5 Hours & 30 Minutes**		**5 Hours & 30 Minutes**
MSK-II Module	2 Hours & 35 minutes	30 Minutes	**3 Hours & 05 Minutes**
Blood & Immunity Module	2 Hours & 35 minutes	60 Minutes	**3 Hours & 35 Minutes**
Block -II	**5 Hours & 30 Minutes**		**5 Hours & 30 Minutes**
CVS Module	2 Hours & 35 minutes	30 Minutes	**3 Hours & 05 Minutes**
Respiration Module	2 Hours & 35 minutes	60 Minutes	**3 Hours & 35 Minutes**
Block -III	**5 Hours & 30 Minutes**		**5 Hours & 30 Minutes**
Pre-Annual Examination		……	7 Hours & 45 Minutes
First Professional		……	3 Hours & 45 Minutes
Grand Total	**31 Hours & 30 Minutes**	**4 hours and 30 minutes**	**48 Hours**

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 225 hours:	Grand Total Assessment Hours 48 Hours
	9:2	

No. of Assessments of Biochemistry for First Year MBBS (Block- I):

Block	Sr. #	Module – 1 Foundation Module - I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – I	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 2 MSK-I Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – I Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

No. of Assessments of Biochemistry for First Year MBBS (Block- II):

Block	Sr. #	Module – 3 MSK-II Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – II	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 4 Blood & Immunity Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – II Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

No. of Assessments of Biochemistry for First Year MBBS (Block- III):

Block	Sr. #	Module – 5 CVS Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – II	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			**3 Hours & 05 Minutes**			**3 Assessments**	
	Sr. #	**Module – 6 Respiration Module Components**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			**3 Hours & 35 Minutes**			**4 Assessments**	
	Sr. #	**Block – III Assessment**	**Type of Assessments**	**Total Assessments Time**			**No. of Assessments**	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
		Total		**5 Hours & 30 Minutes**			**2 Assessments**	

Total Time of Biochemistry Assessments for First Year MBBS:

Module	Summative Assessment Time	Formative Assessment Time	Total Assessments Time
Foundation Module - I	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
MSK-I Module	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -I	5 Hours & 30 Minutes		5 Hours & 30 Minutes
MSK-II Module	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Blood & Immunity Module	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -II	5 Hours & 30 Minutes		5 Hours & 30 Minutes
CVS Module	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Respiration Module	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -III	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Pre-Annual Examination		……	7 Hours & 45 Minutes
First Professional		……	3 Hours & 45 Minutes
Grand Total	**31 Hours & 30 Minutes**	**4 hours and 30 minutes**	**48 Hours**

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 125 Hours:	Grand Total Assessment Hours 48 Hours
	5:2	

No. of Asssessments of Clinical Component (Vertical and Horizontal Integration) for First Year MBBS (Block- I):

Block	Sr. #	Module – 1 Foundation Module - I Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
Block – I	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			**45 Minutes**		**2 Assessments**
	Sr. #	**Module – 2 MSK-I Module Components**	**Type of Assessments**	**Total Assessments Time**		**No. of Assessments**
				Assessment Time	Formative Assessment Time	
	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			**45 Minutes**		**2 Assessments**

No. of Assessments of Clinical Component (Vertical and Horizontal Integration) for First Year MBBS (Block- II):

Block	Sr. #	Module – 3 MSK-II Module Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
Block – II	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			**45 Minutes**		**2 Assessments**
	Sr. #	**Module – 4 Blood & Immunity Module Components**	**Type of Assessments**	**Total Assessments Time**		**No. of Assessments**
				Assessment Time	Formative Assessment Time	
	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			**45 Minutes**		**2 Assessments**

No. of Assessments of Clinical Component (Vertical and Horizontal Integration) for First Year MBBS (Block- III):

Block	Sr. #	Module – 5 CVS Module Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
Block – III	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			**45 Minutes**		**2 Assessments**
	Sr. #	**Module – 6 Respiration Module Components**	**Type of Assessments**	**Total Assessments Time**		**No. of Assessments**
				Assessment Time	Formative Assessment Time	
	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			**45 Minutes**		**2 Assessments**

Total Time of Clinical Component (Vertical and Horizontal Integration) Assessments for First Year MBBS:

Module	Formative Assessment Time	Total Assessments Time
Foundation Module - I	45 Minutes	45 Minutes
MSK-I Module	45 Minutes	45 Minutes
Block -I		
MSK-II Module	45 Minutes	45 Minutes
Blood & Immunity Module	45 Minutes	45 Minutes
Block -II		
CVS Module	45 Minutes	45 Minutes
Respiration Module	45 Minutes	45 Minutes
Block -III		
Pre-Annual Examination	……	35 Minutes
First Professional	……	60 Minutes
Grand Total	**4 hours and 30 minutes**	**6 hours and 5 minutes**

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 97 Hours:	Grand Total Assessment Hours 6 Hours
	19:1	

3.2.4 Pre- Annual Assessment (PAA)

- It is mandatory to appear in all EBA to appear in PAA
- Transcript / good character certificate from head of departments will be needed to appear in pre-annual assessment.

Proposed Table of Specifications for 1st Pre-Annual Examination 2025

- Total Marks: 845

Total marks =800 Marks			
Subjects		% Weightage of subjects	Marks distribution as per weightage
	Anatomy	28%	240 Marks
	Physiology	28%	240 Marks
	Biochemistry	28%	240 Marks
	Integrated Subjects Community Medicine & Public Health/Research Behavioural Sciences Pathology Pharmacology Radiology Family Medicine Surgery Medicine Gynae & Obs Orthopedics Pediatrics Surgery Opthalmology Otorhinolaryngology	14 %	115 Marks
	Early Clinical Exposure (ECE)	1%	5 Marks
	ALPHA(Artificial Intelligence, Leadership, Professionalism, Humanities & Arts) GEC (General Education Cluster)	1%	5 Marks
	Total Marks		845 Marks

Notes:

- The total marks for final Annual Assessment (Professional examination) are 900 as per UHS
- The total marks for Pre-Annual Assessment are 800 as OSVE is not being used as assessment tool.
- As per analysis of Module/Block results throughout the academic year, the passing percentage of students is generally higher in OSVE than in other assessment tools. For comprehensive assessment this tool will not be used in Pre- Annual Assessment.as per decision of assessment committee OSVE is not included.

A - Blockwise Distribution of Marks

Total Marks	BLOCK I Marks	BLOCK II Marks	BLOCK III Marks	Total Marks
845 Marks	285 Marks	285 Marks	275 Marks	845 Marks

B - Subject wise marks breakup in Blocks

Subjects	Block I	Block II	Block III	Total Marks
Anatomy	80 Marks	80 Marks	80 Marks	240 Marks (28%)
Physiology	80 Marks	80 Marks	80 Marks	240 Marks (28%)
Biochemistry	80 Marks	80 Marks	80 Marks	240 Marks (28%)
Integrated Subjects	45 Marks	45 Marks	35 Marks	125 Marks (16%)

C - Subject wise Break up of Marks for First year MBBS - Block -I

Block	**Subjects**	**Theory (Knowledge)**	**Practical (Skill/attitude)**	**Total marks**	**Total marks (Core subjects + Integrated Subjects)**
Block I (Core subjects + Integrated Subjects) 285 Marks	Anatomy	50	30	80 marks	240+ 45 = 285 marks
	Physiology	50	30	80 marks	
	Biochemistry	50	30	80 marks	
	Total			240 marks	
	Integrated Subjects			45 Marks	
	Community Medicine /Research	6 Marks			
	Behavioural Sciences	3 Marks			
	Pathology	2 Marks			
	Pharmacology	3 Marks			
	Radiology	2 Marks			
	Gynae & Obs	4 Marks			
	Medicine	2 Marks			
	Family Medicine	2 Marks			
	Paediatrics	4 Marks			
	Surgery	2 Marks			
	ECE		5 Marks		
	ALPHA and GEC		5 Marks		
Total marks		240+ 45 = 285 marks			

D - Subject wise Break up of Marks for First year MBBS - Block -II

Block	**Subjects**	**Theory (Knowledge)**	**Practical (Skill/attitude)**	**Total marks**	**Total marks (Core subjects + Integrated Subjects)**
Block II (Core subjects + Integrated Subjects) 285 Marks	Anatomy	50	30	80 marks	240+ 45 = 285 marks
	Physiology	50	30	80 marks	
	Biochemistry	50	30	80 marks	
	Total			240 marks	
	Integrated Subjects			45 Marks	
	Community Medicine /Research	4 Marks			
	Family Medicine	3 Marks			
	Orthopedics	3 Marks			
	Radiology	3 Marks			
	Medicine	3 Marks			
	Gynae & Obs	3 Marks			
	Behavioural Sciences	4 Marks			
	Pathology	2 Marks			
	ECE		5 Marks		
	ALPHA and GEC		5 Marks		
Total marks		240+ 45 = 285 marks			

E - Subject wise Break up of Marks for First year MBBS - Block -III

Block	Subjects	Theory (Knowledge)	Practical (Skill/attitude)	Total marks	Total marks (Core subjects + Integrated Subjects)
Block III Total marks (Core subjects + Integrated Subjects) 275 Marks	Anatomy	50	30	80 marks	240+35 = 275 marks
	Physiology	50	30	80 marks	
	Biochemistry	50	30	80 marks	
	Total			240 marks	
	Integrated Subjects			35 Marks	
	Community Medicine	2 Marks			
	Behavioural Sciences	2Marks			
	Medicine	3 Marks			
	Family medicine	3 Marks			
	Gynae & Obs	2 Marks			
	Radiology	2 Marks			
	Pediatrics	2 Marks			
	Otorhinolaryngology	3 Marks			
	Opthalmology	2 Marks			
	Pathology	2Marks			
	Pharmacology	2 Marks			
	ECE		5 Marks		
	ALPHA and GEC		5 Marks		
Total marks		240+35 = 275 marks			
GRAND TOTAL MARKS		800			

F - Modular distribution of Marks for Module 1(Foundation Module - I) & Module 2(MSK-I Module) - Block -I

Block -I Theory Component (Knowledge)

Subjects	MCQs			EMQ			SAQ			SEQ			Total marks
	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	
Anatomy	13	12	25	-	01	5	01	01	10	0.5	0.5	10	50
Physiology	12	13	25		01	5	01	01	10		01	10	50
Biochemistry	15	10	25	-	01	5	01	01	10	01	-	10	50
Vertically & Spirally Integrated Subjects			35	-		-	-		-	-		-	35
Total	**110**		**110**	**3**		**15**	**6**		**30**	**3**		**30**	**185**

Block -I Practical Component (Skill & Attitude)

Subjects	Lab OSPE			Iospe			OSCE			Total stations	Total marks
	Number of Stations of Module -1	Number of Stations of Module -2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks		
Anatomy	01	02	15	01		5	01	01	10	6	30
Physiology	01	02	15		01	5	01	01	10	6	30
Biochemistry	01	02	15	-	01	5	01	01	10	6	30
ECE	-		-	-		-		01	5	1	5
ALPHA- Research	-		-	-		-		01	5	1	5
Total	9		45	3		15	8		40	20	100

G- Modular distribution of Marks for Module 3 (MSK-II Module) & Module 4(Blood & Immunity module) - Block -II

Block -II Theory Component (Knowledge)

Subjects	MCQs			EMQ			SAQ			SEQ			Total marks
	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	
Anatomy	12	13	25		01	5	01	01	10	0.5	0.5	10	50
Physiology	12	13	25		01	5	01	01	10		01	10	50
Biochemistry	10	15	25		01	5	01	01	10		01	10	50
Vertically & Spirally Integrated Subjects			35	-		-	-		-	-		-	35
Total	110		110	3		15	6		30	3		30	185

Block -II Practical Component (Skill & Attitude)

Subjects	LabOSPE			Iospe			OSCE			Total stations	Total marks
	Number of Stations of Module -1	Number of Stations of Module -2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks		
Anatomy	02	01	15	-	01	5	01	01	10	6	30
Physiology	01	02	15		01	5	01	01	10	6	30
Biochemistry	01	02	15	01	-	5	01	01	10	6	30
ECE	-		-	-		-		01	5	1	5
ALPHA-Research	-		-	-		-		01	5	1	5
Total	9		45	3		15	8		40	20	100

H - Modular distribution of Marks for Module 5 (CVS Module) &Module 6 (Respiration Module) - Block -III

Block -III Theory Component (Knowledge)

Subjects	MCQs			EMQ			SAQ			SEQ			Total marks
	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	
Anatomy	13	12	25	01	-	5	01	01	10	0.5	0.5	10	50
Physiology	13	12	25	01		5	01	01	10	01		10	50
Biochemistry	13	12	25	01	-	5	01	01	10	01	-	10	50
Vertically & Spirally Integrated Subjects			25	-		-	-		-	-		-	25
Total	100		100	3		15	6		30	3		30	175

Block -III Practical Component (Skill & Attitude)

Subjects	LabOSPE			I OSPE			OSCE			Total stations	Total marks
	Number of Stations of Module -1	Number of Stations of Module -2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks		
Anatomy	02	01	15	-	01	5	01	01	10	6	30
Physiology	02	01	15	01	-	5	01	01	10	6	30
Biochemistry	02	01	15	-	01	5	01	01	10	6	30
ECE	-		-	-		-		01	5	1	5
ALPHA-Research	-		-	-		-		01	5	1	5
Total	9		45	3		15	8		40	20	100

Calculation for Pre-Annual Assessment Implementation for First Year MBBS 2025

Block -I	Theory component (Knowledge)				Practical component (Skill & Attitude)			Total time required for Block – I pre annual assessment is 8 hrs and 25 minutes
	MCQs	SAQs	SEQs	EMQs	Lab OSPE	I OSPE	OSCE	
Total number of questions	110	6	3	3	9	3	8	
Time required for each component	110 x 1 min	6 x 10 min	3 x 10 min	3 x 5 min	9 x2.5 min	3 x 2.5 min	8 x 2.5 min	
	110 mins	60 mins	30 mins	25 mins	22.5 mins	7.5 mins	20 mins	
Total time	110+60+30+25 = 225 mins (4hrs and 25 mins)				22.5+7.5+20 = 50 mins/ round of 20 students 4 hrs			
					If the OSPE is conducted simultaneously at 4 venues: In 50 minutes, 20 students can complete the OSPE at each venue, totaling 80 students across all venues. With 5 rounds at 4 venues, the entire class can complete the OSPE within 4 hours.			

Block -II	Theory component (Knowledge)				Practical component (Skill & Attitude)			Total time required for Block – II pre annual assessment is 8 hrs and 25 minutes
	MCQs	SAQs	SEQs	EMQs	Lab OSPE	I OSPE	OSCE	
Total number of questions	110	6	3	3	9	3	8	
Time required for each component	110 x 1 min	6 x 10 min	3 x 10 min	3 x 5 min	9 x2.5 min	3 x 2.5 min	8 x 2.5 min	
	110 mins	60 mins	30 mins	25 mins	22.5 mins	7.5 mins	20 mins	
Total time	110+60+30+25 = 225 mins (4hrs and 25 mins)				22.5+7.5+20 = 50 mins/ round of 20 students 4 hrs			
					If the OSPE is conducted simultaneously at 4 venues: In 50 minutes, 20 students can complete the OSPE at each venue, totaling 80 students across all venues. With 5 rounds at 4 venues, the entire class can complete the OSPE within 4 hours.			
Block -III	Theory component (Knowledge)				Practical component (Skill & Attitude)			Total time required for Block – III pre annual assessment is 8 hrs and 15 minutes
	MCQs	SAQs	SEQs	EMQs	Lab OSPE	I OSPE	OSCE	
Total number of questions	100	6	3	3	9	3	8	
Time required for each component	100 x 1 min	6 x 10 min	3 x 10 min	3 x 5 min	9 x2.5 min	3 x 2.5 min	8 x 2.5 min	
	100 mins	60 mins	30 mins	25 mins	22.5 mins	7.5 mins	20 mins	
Total time	100+60+30+25 = 225 mins (4hrs and 15 mins)				22.5+7.5+20 = 50 mins/ round of 20 students 4 hrs			
					If the OSPE is conducted simultaneously at 4 venues: In 50 minutes, 20 students can complete the OSPE at each venue, totaling 80 students across all venues. With 5 rounds at 4 venues, the entire class can complete the OSPE within 4 hours.			

3.2.5 Annual Professional Assessment (APA)

- Minimum 50% score in pre-annual assessment is required to appear in annual professional examination.
- Annual professional exam weightage will be 70%
- Continuous internal assessment weightage will be 30%
- 60% marks will be needed to pass annual professional examination.
- Written and practical /OSPE/OSCE should be passed separately.

Regulations

- Final Annual Assessment shall be open to any student who:
  - Has been enrolled/registered and completed one academic year preceding the concerned Final Annual Assessment in Rawalpindi Medical University.
  - Has his/her name submitted to the Controller of Examinations for assessment purposes by the Principal of the College and meets all prerequisites for the assessment.
  - Has his/her internal assessment marks for all Blocks submitted to the Controller of Examinations by the Principal of the College along with the admission form.
  - Produces good character certificate the following certificates duly verified by the Principal:
- Candidates not meeting the above requirements shall not be allowed to appear in the Final Annual Assessment but may sit for the supplementary examination if they fulfill all remaining requirements and stay enrolled as regular students up to the next examination.
- To pass the Final Annual Assessment, students must achieve at least 50% in both the Written and Oral/Practical/Clinical assessments, as well as a 50% aggregate score
  simultaneously.
- Candidates scoring 85% or above in any paper will be awarded a "distinction" in that Block, provided they achieve at least 80% in the Written component. Candidates must pass all papers in the Final Annual Assessment concurrently to receive any distinctions.
- A candidate who fails one or more papers in the Final Annual Assessment may temporarily join the next professional class until the supplementary examination but will not be promoted permanently without passing all papers.
- Students taking the supplementary examination for the first time due to an absence in the annual examination, if failing any paper, will be retained in their current

class.

- Any student failing to clear the First or Second Final Annual Assessment MBBS within four attempts will be ineligible to continue or reapply for MBBS or BDS admission.
- Examination applications must be submitted to the Controller of Examination via the College Principal, with the required fee and documentation.
- College must submit question papers, internal assessment marks, and attendance records for each block to the Examinations Department of Rawalpindi Medical University.
- Revised internal assessments are only permissible for detained students. Continuous assessment records must be maintained by college departments.
- Examination fees are to be paid through the Principal, using a bank draft, pay order, or crossed cheque made out to the Treasurer, Rawalpindi Medical University.
- One annual and one supplementary examination for First and Second Final Annual Assessment MBBS are allowed per academic session. Under exceptional circumstances, such as national emergencies, a special examination may be arranged with the Syndicate and Board of Governors' approval.
  Reference: UHS INTEGRATED CURRICULUM VERSION 2

Statutes:

- **Scheduling:** The First Professional MBBS will be held at the end of First year whereas the Second Professional MBBS shall be held at the end of Second year.
- **Subjects:** Every candidate is required to appear in the following subjects in each Block

  a. **Core subjects-** Integrated Anatomy, Integrated Physiology, Integrated Biochemistry

  b. **Vertically integrated Subjects-** Community Medicine C Public Health,

  Behavioral Sciences, Pathology, Pharmacology, associated Clinical Subjects

  c. **Spirally Integrated subjects-** General Education Cluster (GEC),ALPHA (Artificial Intelligence, Leadership, Professionalism, Humanities and Arts), Early Clinical Exposure (ECE) and Research.

- **Assessments:** There will be three papers in First Annual Professional Examination and four papers in the Second Annual professional Examination.

Paper	First year MBBS	Second year MBBS
Paper-1	Block -I	Block -I
Paper-2	Block- II	Block- II
Paper-3	Block-III	Block-III
Paper-4	-------	GEC (Islamic Studies C Pakistan Studies)

a. **First Professional Examination Total Marks = G00***

   i. Block I Assessment Total Marks = 300

   ii. Block II Assessment Total Marks = 300

   iii. Block III Assessment Total Marks = 300

b. **Second Professional Examination- 1000 Marks***

   i. Block I Assessment Total Marks = 300

   ii. Block II Assessment Total Marks = 300

   iii. Block III Assessment Total Marks = 300

   iv. GEC Assessment (Islamic Studies C Pakistan Studies)Total Marks = 100

***Marks Adopted from University of Health Sciences (UHS)
Reference: **https://www.uhs.edu.pk/downloads/2k23mbbscurriculum.pdf**

- **Continuous Internal Assessment (CIA):**

Continuous Internal Assessment shall carry total marks = 270 (30% of the total allocated marks= 900) for first and second year MBBS .CIA for each block is 90 marks and this score will be equally distributed to the written Assessment (45marks) and practical assessment(45 marks).

- **Block Assessment Components**: the components of Block Assessment shall be as follows:

a. **One theory Paper (K)** having two sections

i. **Section:1** One best type Multiple choice questions of 75 Marks (1 mark for each MCQ) and time allocated will be 90 Minutes. The integration ratio in MCQs will be 70% core content, 10% horizontal integration, and 20% vertical integration. There will be no negative marking

ii. **Section:2** will have Structured Essay Questions of 5 marks each and time allocated for 1 SEQ will be 10 minutes**.**

First year MBBS	**Number of MCQs**	**Number of SEQs**
Block -I	75	6
Block -II	75	6
Block -III	75	6
Second Year MBBS	**Number of MCQs**	**Number of SEQs**
Block -I	70	7
Block -II	75	6
Block -III	80	5

b. **Practical Component (Skill and Attitude):** The assessment will include an Objective Structured Practical Examination (OSPE) with a total of 15 stations, time allocated for each station will be 4 minutes.

i. **Laboratory OSPE (Lab OSPE):** This section will consist of stations focused on practical (hands on performance) components from core subject areas, each station carries 5 marks.

ii. **Integrated OSPE (I OSPE):** This section will include stations, from each core subject, emphasizing horizontal and vertical integration, each station carries 5 marks

i. **Objective Structured Clinical Examinations (OSCE):** This section comprises of stations, dedicated to Early Clinical Exposure (ECE) , Simulated Patients (SP), models, ALPHA and clinical component of core subjects each station carries 5 marks.

ii. **Objective Structured Viva Examinations (OSVE):** This section will consist of table viva for each core subject. Students will be evaluated by internal and external examiner using a structured marking rubric, with each viva carries15 marks.

First year MBBS	**Number of LabOSPE Stations**	**Number of iOSPE Stations**	**Number of OSCE Stations**	**Number of table VIVA**
Block -I	5	3	4	3
Block -II	5	3	4	3
Block -III	4	3	5	3

Second Year MBBS	Number of LabOSPE Stations	Number of iOSPE Stations	Number of OSCE Stations	Numbe r of table VIVA
Block -I	4	3	5	3
Block -II	5	3	4	3
Block -III	5	3	4	3

- **Annual Examination Eligibility Criteria:** Eligibility to appear in Annual Professional will be as per RMU Assessment Policy approved by the Academic Council and Syndicate.

- **Passing Criteria:** A student will be declared pass in a block assessment if he/she scores 50% and above marks in each block assessment component (Theory and Practical) and 50% and above marks in each Core Subject (Anatomy, Physiology C Biochemistry).

- **Supplementary Examination Criteria:** The student who fails in any component of a block assessment will have to appear in the supplementary examination of the entire block.

Table of Abbreviation

CIA	Continuous Internal Assessment
I-OSPE	Integrated OSPE
LabOSPE	Laboratory Objective Structured Practical Examination
OSCE	Objective Structured Clinical Examinations
OSVE	Objective Structured Viva Examinations
ECE	Early Clinical Exposure
ALPHA	(Artificial Intelligence, Leadership, Professionalism, Humanities C Arts
GEC	General Education Cluster
K	Knowledge

Annual Assessment Plan of First Year MBBS 2025 (Batch 52)

- Total First Professional Marks: 900
- Continuous Internal Assessment (30%) =270 Marks
- Annual Marks: (70%) =630 Marks

A: Original Distribution of CIA (Continuous Internal Assessment) Marks (270 Marks)

Blocks	Subjects	Total marks	Module 1	Module 2	Total marks
Block 1 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
Block 2 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
Block 3 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
				Total marks	**270 Marks**

B: Extrapolated marks to be calculated from Summative assessments throughout the Academic Year 2025

Blocks	Modules	Anatomy	Physiology	Biochemistry	Total
Block 1 1470 Marks	Module 1	200	200	200	600
	Module 2	200	200	200	600
	Block Exam	90	90	90	270
	Total	**490**	**490**	**490**	**1470**
Block 2 1470 Marks	Module 1	200	200	200	600
	Module 2	200	200	200	600
	Block Exam	90	90	90	270
	Total	**490**	**490**	**490**	**1470**

Block 3 1470 Marks	Module 1	200	200	200	600
	Module 2	200	200	200	600
	Block Exam	90	90	90	270
	Total	**490**	**490**	**490**	**1470**
Total Marks		**1470**	**1470**	**1470**	**4410**

Note:

- Total Operational marks =4410 converted to 270 marks and per block 1470 marks will be converted to 90 marks for Annual professional marks calculation.
- The CIA should be submitted to Examination cell in round off values.
- Evidence of CIA Marks along with papers should be retained in the department that can be reproduced on request by examination cell if required.

Reference: https://www.uhs.edu.pk/downloads/2k23mbbscurriculumv20.pdf

Annual First professional Examinations 2025

- Total First Professional Marks: 900
- Continuous Internal Assessment (30%) =270 Marks
- Annual Marks: (70%) =630 Marks

A: First Professional Examination (70%)

A: First Professional Examination (70%) Total marks = 630 Marks		
Subjects	**% Weightage of subjects**	**Marks distribution as per weightage**
Anatomy	35%	218 Marks
Physiology	30%	192 Marks
Biochemistry	23%	137 Marks
Integrated Subjects • Community Medicine C Public Health/Research • Behavioural Sciences • Pathology • Pharmacology • Radiology • Family Medicine • Surgery • Medicine • Gynae C Obs • Orthopedics • Pediatrics • Surgery • Opthalmology • Otorhinolaryngology	11%	73 Marks

• Early Clinical Exposure • ALPHA and General Education Cluster (GEC)	2%	10 Marks
Total Marks		**630 Marks**

B: Blockwise Distribution of Marks

Total Annual Professional Marks (70%)	**BLOCK 1 Marks**	**BLOCK 2 Marks**	**BLOCK 3 Marks**	**Total Marks**
630 Marks	210 Marks	210 Marks	210 Marks	630 Marks

- Reference: https://www.uhs.edu.pk/downloads/2k23mbbscurriculumv20.pdf

C: Subject Wise Marks Breakup In Blocks

Subjects	**Block 1**	**Block 2**	**Block 3**	**Total Marks**
Anatomy	85 Marks	78 Marks	55 Marks	218 Marks (35%)
Physiology	45 Marks	64 Marks	83 Marks	192 Marks (30%)
Biochemistry	53 Marks	39 Marks	45 Marks	137 Marks (23%)
Integrated Subjects	27 Marks	29 Marks	27 Marks	83 Marks (13%)

D: Subject Wise Distribution of Marks for First Year MBBS

Block	Subjects	Theory	Practical	Total marks	Total marks Core Subject + Integrated Subjects
Block 1 210 Marks	Anatomy	45 marks	40 marks	85 marks	183+27 = 210 marks
	Physiology	20 marks	25 marks	45 marks	
	Biochemistry	23 marks	30 marks	53 marks	
	Total	88	95	**183 marks**	
	Integrated Subjects			27 Marks	
	• Communit y Medicine /Research	4 Marks			
	• Behavioural Sciences	2 Marks			
	• Pathology	2 Marks			
	• Pharmacology	3 Marks			
	• Radiology	1 Marks			
	• Gynae C Obs	1 Marks			
	• Medicine	1 Marks			
	• Family Medicine	1 Marks			
	• Paediatrics	1 Marks			
	• Surgery	1 Marks			
	• ECE		5 Marks		
	• ALPHA and GEC		5 Marks		
Total marks		**183+27 = 210 marks**			

Block	Subjects	Theory	Practical	Total marks	Total marks Core Subject + Integrated Subjects
Block 2	Anatomy	38 marks	40 marks	78 marks	181+29 =
	Physiology	34 marks	30 marks	64 marks	
	Biochemistry	14 marks	25 marks	39 marks	
	Total	86	95	**181 Marks**	

210 Marks	**Integrated Subjects**			**29 Marks**	**210 marks**
	• Community Medicine /Research	4 Marks			
	• Family Medicine	1 Marks			
	• Orthopedics	2 Marks			
	• Radiology	2 Marks			
	• Medicine	3 Marks			
	• Gynae C Obs	1 Marks			
	• Behavioural Sciences	4 Marks			
	• Pathology	2 Marks			
	• ECE		5 Marks		
	• ALPHA and GEC		5 Marks		
Total marks		**181+29 = 210 marks**			

Block	**Subjects**	**Theory**	**Practical**	**Total marks**	**Total marks Core Subject + Integrated Subjects**
Block 3	Anatomy	25 marks	30 marks	55 marks	**183+27 = 210 marks**
	Physiology	48 marks	35 marks	83 marks	
	Biochemistry	15 marks	30 marks	45 marks	
	Total	88	95	**183 marks**	
	Integrated Subjects			**27 Marks**	
	• Community Medicine	3 Marks			
	• Behavioural Sciences	2 Marks			
	• Medicine	2 Marks			
	• Family medicine	1 Marks			
	• Gynae C Obs	1 Marks			
	• Radiology	1 Marks			
	• Pediatrics	1 Marks			
210 Marks	• Otorhinolaryngology	1 Marks			
	• Opthalmology	1 Marks			
	• Pathology	2 Marks			

• Pharmacology	2 Marks		
• ECE		5 Marks	
• ALPHA and GEC		5 Marks	
Total marks	**183+27 = 210 marks**		
GRAND TOTAL MARKS	**630 Marks**		

E: Block Wise Distribution Of Marks For First Year MBBS (Batch 52) (Annual Professional Marks + CIA)

Subject	**Theory**			**Practical**			**Total Marks**
	Component	**No of Items**	**Marks**	**Component**	**No of Items**	**Marks**	
Block 1 **(Foundation s MSK-1)** **Total Annual marks=210**	Section I- MCQ Section II- SEQ 6	75	75 30	LabOSPE iOSPE OSCE OSVE	5 3 4 3	25 15 20 45	210
CIA = 90 Marks	Continuous Internal Assessment (30%)		45	Continuous Internal Assessment (30%)		45	90
Total Annual marks+ **CIA =210+90= 300**	**Total Marks**		**150**	**Total Marks**		**150**	**300**
Block 2 **(MSK-2 Blood and Immunity** **Total Annual marks=210**	Section I- MCQ Section II- SEQ	75 6	75 30	LabOSPE iOSPE OSCE OSVE	5 3 4 3	25 15 20 45	210
CIA = 90 Marks	Continuous Internal Assessment (30%)		45	Continuous Internal Assessment (30%)		45	90
Total Annual marks+ **CIA =210+90= 300**	**Total Marks**		**150**	**Total Marks**		**150**	**300**
Block 3 **(CVS Respiration)** **Total Annual**	Section I- MCQ Section II-	75 6	75 30	LabOSPE iOSPE OSCE	4 3 5	20 15 25	210

marks=210	SEQ			OSVE	3	45	
CIA = G0 Marks	Continuous Internal Assessment (30%)		45	Continuous Internal Assessment (30%)		45	90
Total Annual marks + CIA =210+G0= 300	**Total Marks**		**150**	**Total Marks**		**150**	300
						Grand Total Marks	**G00**

F: 1st Professional Examination 2025 (Batch 52)

Block 1 Assessment Breakup
(Foundation & MSK-1 Modules)

Themes	Discipline	Theory				Practical (OSPE)			OSVE	Marks	%	Total Marks per subject	
		No of MCQs (1 marks each)	No of SEQs (5 marks each)	Marks	%	No of Stations of LabOSPE (5 marks each)	No of Stations of iOSPE (5 marks each)	No of Stations of OSCE (5 marks each)	OSVE (15 Marks)			Marks	%
Core s Horizontally Integrated Subjects	Anatomy C Applied /Clinical	30	3	45	30	3	1	1	1	40	32	85	40
	Physiology C Applied/Clinical	10	2	20	26	1	1	-	1	25	29	45	21
	Biochemistry C Applied/clinical	18	1	23	26	1	1	1	1	30	29	53	25
Vertically Integrated Subjects	Community Medicine C Public Health/Research	4	-	3	4	-	-	-	-	-	-	4	14
	Behavioural Sciences	2	-	1	2	-	-	-	-	-	-	2	
	Pathology	2	-	2	2	-	-	-	-	-	-	2	
	Radiology	1		1								1	
	Gynae C Obs	1		1								1	
	Medicine	1		1								1	
	Family Medicine	1		1								1	
	Paediatrics	1		1								1	
	Surgery	1		1								1	
	Pharmacology	3	-	3	3	-	-		-	-	-	3	

Spirally Integrated Subjects	ECE	-	-	-		-	-	1	-	5	5	5	
	ALPHA and GEC	-	-	-		-	-	1	-	5	5	5	
Total		75	6x5=30	105	100	5x5=25	3x5=15	4x5=20	3x15=45	105	100	210	100
Total		105				105					105+105=210		

G: 1st Professional Examination 2025 (Batch 52)

Block 2 Assessment

MSK-2 & Blood/Immunity Modules

Theme	Subject	Theory			Practical			OSVE		Total Marks per subject	
		No of MCQs (1 marks each)	No of SEQs (5 marks each)	Marks	No of Stations of LabOSPE (5 marks each)	No of Stations of iOSPE (5 marks each)	No of Stations of OSCE (5 marks each)	OSVE (15 Marks)	Marks	Total Marks	%
Cores Horizontally Integrated Subjects	Anatomy C Applied /Clinical	23	3	38	3	1	1	1	40	78	37
	Physiology C Applied/Clinical	24	2	29	1	1	1	1	30	64	30
	Biochemistry C Applied/clinical	9	1	14	1	1	-	1	25	39	18
Vertically Integrated Subjects	Community Medicine C Public Health	4	-	4	-	-	-	-	-	4	15
	Behavioural Sciences	4	-	4	-	-	-	-	-	4	
	Pathology	2	-	2	-	-	-	-	-	2	
	Family Medicine	1								1	
	Orthopedics	2								2	
	Radiology	2								2	
	Medicine	3								3	

	Gynae C Obs	1								1	
Spirally Integrated Subjects	ECE	-	-	-	-	-	1	-	5	5	
	ALPHA and GEC	-	-	-	-	-	1	-	5	5	
Total		**75**	**6x5=30**	**105**	**5x5=25**	**3x5=15**	**4x5=20**	**3x15=45**	**105**	**210**	**100**
Total		**105**			**105**					**105+105=210**	

H: 1st Professional Examination 2025 (Batch 52)
Block 3 Assessment
CVS Respiratory Modules

Themes	**Discipline**	**Theory**			**Practical**			**OSVE**		**Total Marks per subject**	
		No of MCQs (1 marks each)	**No of SEQs (5 marks each)**	**Marks**	**No of Stations of LabOSPE (5 marks each)**	**No of Stations of iOSPE (5 marks each)**	**No of Stations of OSCE (5 marks each)**	**OSVE (15 Marks)**	**Marks**	**Marks**	**%**
Cores Horizontally Integrated Subjects	Anatomy C Applied /Clinical	15	2	25	1	1	1	1	30	55	26
	Physiology C Applied/Clinical	33	3	48	2	1	1	1	35	83	40
	Biochemistry C Applied/clinical	10	1	15	1	1	1	1	30	45	21
Vertically Integrated Subjects	Community Medicine C Public Health	2	-	2	-	-	-	-	-	2	13
	Behavioural Sciences	2	-	2	-	-	-	-	-	2	
	Pathology	2	-	2	-	-	-	-	-	2	
	Medicine	2		2						2	
	Family medicine	1		1						1	
	Gynae C Obs	1		1						1	
	Radiology	1		1						1	
	Pediatrics	1		1						1	
	Otorhinolaryngology	1		1						1	
	Opthalmology	1		1						1	
	Pathology	2		2						2	

	Pharmacology	1	-	1	-	-	-	-		1	
Spirally Integrated Subjects	ECE	-	-	-	-	-	1	-	5	5	
	ALPHA and GEC	-	-	-	-	-	1	-	5	5	
Total		**75**	**6x5=30**	**105**	**4x5=20**	**3x5=15**	**5x5=25**	**3x15=45**	**105**	**210**	**100**
Total		**105**			**105**					**105+105=210**	

SECTION - VI

Time Table

Integrated Spiral Clinically Oriented Modular Curriculum for First Year MBBS

Foundation Module - I Time Table

First Year MBBS

Session 2025

Batch- 52

Foundation Module - I Team

Module Name	:	Foundation Module - I
Duration of module	:	06 Weeks
Coordinator	:	Dr. Tayyaba Qureshi
Co-coordinator	:	Dr. Zenera Saqib
Reviewed by	:	Module Committee

Module Committee		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Umar
2.	Director DME	Prof. Dr. Ifra Saeed
3.	Convener Curriculum	Prof. Dr. Naeem Akhter
4.	Chairperson Anatomy & Dean Basic Sciences	Prof. Dr. Ayesha Yousaf
5.	Additional Director (Assessment) DME	Dr. Arsalan Manzoor Mughal
6.	Chairperson Physiology	Prof. Dr. Samia Sarwar
7.	Chairperson Biochemistry	Dr. Aneela Jamil
8.	Focal Person Anatomy First Year MBBS	Asso. Prof. Dr. Mohtashim Hina
9.	Focal Person Physiology	Dr. Sidra Hamid
10.	Focal Person Biochemistry	Dr. Aneela Jamil
11.	Focal Person Pharmacology	Dr. Zunera Hakim
12.	Focal Person Pathology	Dr. Asiya Niazi
13.	Focal Person Behavioral Sciences	Dr. Saadia Yasir
14.	Focal Person Community Medicine	Dr. Afifa Kulsoom
15.	Focal Person Quran Translation Lectures	Dr. Uzma Zafar
16.	Focal Person Family Medicine	Dr. Sadia Khan

Module Task Force Team		
1.	Coordinator	Dr. Tayyaba Qureshi (Assistant Professor of Anatomy)
2.	DME Focal Person	Dr. Farzana Fatima
3.	Co-coordinator	Dr. Zenera Saqib (Demonstrator of Anatomy)
4.	Co-Coordinator	Dr. Uzma Kiyani (Senior Demonstrator of Physiology)
5.	Co-coordinator	Dr. Raja Khalid Yaqoob (Demonstrator of Biochemistry)

DME Implementation Team		
1.	Director DME	Prof. Dr. Ifra Saeed
2.	Implementation Incharge 1st & 2nd Year MBBS	Dr. Arsalan Manzoor Mughal Dr. Farzana Fatima
3.	Assistant Director DME	Dr. Farzana Fatima
4.	Editor	Muhammad Arslan Aslam

Discipline Wise Details of Modular Content

Integration					
Themes					
Block	**Module**	**General Anatomy**	**Embryology**	**Histology**	**Gross Anatomy**
I	• Anatomy	Introduction to General Anatomy	General Embryology • Introduction to Human Development • Oogenesis • Spermatogenesis • Female Reproductive Cycles • Ovulation and Fertilization • Cleavage and Blastocyst Formation • Development of Mammary Gland	General Histology • Types of Epithelium • Specialization of Apical Cell Surface • Intercellular Junctions and Adhesions • Glandular Epithelium • Mammary Gland	• Anatomicomedical Terminologies I (position & planes) • Anatomicomedical Terminologies II (Anatomical Terms and Axis of Movements) • Anatomicomedical Terminologies III (Cell and Tissues) • Anatomicomedical Terminologies IV (Skin & Body Systems) • Clavicle • Scapula • Humerus • Anterior Axioappendicular Muscles • Posterior Axioappendicular Muscles • Axilla • Brachial Plexus • Brachial Plexus Injuries • Breast • Sternoclavicular and Acromiclavicular Joints • Radiograph and Surface Anatomy of Axioappendicular Region
	• Biochemistry	• Cell and Cell Organelles, Cell Membrane and Transport Across Cell Membrane, Physicochemical Properties, Enzymes, Cancer, Nucleic Acid Chemistry, Genetics			
	• Physiology	• Functional Organization of The Human Body and Control of the “Internal Environment • The Cell and Its Functions • Genetic Control of Protein Synthesis, Cell Function, And Cell Reproduction • Transport of Substances Through the Cell Membrane			

	Orientation Sessions	
	• Welcome Address by VC, Introduntion to RMU • Introduction to Department of Medical Education & Integrated Modular System. • Assessment Model of RMU And Continuous Internal Assessment • Research Model of RMU (IUGRC), Biomedical Ethics, & Family Medicine • Introduction to Digital Services RMU • Introduction to Anatomy Department • Introduction to Physiology Department • Introduction to Biochemistry • Introduction to Behavioral Sciences • Intorduction to Pharmacology • Introduction to Pathology • Introduction to Community Medicine & Research Model of RMU	
	Spiral Courses	
	• Bioethics & Professionalism	• Introduction to history of medical ethics • Leadership Professionalism (DME)
	• Family Medicine	• Introduction to Family Medicine & its application in health care system
	• Integrated Under Graduate Research Innovation (IUGRC)	• Research I Introduction of health research process • Research II characteristic of research process • Research III Basis of ethics in health research • Research IV Basics of ethics in medical research
	• Behavioral Sciences	• Introduction to Behavioral Sciences • Stress in Medical Students & its Managment
	• Information Technology (IT)	• How to use Higher Education Commission (HEC) digital library.
	• Community Medicine (Life Style and Prevention)	• Healthy Lifestyle: A Foundation for Medical Professionals
	Vertical Integration	
	• Pathology	Clinically content relevant to Foundation Module - I • Introduction to Pathology • Cellular Responses to Injury • Intracellular Accumulations • Pigments • Free Radicals/ Reactive Oxygen Species (Ros). • Oxidative StressIrreversible Injury.

		• NecrosisApoptosis (Irreversible Injury) • Genetic Disorders
	• Pharmacology	• Introduction to Pharmacology • Pharmacokinetic processes • Receptors and signal transduction processes
	• Community Medicine	• Introduction to Community Medicine & Research Model of RMU • Immunization & Vaccination • Health Determinants & Indicators • Life Style Medicine • Health Education & Communication
	• Medicine	• Introduction to Medicine and History of Medicine • Chromosomal Abrassions
	• Surgery	• History taking & its importance • CA Breast
	• Obstetrics & Gynaecology	• Infertility • Invitro Fertilization
	• Peadiatrics	• Medical Genetics & Dysmorphology
Early Clinical Exposure (ECE)		
	Departments • Medicine & Allied • Surgery and Trauma • Emergency Department	Skill - 1: Hand Washing Skiill – 2: Wearing Gloves Skill – 3: Providing Basic Life Support in Adults Skill – 4: Scrubbing for Operation Theatre
Clinical Relevance		
	• Medical Ethics • Genetic Disorders • Understanding cellular and molecular mechanisms in disease (e.g., cancer and diabetes) • Importance of homeostasis in maintaining normal physiological function (e.g., dehydration and acid-base imbalances) • Application of medical ethics in real-life scenarios, such as patient confidentiality • Effective doctor-patient communication in history-taking and empathy	

Categorization of Modular Content of Anatomy:

Category A*	Category B**		Category C ***			
General Embryology	**General Histology**	**General Anatomy**	**Demonstrations / SGD**	**CBL**	**Practical's**	**Self-Directed Learning (SDL)**
• Introduction to human development • Oogenesis • Spermatogenesis • Female reproductive cycles • Ovulation and fertilization • Cleavage and blastocyst formation • Development of mammary gland	• Types of epithelium • Specialization of apical cell surface • Intercellular junction and adhesions • Glandular epithelium • Mammary gland	• Introduction to General Anatomy	• Anatomicomedical terminologies I (planes & positon) • Anatomicomedical terminologies II (Anatomical terms and axis of movements) • Anatomicomedical terminologies III (Cell and tissues) • Anatomicomedical terminologies IV (Skin & Body system) • Clavicle • Scapula • Humerus • Anterior Axioappendicular muscles • Posterior Axioappendicular muscles • Axilla • Brachial plexus • & injuries • Breast • Sternoclavicular and acromioclavicular joints • Radiograph / Cross Section and surface anatomy of axioappendicular region	• Fracture of Clavicle • Brachial plexus injuries	• Introduction to microscope, Slide preparation, artifact • Simple epithelium, • Stratified epithelium • Mammary gland	• Green Stick Fracture of Clavicle • Applied Anatomy of Scapula • Applied Anatomy of Anterioraxioappendicular muscles • Applied Anatomy of Posterior Axioappendicular muscles • Applied Anatomy of Axilla • Injuries of Brachial Plexus • Applied Anatomy of Breast

Category A*: By Professors

Category B:** By Associate & Assistant Professors

Category C*:** By Senior Demonstrators & Demonstrators

Teaching Staff / Human Resource of Department of Anatomy

Sr. #	Designation of Teaching Staff / Human Resource	Total Number of Teaching Staff
1.	Professor of Anatomy department	01
2.	Associate professor of Anatomy department	02
3.	Assistant professor of Anatomy department (AP)	05
4.	Demonstrators of Anatomy department	08

Contact Hours (Faculty)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	12 * 1= 12 hours
2.	Small Group Discussions (SGD)	32 hours
3.	Case Based Learning (CBL)	2* 1 = 2 hours
4.	Practical / Skill Lab	1.6 * 20 = 32 hours
5.	Supervised Self-Directed Learning (SSDL)	2 * 1 = 2 hours

Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	12 hours
2.	Small Group Discussions (SGD)	32 hours
3.	Case Based Learning (CBL)	2 hours
4.	Practical / Skill Lab	6.4 hours
5.	Supervised Self-Directed Learning (SSDL)	2 hours
6.	Self-Directed Learning (SDL)	7 hours

Categorization of Modular Content of Physiology:

Category A*	**Category B****	**Category C*****				
LGIS	LGIS	PBL	CBL	Practical's	SGD	SDL
Introduction To Physiology Department (By Prof Dr. Samia Sarwar)	Concept of body fluids & internal environment (By Dr. Sidra Hamid)		Body Fluid Compartment, Cell Membrane and Cytoskeleton, Down's Syndrome	Introduction to Microscope Introduction to Wintrobe and Westergen tube Apparatus identification (Introduction to Neubauer's chamber, Red Blood Cell (RBC) pipettes& White Blood Cell (WBC) pipette 4. Apparatus identification (Introduction to centrifuge machine)	Functional Organization of Human Body and Cell Physiology Cellular Control Mechanism, Cell Cycle and programmed cell death / apoptosis	Concept of body fluids & internal environment Genetics, Transcription and Translation Receptor and signal transduction Structure of Nucleus, Ribosomes and Cell Division Cellular Control Mechanism, Cell Cycle and programmed cell death / apoptosis
Homeostasis Control System- I (Negative Feedback System, Concept Of Error And Gain) (By Prof Dr. Samia Sarwar)	Intracellular communication and cell junction (By Dr. Sidra Hamid)					
Homeostasis Control System- II (positive feedback, and concept of feed forward, adaptive control and vicious cycle) (By Prof Dr. Samia Sarwar)	Receptor and signal transduction (By Dr. Sidra Hamid)					
Structure of Nucleus, Ribosomes and Cell Division (By Prof Dr. Samia Sarwar)	Active Transport- Ii (Secondary Active Transport) (Dr. Sheena Tariq)					
Cell membrane & classification of cell organelles (by Dr. Faizania)						
Cell organelles & related cell function – I (by Dr. Faizania)						
Cell organelles & related cell function – II (by Dr. Faizania)						
Genetics, Transcription and Translation (by Dr. Faizania)						
Active Transport- I (Primary Active Transport) (by Dr. Faizania)						

Category A*: By Professors

Category B:** By Associate & Assistant Professors

Category C*:** By Senior Demonstrators & Demonstrators

Teaching Staff / Human Resource of Department of Physiology

Sr. #	Designation Of Teaching Staff / Human Resource	Total Number of Teaching Staff
1.	Professor of physiology department	01
2.	Associate professor of physiology department	01
3.	Assistant professor of physiology department (AP)	01
4.	Demonstrators of physiology department	07
5.	Residents of physiology department (PGTs)	06

Contact Hours (Faculty) & Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LECTURES)	2* 18 =36 hours
2.	Small Group Discussions (SGD)/CBL	1hr 40 mint* 20= 33 hrs.& 20 mint + 1hr=34hrs & 20 minutes
3.	Problem Based Learning (PBL)	---
4.	Practical / Skill Lab	1hour 40 minutes* 20= 33 hours and 20 minutes
5.	Self-Directed Learning (SDL)	1hour * 8=8 hours

Categorization of Modular Content of Department of Biochemistry:

Category A*	Category B**	Category C***			
LGIS	**LGIS**	**PBL**	**CBL**	**Practical's**	**SGD**
Cell membrane	Cell & cell organelles		Enzymes PCR (Polymerase Chain Reaction)	Introduction to glassware (pipetting)	Cell & Cell Membrane
Transport across cell membrane	Physicochemical aspects			Introduction to Lab Equipment	Physicochemical Aspects of cell
	Water & PH			Surface Tension Emulsion	
Nucleic acid Chemistry	Cancer			Adsorption Tonicity	
Replication	Enzymes				
Transcription					
Translation					
Mutation					
Recombinant DNA/ PCR					

Category A*: By Assistant Professor & Senior Demonstrators with Postgraduate Qualification

Category B:** By Senior Demonstrators

Category C*:** By Senior Demonstrators & Demonstrators

Teaching Staff / Human Resource of Department of Biochemistry

Sr. #	Designation Of Teaching Staff / Human Resource	Total Number Of Teaching Staff
1	Assistant professor of biochemistry department (AP)	01
2	Demonstrators of biochemistry department	07

Contact Hours (Faculty) & Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours (Faculty)	Total Hours (student)
1.	Large Group Interactive Session (LECTURES)	2 * 11 = 21 +1 =22 hours	11
2.	Small Group Discussions (SGD)	6 * 5 = 30 hours	1.5 x 4 = 6
3.	Problem Based Learning (PBL)	2 * 1 = 2 hours	02
4.	Practical / Skill Lab	6 * 5 =30	15x 4 = 6
5.	Self-Directed Learning (SDL)	1 * 8 = 8 hours	08

Time Table for Foundation Module - I (First Week)
(17-02-2025 to 22-02-2025)

Date/Day	8:30 AM – 11:00 AM	11:00 AM – 11:40AM	11:40 AM – 12:20 PM	12:20-1:00PM		1:00-PM – 02:00 PM
17-02-2025 Monday	Welcome address by VC Introduction to RMU, Allied hospitals	Orientation to RMU Curricular Reforms				Introduction To Digital Services Of RMU
		, Introduction to Medical Education Department & Integrated Modular System	Assessment Model of RMU & Continuous Internal Assessment	Research Model of RMU (IUGRC), Biomedical Ethics Family Medicine,	BREAK 12:00 –12:20PM	Introduction To LMS, CMS, MS Teams (Online Component of Curriculum)
HR		Prof. Dr. Ifra Saeed / Dr. Farzana Fatima	Dr. Arsalan Mughal	Dr. Sadia Khan & Dr Khaula Noreen		Director IT Hafi Shahid Rasool
Venue	LATIF AUDITORIUM					LATIF AUDITORIUM
18-02-2025 Tuesday	**8:00 AM – 9:00 AM**	**9:00 AM – 10:00 AM**	**10:00 AM – 11:00 AM**	**11:00-12:00** / **12:20 PM – 1:00 PM**		**1:00-2:00 PM**
	Introduction to Anatomy Department	Introduction to Physiology Department	Introduction to Biochemistry Department	**BEHAVIORAL SCIENCES(LGIS)** / Introduction to Behavioral Sciences	**PHARMACOLOGY** / Introduction to Pharmacology	Anatomy Bio data forms, Physiology & Biochemistry bio data forms
HR	Prof. Dr. Ayesha Yousaf (HOD & DEAN) **	Prof. Dr. Samia Sarwar **	Dr. Aneela**	Prof. Dr. Asad Nizami	Dr Arsheen	Dr. Fareed, Dr. Kashif Dr. Ali Raza
Venue	Lecture Theatre Complex Hall No 2					Lecture Theatre Complex Hall No 2
19-02-2025 Wednesday	**8:00 AM- 10:00AM**	**10:00-11:00**	**11:00 AM – 12:00 AM**		**12:20 AM – 1:00 PM**	**1:00-2:00 PM**
	DISSECTION / SGD	**PATHOLOGY**	**PHYSIOLOGY (LGIS)**		**COMMUNITY MEDICINE**	**BIOCHEMISTRY (LGIS)**
	Anatomicomedical terminologies I (positions and planes)	Introduction to Pathology	Cell Physiology & homeostasis / Concept of body fluids & Internal environment		Introduction to Community Medicine & Research Model of RMU	Cell Organelles (1) / Cell membrane
HR	2 Assistant Professors, 4 Demonstrators 6 Batches of Students	Dr Rabbiya Khaalid (Even) / Dr Sara Rafi (Odd)	Dr. Faizania Shabir (Even) / Dr. Sidra Hamid (Odd)		Dr. Khaula Noreen	Dr. Nayab (Even) / Dr. Kashif Rauf (Odd)
20-02-2025 Thursday	**8:00 AM – 10:00 AM**	**10:00 – 11:00AM**	**11:00- 12:00PM**		**12:00 – 01:00PM**	**1:00-2:00 PM**
	DISSECTION/SGD	**BEHAVIORAL SCIENCES (LGIS)**	**PHYSIOLOGY (LGIS)**		**ANATOMY (LGIS)**	**COMMUNITY MEDICINE**
	Anatomicomedical terminologies II (Anatomical terms and axis of movements)	Stress in Medical Students & its Managment	Concept of body fluids & Internal environment / Cell Physiology & homeostasis		Embryology / Introduction to Human Development — General Anatomy / Introduction to General Anatomy	Immunization & Vaccination
HR	2 Assistant Professors, 4 Demonstrators 6 Batches of Students	Dr. Azeem Rao (Odd) / Dr. Sadia Yasir (Even)	Dr. Sidra Hamid (Even) / Dr. Faizania Shabir (Odd)		Prof. Ayesha Yousaf (Even) / Ass. Prof. Dr Arslan (Odd)	Dr. Farah Pervaiz (Even) / Dr. Asif Maqsood (Odd)
21-02-2025 Friday	**8:00 AM – 9:00 AM**	**9:00 AM – 10:00 AM**	**10:00 AM – 11:00 AM**		**11:00 AM – 12:00 PM**	Friday Prayers
	COMMUNITY MEDICINE	**ANATOMY LGIS**	**COMMUNITY MEDICINE (RESEARCH-I)**		**PHARMACOLOGY LGIS**	
	Health Determinants & Indicators	General Anatomy / Introduction to General Anatomy — Embryology / Introduction to Human development	Introduction to Health Research Process and Researcher		Pharmacokinetic processes	
HR	Dr. Farah Pervaiz (Odd) / Dr. Asif Maqsood (Even)	Ass. Prof. Dr Arsalan (Even) / Prof. Dr. Ayesha Yousaf (Odd)	Dr. Rizwana Shahid (Odd) / Dr. Abdul Qudoos (Even)		Dr. Saba	
22-02-2025 Saturday	**8:00 AM – 9:00 AM** **9:00 AM – 10:00 AM**	**10:00 AM – 11:00 AM**	**11:00 AM – 12:00 AM**		**12:00 AM – 1:00 PM**	**1:00 - 2:00 PM**
	DISSECTION/SGD	**PATHOLOGY (LGIS)**	**PHARMACOLOGY LGIS**		**BIOCHEMISTRY (LGIS)**	**COMMUNITY MEDICINE**
	Anatomicomedical terminologies III (Cell and tissues)	Cellular response to Injury	Receptors and signal transduction processes		Cell membrane / Cell Organelles-I	Life Style Medicine
HR	2 Assistant Professors, 4 Demonstrators 6 Batches of Students	Dr Sara Rafi (Even) / Dr Rabbiya Khaalid (Odd)	Dr. Memuna		Dr. Kashif Rauf (Even) / Dr. Nayab (Odd)	Dr. Farah Pervaiz (Even) / Dr. Asif Maqosod (Odd)

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion (Biochemistry and Physiology)

Sr. No	Batch	Roll No.
1.	**A**	01-70
2.	**B**	71-140
3.	**C**	141-210
4.	**D**	211-280
5.	**E**	281-onwards

Topics for Skill Lab with Venue

- Arterial Blood Gasses (Biochemistry practical) venue- Biochemistry Laboratory
- (Physiology –practical) Physiology Laboratory

Schedule for Practical

Day	Histology Practical		Biochemistry Practical			Physiology Practical			Biochemistry SGD	
	Batch	**Teacher Name**	**Batch**	**Teacher Name**		**Batch**	**Teacher Name**		**Batch**	**Teacher Name**
Monday	**C**	Supervised by HOD	**C**	Dr. Rahat	Supervised by HOD	**E**	Dr. Ali /Dr. Afsheen	Supervised by HOD	**D**	Dr. Uzma
Tuesday	**D**		**D**	Dr. Romessa		**A**	Dr. Sheena		**E**	Dr. Almas
Wednesday	**E**		**A**	Dr. Uzma		**B**	Dr. Uzma		**A**	Dr. Romessa
Thursday	**B**		**E**	Dr. Almas		**D**	Dr. Fahd		**C**	Dr. Romessa
Saturday	**A**		**C**	Dr. Romessa		**C**	Dr. Farah		**B**	Dr. Rahat

Topics for SGDs / CBL with Venue

- Biochemistry CBL-Acid base imbalance (Lecture Hall 03)
- Physiology CBL Crib Death. (Lecture Hall 05)

Table No. 2 Batch Distribution with Venues and Teachers Name for Problem Based Learning (PBL) Sessions

Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	**A1**	(01-35)	Lecture Hall no.05 Physiology	Dr. Sana Latif (Demonstrator Biochemistry)	6.	**C2**	(176-210)	Lecture Hall no.04 (Basement)	Dr. Nazia (Demonstrator Physiology)
2.	**A2**	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Farah ali Shah (Demonstrator of Physiology)	7.	**D1**	(210-245)	Lecture Hall no.02 (Basement)	Dr. Jawad (Demonstrator Physiology)
3.	**B1**	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Nayab Ramzan (APWMO Biochemistry)	8.	**D2**	(246-280)	Conference Room (Basement)	Dr. Rahat (APWMO Biochemistry)
4.	**B2**	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Ali Raza (Senior Demonstrator of Anatomy)	9.	**E1**	(281-315)	New Lecture Hall no.01	Dr. Uzma Zafar (APWMO Biochemistry)
5.	**C1**	(141-175)	Lecture Hall no.05 (Basement)	Dr. Farhat (PGT Physiology)	10	**E2**	(315 onwards)	Lecture Hall no.04	Dr. Najam (PGT Physiology)

Table No. 3 Venues for Large Group Interactive Session (LGIS)

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 03
Even Roll Number	New Lecture Hall Complex Lecture Theater # 02

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections				
Batches	**Roll No**	**Subgroup**	**Anatomy Teacher**	**Venue**
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tayyaba Qureshi (Assistant Professor)	New Lecture Hall Complex 02
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Sumyyia Bashir (Assistant Professor)	New Lecture Hall Complex 3
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Zeneara Saqib (Demonstrator)	Anatomy Lecture Hall 03
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Qurat ul Ain (Senior. Demonstrator)	Anatomy Lecture Hall 04
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sajjad Hussain (Senior. Demonstrator)	New Lecture Hall Complex 04
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No (331 – 345) F4: Roll No (346 – onwards)	Dr. Ali Raza (Senior. Demonstrator)	New Lecture Hall Complex 01
Supervised by Prof. Dr. Ayesha Yousaf				

Table No. 5 Batch Distribution and Venues for Physiology Small Group Discussion SGDs				
Batches	**Roll No**	**Subgroup**	**Physiology Teacher**	**Venue**
A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Sheena Tariq (APWMO)	Physiology Lecture Hall 5
B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Uzma Kiyani (Senior Demonstrator)	Physiology Lecture Hall 5
C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Farah Shah (Demonstrator)	Physiology Lecture Hall 5
D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Nazia (Demonstrator)	Physiology Lecture Hall 5
E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Ali Zain / Dr. Afsheen (P. G Trainee)	Physiology Lecture Hall 5
Supervised by Prof. Dr. Samia Sarwar				

Time Table for Foundation Module - I (Second Week)
(24-02-2025 to 01-03-2025)

Date/ Day	8:00 AM – 9:00 AM	9:00 AM – 09:50 AM	9:50AM – 10:10AM	10:10 AM – 11:00 AM	11:00 AM – 11:50 AM	11:50 AM - 12:20 PM	12:20 PM - 02:00PM	Home Assignment
24-02-2025 Monday	**DISSECTION/ SGD** Anatomicomedical Terminologies IV (Skin and body systems)		Break	**PHYSIOLOGY (LGIS)** Cell membrane & classification of cell organelles / Dr. Faizania Shabir (Even) Intracellular communication and cell junction / Dr. Sidra Hamid (Odd)	**PHYSIOLOGY (LGIS)** Intracellular communication and cell junction / Dr. Sidra Hamid (Even) Cell membrane & classification of cell organelles / Dr. Faizania Shabir (Odd)	Break	**Practical & SGD** Topics& Venue mentioned at the end (Refer to table no. 1)	SDLPhysiology Homeostasis
25-02-2025 Tuesday	**DISSECTION/ SGD** Clavicle	**ANATOMY CBL** Fracture of Clavicle (Refer to table no. 1)		**PHYSIOLOGY SGD** Concept of Body Fluid and Internal Environment Refer to Table No.3	**PHYSIOLOGY (LGIS)** Cell organelles& cell function - I / Dr. Faizania Shabir (Even) Receptor and signal transduction / Dr. Sidra Hamid (Odd)		**Practical & SGD** Topics& Venue mentioned at the end (Refer to table no. 1)	SDLPhysiology Homeostatic control mechanism
26-02-2025 Wednesday	**DISSECTION/ SGD** Scapula	**SUPERVISED SDL** Scapula Anastomosis & its Clinical Significance		**COMMUNTIY MEIDICNE (RESEARCH-II)** Characteristics of Research Process and Health Research Process Dr. Rizwana Shahid (Odd) / Dr. Abdul Qudoos (Even)	**SURGERY** History taking & its importance Dr. Asad Amir (Even) / Dr. Hira (Odd)		**Practical & SGD** Topics& Venue mentioned at the end (Refer to table no. 1)	SDL Boichemistry Biomarkars and their clinical importance of Cell organelles
27-02-2025 Thursday	**COMMUNITY MEDICINE LGIS** Health Education & Communication / Dr. Farah Pervaiz (Even), Dr. Asif Maqsood (Odd)	**BIOCHEMISTRY LGIS** Cell Organelle-II / Dr. Nayab (Even) Transport across cell membrane / Dr. Kahsif Rauf (Odd)		**PHYSIOLOGY (LGIS)** Receptor and signal transduction / Dr. Sidra Hamid (Even) Cell organelles & related cell function - I / Dr. Faizania Shabir (Odd)	**GUEST LECTURE** Anti - Narcotic ANF Team		**Practical & SGD** Topics& Venue mentioned at the end (Refer to table no. 1)	SDL Biochemistry Cell Membrane Transport Across Cell Membrane

Date/ Day	8:00 AM – 9:00 AM	9:00 AM – 10:00 AM	10:00 AM – 11:00 AM	11:00 AM – 12:00 PM	
28-02-2025 Friday	**BIOCHEMISTRY LGIS** Transport across cell membrane / Dr. Kashif Rauf (Even) Cell organelle-II / Dr Nayab (Odd)	**PATHOLOGY (LGIS)** Intra Cellular accumulation Dr Rabbiya Khaalid (Even) / Dr Sara Rafi (Odd)	**COMMUNTIY MEIDICNE (RESEARCH-III)** Basic of Ethics in Health Research Dr. Rizwana Shahid (Even) / Dr. Abdul Qudoos (Odd)	**PBL 1 (SESSION-I)** PBL Team	SDL Anatomy Green Stick Fracture of Clavicle

Date/ Day	8:00 AM – 9:50 AM	9:50AM – 10:10AM	10:10 AM – 11:00 AM	11:00 AM – 11:50 AM	11:50 AM - 12:20 PM	12:20 PM - 02:00PM	Home Assignment
01-03-2025 Saturday	**DISSECTION/ SGD** Humerus	Break	**BIOCHEMISTRY (LGIS)** Water & PH / Dr. Uzma Zafar (Even) Physico chemical aspects-I / Dr. Nayab (Odd)	**COMMUNTIY MEIDICNE (RESEARCH-IV)** Basis of Ehics in Medical Research Dr. Rizwana Shahid (Odd) / Dr. Abdul Qudoos (Even)	Break	**Practical & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Applied Anatony of Scapula

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion (Biochemistry and Physiology)

Sr. No	Batch	Roll No.
1.	**A**	01-70
2.	**B**	71-140
3.	**C**	141-210
4.	**D**	211-280
5.	**E**	281-onwards

Topics for Skill Lab with Venue

- Introduction to Microscope and Preparation of Slide. Artifacts (Anatomy/Histology-practical) venue-Histology Laboratory (Dr. Kashif)
- Introduction to glass wares (Pipetting) (Biochemistry practical) venue- Biochemistry lab)
- Introduction to Microscope. (Physiology-Practical (Physiology Laboratory)

Schedule for Practical

Day	Histology Practical		Biochemistry Practical			Physiology Practical			Biochemistry SGD	
	Batch	**Teacher Name**	**Batch**	**Teacher Name**		**Batch**	**Teacher Name**		**Batch**	**Teacher Name**
Monday	**C**	Supervised by HOD	**C**	Dr. Rahat	Supervised by HOD	**E**	Dr. Ali /Dr. Afsheen	Supervised by HOD	**D**	Dr. Uzma
Tuesday	**D**		**D**	Dr. Romessa		**A**	Dr. Sheena		**E**	Dr. Almas
Wednesday	**E**		**A**	Dr. Uzma		**B**	Dr. Uzma		**A**	Dr. Romessa
Thursday	**B**		**E**	Dr. Almas		**D**	Dr. Fahd		**C**	Dr. Romessa
Saturday	**A**		**C**	Dr. Romessa		**C**	Dr. Farah		**B**	Dr. Rahat

Topics for SGDs / CBL with Venue

- Physiology small group discussion- Functional organization of human body and cell physiology venue-Lecture Hall 5
- Biochemistry small group discussion – Cell & Cell membrane- Lecture Hall 3
- Anatomy CBL: Fracture of Clavicle

Table No. 2 Batch Distribution with Venues and Teachers Name for Problem Based Learning (PBL) Sessions

Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	**A1**	(01-35)	Lecture Hall no.05 Physiology	Dr. Sana Latif (Demonstrator Biochemistry)	6.	**C2**	(176-210)	Lecture Hall no.04 (Basement)	Dr. Nazia (Demonstrator Physiology)
2.	**A2**	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Farah ali Shah (Demonstrator of Physiology)	7.	**D1**	(210-245)	Lecture Hall no.02 (Basement)	Dr. Jawad (Demonstrator Physiology)
3.	**B1**	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Nayab Ramzan (APWMO Biochemistry)	8.	**D2**	(246-280)	Conference Room (Basement)	Dr. Rahat (APWMO Biochemistry)
4.	**B2**	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Ali Raza (Senior Demonstrator of Anatomy)	9.	**E1**	(281-315)	New Lecture Hall no.01	Dr. Uzma Zafar (APWMO Biochemistry)
5.	**C1**	(141-175)	Lecture Hall no.05 (Basement)	Dr. Farhat (PGT Physiology)	10	**E2**	(315 onwards)	Lecture Hall no.04	Dr. Najam (PGT Physiology)

Table No. 3 Venues for Large Group Interactive Session (LGIS)

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 03
Even Roll Number	New Lecture Hall Complex Lecture Theater # 02

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections				
Batches	**Roll No**	**Subgroup**	**Anatomy Teacher**	**Venue**
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tayyaba Qureshi (Assistant Professor)	New Lecture Hall Complex 02
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Sumyyia Bashir (Assistant Professor)	New Lecture Hall Complex 3
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Zeneara Saqib (Demonstrator)	Anatomy Lecture Hall 03
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Qurat ul Ain (Senior. Demonstrator)	Anatomy Lecture Hall 04
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sajjad Hussain (Senior. Demonstrator)	New Lecture Hall Complex 04
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No 331 – 345) F4: Roll No (346 – onwards)	Dr. Ali Raza (Senior. Demonstrator)	New Lecture Hall Complex 01
Supervised by Prof. Dr. Ayesha Yousaf				

Table No. 5 Batch Distribution and Venues for Physiology Small Group Discussion SGDs				
Batches	**Roll No**	**Subgroup**	**Physiology Teacher**	**Venue**
A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Sheena Tariq (APWMO)	Physiology Lecture Hall 5
B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Uzma Kiyani (Senior Demonstrator)	Physiology Lecture Hall 5
C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Farah Shah (Demonstrator)	Physiology Lecture Hall 5
D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Nazia (Demonstrator)	Physiology Lecture Hall 5
E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Ali Zain / Dr. Afsheen (P. G Trainee)	Physiology Lecture Hall 5
Supervised by Prof. Dr. Samia Sarwar				

Time Table for Foundation Module - I (Third Week)
(03-03-2025 to 08-03-2025)

The Holy Month of Ramzan Observed
Timing are from 08:00AM – 01 :00PM

Date/Day	8:00am-9:20am	9:20am – 10:10am	10:10am – 10:30am	10:30am-11:10am	11:10am-11:50am	11:50am – 01:00pm	Home Assignments
03-03-2025 Monday	**DISSECTION / SGD** Anterior Axioappendicular Muscles	**SUPERVISED SDL** Anterior Axioappendicular Neurovascular Organization	**Break**	**MEDICINE** Introduction to Medicine nd History of Medicine Dr. Saleha Imran (Odd) / Dr. Ayesha Habib (Even)	**BIOCHEMISTRY LGIS** Physico chemical aspects-I / Water & PH Dr. Nayab (Even) / Dr. Uzma Zafar (Odd)	**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Intracellular communication
04-03-2025 Tuesday	**DISSECTION / SGD** Posterior Axioappendicular muscles	**SUPERVISED SDL** Posterior Axioappendicular Neurovascular Organization		**ANATOMY (LGIS)** Histology / Embryology Types of epithelium / Gametogenesis Spermatogenesis Asisstant. Prof Dr Arslan Mughal (Even) / Prof. Dr. Ayesha /Prof. Dr. Saima (Odd)	**PHYSIOLOGY (LGIS)** Cell organelles & cell function - II / Homeostasis Control System- I (Negative Feedback System, Dr. Faizania Shabir (Even) / Prof. Dr. Samia Sarwar /Dr. Uzma (Odd)	**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Receptors &signal transduction
05-03-2025 Wednesday	**BIOCHEMISTRY (LGIS)** Physico chemical aspects-II & Physico chemical aspects-III / Water & PH II / Cancer Dr. Nayab (Even) / Dr. Uzma Zafar(Odd)	**PATHOLOGY LGIS** Pigments Dr Sara Rafi (Even) / Dr Rabbiya Khaalid (Odd)		**ANATOMY LGIS** Embryology / Histology Gametogenesis Spermatogenesis / Types of Epithelium Prof. Dr. Saima (Even) / Asisstant. Prof Dr Arsalan (Odd)	**PHYSIOLOGY (LGIS)** Homeostasis Control System- I (Negative Feedback System, Concept of Error and Gain) / Cell organelles& cell function - II Prof. Dr. Samia Sarwar /Dr. Uzma (Even) / Dr. Faizania Shabir (Odd)	**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Clinical Disease related to Physicochemical aspects (Osmosis, Osmotic Pressure)
06-03-2025 Thursday	**PEADS** Medical genetic & dysmorphology Dr. Muhammad Asim	**BIOCHEMISTRY** Water & PH II / Cancer / Physico chemical aspects-II & Physico chemical aspects-III Dr. Uzma Zafar (Even) / Dr. Nayab (Odd)		**ANATOMY LGIS** Embryology / Histology Gametogenesis -Oogenesis) / Apical Cell Surface Prof. Dr. Ayesha (Odd) / Associate. Prof Dr. Mohtashim (Even)	**PHYSIOLOGY (LGIS)** Genetics, transcription & translation / Homeostasis Control System-II (positive feedback, and concept of feed forward, adaptive control and vicious cycle) Dr. Faizania Shabir (Even) / Prof. Dr. Samia Sarwar /Dr. Uzma (Odd)	**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Biochemical and Pathogienises of Cancer
07-03-2025 Friday	**Early Clinical Exposure (ECE)**						SDL Applied Anatony of Anterior axioappendicular muscles

Date/Day	8:00am-9:20am	9:20am – 10:10am	10:10am – 10:30am	10:30am-11:10am	11:10am-11:50am	11:50am – 01:00pm	Home Assignments
08-03-2025 Saturday	**COMMUNTIY MEIDICNE (RESEARCH-V)** Basics of Ethics in Health Research (Research -V) Dr Mneeba Iqbal (Even) / Dr Rizwana (Odd)	**PBL 1 (SESSION-II)** PBL Team	**Break**	**ANATOMY (LGIS)** Histology / Embryology Specialization of Apical cell surface / Gametogenesis Oogenesis Ass. Prof. Dr Mohtashim (Even) / Prof. Dr. Ayesha (Odd)	**PHYSIOLOGY (LGIS)** Homeostasis Control System-II (positive feedback, and concept of feed forward, adaptive control and vicious cycle) / Genetics, transcription & translation Prof. Dr. Samia Sarwar /Dr. Uzma (Even) / Dr. Faizania Shabir (Odd)	**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Applied Anatony of Postior axioappendicular muscles **Mid Module Clinical Evaluation**

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion (Biochemistry and Physiology)		
Sr. No	Batch	Roll No.
1.	**A**	01-70
2.	**B**	71-140
3.	**C**	141-210
4.	**D**	211-280
5.	**E**	281-onwards

Topics for Skill Lab with Venue

- Simple Epithelium (Anatomy/Histology-practical) venue-Histology Laboratory (Dr. Kashif)
- Introduction to Lab Equipment (Biochemistry practical) venue-Biochemistry Lab)
- Introduction to Wintrobe &Westergen tube (Physiology-Practical (Physiology Laboratory)

Schedule for Practical

Day	Histology Practical		Biochemistry Practical			Physiology Practical			Biochemistry SGD	
	Batch	Teacher Name	Batch	Teacher Name	Supervised by HOD	Batch	Teacher Name	Supervised by HOD	Batch	Teacher Name
Monday	**C**	Supervised by HOD	**C**	Dr. Rahat	Supervised by HOD	**E**	Dr. Ali /Dr. Afsheen	Supervised by HOD	**D**	Dr. Uzma
Tuesday	**D**		**D**	Dr. Romessa		**A**	Dr. Sheena		**E**	Dr. Almas
Wednesday	**E**		**A**	Dr. Uzma		**B**	Dr. Uzma		**A**	Dr. Romessa
Thursday	**B**		**E**	Dr. Almas		**D**	Dr. Fahd		**C**	Dr. Romessa
Saturday	**A**		**C**	Dr. Romessa		**C**	Dr. Farah		**B**	Dr. Rahat

Topics for SGDs / CBL with Venue

- Physiology CBL –Body fluid compartment, cell membrane & cytoskeletal-venue-Lecture Hall 5 (First Floor)
- Biochemistry Small Group Discussion - Physico chemical aspects of cell membrane - Lecture Hall 3 (First Floor) Cell & Cell membrane- Lecture Hall 3

Table No. 2 Batch Distribution with Venues and Teachers Name for Problem Based Learning (PBL) Sessions

Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	**A1**	(01-35)	Lecture Hall no.05 Physiology	Dr. Sana Latif (Demonstrator Biochemistry)	6.	**C2**	(176-210)	Lecture Hall no.04 (Basement)	Dr. Nazia (Demonstrator Physiology)
2.	**A2**	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Farah ali Shah (Demonstrator of Physiology)	7.	**D1**	(210-245)	Lecture Hall no.02 (Basement)	Dr. Jawad (Demonstrator Physiology)
3.	**B1**	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Nayab Ramzan (APWMO Biochemistry)	8.	**D2**	(246-280)	Conference Room (Basement)	Dr. Rahat (APWMO Biochemistry)
4.	**B2**	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Ali Raza (Senior Demonstrator of Anatomy)	9.	**E1**	(281-315)	New Lecture Hall no.01	Dr. Uzma Zafar (APWMO Biochemistry)
5.	**C1**	(141-175)	Lecture Hall no.05 (Basement)	Dr. Farhat (PGT Physiology)	10	**E2**	(315 onwards)	Lecture Hall no.04	Dr. Najam (PGT Physiology)

Table No. 3 Venues for Large Group Interactive Session (LGIS)

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 03
Even Roll Number	New Lecture Hall Complex Lecture Theater # 02

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections				
Batches	**Roll No**	**Subgroup**	**Anatomy Teacher**	**Venue**
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tayyaba Qureshi (Assistant Professor)	New Lecture Hall Complex 02
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Sumyyia Bashir (Assistant Professor)	New Lecture Hall Complex 3
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Zeneara Saqib (Demonstrator)	Anatomy Lecture Hall 03
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Qurat ul Ain (Senior. Demonstrator)	Anatomy Lecture Hall 04
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sajjad Hussain (Senior. Demonstrator)	New Lecture Hall Complex 04
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No 331 – 345) F4: Roll No (346 – onwards)	Dr. Ali Raza (Senior. Demonstrator)	New Lecture Hall Complex 01
Supervised by Prof. Dr. Ayesha Yousaf				

Table No. 5 Batch Distribution and Venues for Physiology Small Group Discussion SGDs				
Batches	**Roll No**	**Subgroup**	**Physiology Teacher**	**Venue**
A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Sheena Tariq (APWMO)	Physiology Lecture Hall 5
B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Uzma Kiyani (Senior Demonstrator)	Physiology Lecture Hall 5
C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Farah Shah (Demonstrator)	Physiology Lecture Hall 5
D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Nazia (Demonstrator)	Physiology Lecture Hall 5
E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Ali Zain / Dr. Afsheen (P. G Trainee)	Physiology Lecture Hall 5
Supervised by Prof. Dr. Samia Sarwar				

Time Table for Foundation Module - I (Fourth Week)
(10-03-2025 to 15-03-2025)

Date/Day	8:00am-9:20am		9:20am – 10:10am		10:10am – 10:30am	10:30am-11:10am		11:10am-11:50am		11:50am – 01:00pm	Home Assignments
10-03-2025 Monday	**BIOCHEMISTRY (LGIS)**		**PATHOLOGY LGIS**			**ANATOMY(LGIS)**		**PHYSIOLOGY (LGIS)**		**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Genetics, transcription & translation
	Introduction & Classification of Enzymes	Nucleic Acid Chemistry-I	Free Radicals/ Reactive Oxygen Species (ROS).	Free Radicals/ Reactive Oxygen Species (ROS).		Embryology	Histology	Cell membrane ion channels, transport across cell membrane	Structure of nucleus, ribosomes and cell division		
						Female Reproductive Cycles	Intra cellular junctions & adhesions				
	Dr. Raja Khalid (Even)	Dr. Uzma Zafar (Odd)	Dr Sara Rafi (Even)	Dr Rabbiya Khaalid (Odd)		Prof. Dr. Ayesha (Even)	Asst. Prof. Dr. Arsalan (Odd)	Dr. Faizania Shabir (Even)	Dr. Uzma (Odd)		
11-03-2025 Tuesday	**PATHOLOGY (LGIS)**		**BIOCHEMISTRY (LGIS)**			**ANATOMY LGIS**		**PHYSIOLOGY (LGIS)**		**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Structure of nucleus ribosome's & cell division
	Irreversible injury / Necrosis & Apoptosis		Nucleic Acid Chemistry-II	Properties / Factors of Enzymes		Histology	Embryology	Structure of nucleus, ribosomes and cell division	Cell membrane ion channels, transport across cell membrane		
						Intercellular junctions and adhesions	Female Reproductive Cycles				
	Dr Sara Rafi (Odd)	Dr Rabbiya Khaalid (Even)	Dr. Uzma Zafar (Even)	Dr. Raja Khalid (Odd)		Asst. Prof. Dr. Arsalan Manzoor (Even)	Prof. Dr. Ayesha (Odd)	Dr. Uzma (Even)	Dr. Faizania Shabir (Odd)		
12-03-2025 Wednesday	**DISSECTION / SGD**		**PBL 2 (SESSION-I)**		**Break**	**BIOCHEMISTRY (LGIS)**		**PHYSIOLOGY (LGIS)**		**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Nucliotide Derivatives and their importance
	Axilla		PBL Team			Nucleic Acid Chemistry-I	Introduction & Classification of Enzymes	Transport across cell membrane, Osmosis	Cellular control mechanism, cell cycle programmed cell death/ apoptosis		
						Dr. Uzma Zafar (Even)	Dr. Khalid (Odd)	Dr. Faizania Shabir (Even)	Dr. Uzma (Odd)		
13-03-2025 Thursday	**DISSECTION / SGD**		**BIOCHEMISTRY (LGIS)**			**PBL 2 (SESSION -II)**		**PHYSIOLOGY (LGIS)**		**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Causes and Repair of DNA Damage
	Axilla		Properties / Factors of Enzymes	Nucleic Acid Chemistry-II		PBL Team		Cellular control mechanism, cell cycle programmed cell death/ apoptosis	Transport across cell membrane, Osmosis		
			Dr. Raja Khalid (Even)	Dr. Uzma (Odd)				Dr. Uzma (Even)	Dr. Faizania Shabir (Odd)		
Date/ Day	**8:00 AM – 9:00 AM**		**9:00 AM – 10:00 AM**		**10:00 AM – 11:00 AM**			**11:00 AM – 12:00 PM**			
14-03-2025 Friday	**GYNAE & OBS**		**BIOCHEMISTRY (LGIS)**		**ANATOMY (LGIS)**			**PHYSIOLOGY (LGIS)**		SDL Applied Anatony of Axilla	
	Infertility		MM Equation, Coenzymes, Co Factors	Replication	Embryology		Histology	Active Transport I	Active Transport II		
					Ovulation & Fertilization		Glands				
	Dr. Rabia (Even)	Dr Fatima (Odd)	Dr. Uzma Zafar (Even)	Dr. Aneela (Odd)	Prof. Dr Ayesha (Even)		Ass. Prof. Dr Muhtashim (Odd)	Dr. Faizania Shabir (Even)	Dr. Sheena (Odd)		
Date/Day	**8:00am-10:10am**				**10:10am – 10:30am**	**10:30am-11:10am**		**11:10am-11:50am**		**11:50am – 01:00pm**	**Home Assignments**
15-03-2025 Saturday	**DISSECTION / SGD**				**Break**	**BIOCHEMISTRY (LGIS)**		**PHYSIOLOGY (LGIS)**		**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Applied Anatony of Brachial plexus
	Brachial plexus					Replication	MM Equation, Coenzymes, Co Factors	Active Transport II	Active Transport I		
						Dr. Aneela (Even)	Dr. Raja Khalid (Odd)	Dr. Sheena (Even)	Dr. Faizania Shabir (Odd)		

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion (Biochemistry and Physiology)

Sr. No	Batch	Roll No.
1.	**A**	01-70
2.	**B**	71-140
3.	**C**	141-210
4.	**D**	211-280
5.	**E**	281-onwards

Topics for Skill Lab with Venue

- Stratified epithelium & transitional epithelium (Anatomy/Histology-practical) venue-Histology Laboratory (Dr. kashif)
- Physiochemical Aspects of Cell - Surface Tension and Emulsion (Biochemistry practical) venue-Biochemistry Lab)
- Apparatus identification (Introduction to Neubauer's chamber, Red Blood Cell (RBC) pipettes& White Blood Cell (WBC) pipette (Physiology-Practical (Physiology Laboratory)

Schedule for Practical

Day	Histology Practical		Biochemistry Practical			Physiology Practical			Biochemistry SGD	
	Batch	Teacher Name	Batch	Teacher Name		Batch	Teacher Name		Batch	Teacher Name
Monday	**C**	Supervised by HOD	**C**	Dr. Rahat	Supervised by HOD	**E**	Dr. Ali /Dr. Afsheen	Supervised by HOD	**D**	Dr. Uzma
Tuesday	**D**		**D**	Dr. Romessa		**A**	Dr. Sheena		**E**	Dr. Almas
Wednesday	**E**		**A**	Dr. Uzma		**B**	Dr. Uzma		**A**	Dr. Romessa
Thursday	**B**		**E**	Dr. Almas		**D**	Dr. Fahd		**C**	Dr. Romessa
Saturday	**A**		**C**	Dr. Romessa		**C**	Dr. Farah		**B**	Dr. Rahat

Topics for SGDs / CBL with Venue

- Physiology CBL Down's syndrome – (venue-Lecture Hall 5)
- Biochemistry CBL – Enzymes-Lecture Hall 3

Table No. 2 Batch Distribution with Venues and Teachers Name for Problem Based Learning (PBL) Sessions

Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	**A1**	(01-35)	Lecture Hall no.05 Physiology	Dr. Sana Latif (Demonstrator Biochemistry)	6.	**C2**	(176-210)	Lecture Hall no.04 (Basement)	Dr. Nazia (Demonstrator Physiology)
2.	**A2**	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Farah ali Shah (Demonstrator of Physiology)	7.	**D1**	(210-245)	Lecture Hall no.02 (Basement)	Dr. Jawad (Demonstrator Physiology)
3.	**B1**	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Nayab Ramzan (APWMO Biochemistry)	8.	**D2**	(246-280)	Conference Room (Basement)	Dr. Rahat (APWMO Biochemistry)
4.	**B2**	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Ali Raza (Senior Demonstrator of Anatomy)	9.	**E1**	(281-315)	New Lecture Hall no.01	Dr. Uzma Zafar (APWMO Biochemistry)
5.	**C1**	(141-175)	Lecture Hall no.05 (Basement)	Dr. Farhat (PGT Physiology)	10	**E2**	(315 onwards)	Lecture Hall no.04	Dr. Najam (PGT Physiology)

Table No. 3 Venues for Large Group Interactive Session (LGIS)

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 03
Even Roll Number	New Lecture Hall Complex Lecture Theater # 02

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections				
Batches	**Roll No**	**Subgroup**	**Anatomy Teacher**	**Venue**
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tayyaba Qureshi (Assistant Professor)	New Lecture Hall Complex 02
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Sumyyia Bashir (Assistant Professor)	New Lecture Hall Complex 3
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Zeneara Saqib (Demonstrator)	Anatomy Lecture Hall 03
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Qurat ul Ain (Senior. Demonstrator)	Anatomy Lecture Hall 04
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sajjad Hussain (Senior. Demonstrator)	New Lecture Hall Complex 04
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No 331 – 345) F4: Roll No (346 – onwards)	Dr. Ali Raza (Senior. Demonstrator)	New Lecture Hall Complex 01
Supervised by Prof. Dr. Ayesha Yousaf				

Table No. 5 Batch Distribution and Venues for Physiology Small Group Discussion SGDs				
Batches	**Roll No**	**Subgroup**	**Physiology Teacher**	**Venue**
A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Sheena Tariq (APWMO)	Physiology Lecture Hall 5
B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Uzma Kiyani (Senior Demonstrator)	Physiology Lecture Hall 5
C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Farah Shah (Demonstrator)	Physiology Lecture Hall 5
D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Nazia (Demonstrator)	Physiology Lecture Hall 5
E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Ali Zain / Dr. Afsheen (P. G Trainee)	Physiology Lecture Hall 5
Supervised by Prof. Dr. Samia Sarwar				

Time Table for Foundation Module - I (Fifth Week)
(17-03-2025 to 22-03-2025)

Date/Day	8:00am-9:20am	9:20am – 10:10am	10:10am – 10:30am	10:30am-11:10am		11:10am-11:50am		11:50am – 01:00pm	Home Assignments
17-03-2025 Monday	**DISSECTION / CBL**		Break	**ANATOMY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**Practical & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Cell membrane
	Brachial plexus injuries and winging Of Scapula			Embryology	Histology	Transcription	Regulation & Inhibition of Enzyme Activity		
				Ovulation and fertilization	Glands				
				Prof. Dr. Ayesha (Even)	Ass. Prof. Dr. Mohtashim (Odd)	Dr. Aneela (Even)	Dr. Raja Khalid (Odd)		
18-03-2025 Tuesday	**DISSECTION**			**BIOCHEMISTRY (LGIS)**		**SDL**		**Practical) & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Cell organelles
	Breast			Regulation & Inhibition of Enzyme Activity	Transcription				
				Dr. Raja Khalid (Even)	Dr. Aneela (Odd)				
19-03-2025 Wednesday	**BIOCHEMISTRY (LGIS)**		**PATHOLOGY (LGIS)**	**MEDICINE(LGIS)**		**DISSECTION / SGD**		**Practical & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Clinical Applications of PCR & Recombinant DNA Technology
	Translation	Mutation	Genetic disorder	Chromosomal Abrassions		Dissection/spotting			
	Dr. Aneela (Even)	Dr. Kashif Rauf (Odd)	Dr Rabbiya Khaalid (Even) / Dr Sara Rafi (Odd)	Dr. Madiha Nazr (Odd)	Dr. Unazua (Even)				
20-03-2025 Thursday	**DISSECTION / SGD**			**ANATOMY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**Practical & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Diagonistic role of Enzymes
	Sternoclavicular and acromioclavicular joints			Histology	Embryology	Mutation	Translation		
				Histology & Development of Mammary Gland	Cleavage and formation of blastocyst				
				Asso. Dr. Mohatashim Hina (Even)	Prof. Dr. Ayesha Yousaf (Odd)	Dr. Kashif Rauf (Even)	Dr. Aneela (Odd)		

Date/ Day	8:00 AM – 10:00 AM	10:00 AM – 11:00 AM		11:00 AM – 12:00 PM		11:50am – 01:00pm
21-03-2025 Friday	**DISSECTION / SGD**	**BIOCHEMISTRY (LGIS)**		**SURGERY (LGIS)**		SDL Applied Anatony of Brachial plexus injuries (Refered to table no. 1)
	Radiograph/Cross Section of axioapendicular region	Recombinant DNA/ PCR (Polymerase Chain Reaction)	Clinical Enzymology	CA Breast		
		Dr. Kashif Rauf (Even)	Dr. Raja Khalid / Dr. Aneela (Odd)	Dr. Hira (Odd)	Dr. Asad Amir (Even)	

Date/Day	8:00am-9:20am	9:20am – 10:10am	10:10am – 10:30am	10:30am-11:10am		11:10am-11:50am		11:50am – 01:00pm	Home Assignments
22-03-2025 Saturday	**DISSECTION / SGD**		Break	**ANATOMY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**Practical & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Applied Anatony of Breast **End Module Clinical Evaluation**
	Surface Anatomy of Axioapendicular Region			Histology	Embryology	Clinical Enzymology	Recombinant DNA/ PCR (Polymerase Chain Reaction)		
				Histology & Development of Mammary Gland	Cleavage and formation of blastocyst				
				Asso. Dr. Mohatashim Hina (Odd)	Prof. Dr. Ayesha (Odd)	Dr. Raja Khalid / Dr. Aneela (Even)	Dr. Kashif Rauf (Odd)		

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion (Biochemistry and Physiology)

Sr. No	Batch	Roll No.
1.	**A**	01-70
2.	**B**	71-140
3.	**C**	141-210
4.	**D**	211-280
5.	**E**	281-onwards

Topics for Skill Lab with Venue

- Mammary Gland (Anatomy/Histology-practical) Venue-Histology Laboratory (Dr. Kashif)
- Physiochemical aspects of cell-Adsorption & Tonicity (Biochemistry practical) venue-Biochemistry laboratory)
- Apparatus identification (Introduction to centrifuge machine) (Physiology-Practical) Venue-Physiology Laboratory

Schedule for Practical

Day	Histology Practical		Biochemistry Practical			Physiology Practical			Biochemistry SGD	
	Batch	**Teacher Name**	**Batch**	**Teacher Name**		**Batch**	**Teacher Name**		**Batch**	**Teacher Name**
Monday	**C**	Supervised by HOD	**C**	Dr. Rahat	Supervised by HOD	**E**	Dr. Ali /Dr. Afsheen	Supervised by HOD	**D**	Dr. Uzma
Tuesday	**D**		**D**	Dr. Romessa		**A**	Dr. Sheena		**E**	Dr. Almas
Wednesday	**E**		**A**	Dr. Uzma		**B**	Dr. Uzma		**A**	Dr. Romessa
Thursday	**B**		**E**	Dr. Almas		**D**	Dr. Fahd		**C**	Dr. Romessa
Saturday	**A**		**C**	Dr. Romessa		**C**	Dr. Farah		**B**	Dr. Rahat

Topics for SGDs / CBL with Venue

- Physiology SGD – Cellular control mechanism, cell cycle, programmed cell death, Apoptosis Lecture Hall 5
- Biochemistry CBL – Genetics (PCR) - Lecture Hall 3
- Anatomy CBL - Brachial Plexus injuries and winging Of Scapula

Table No. 2 Batch Distribution with Venues and Teachers Name for Problem Based Learning (PBL) Sessions

Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	**A1**	(01-35)	Lecture Hall no.05 Physiology	Dr. Sana Latif (Demonstrator Biochemistry)	6.	**C2**	(176-210)	Lecture Hall no.04 (Basement)	Dr. Nazia (Demonstrator Physiology)
2.	**A2**	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Farah ali Shah (Demonstrator of Physiology)	7.	**D1**	(210-245)	Lecture Hall no.02 (Basement)	Dr. Jawad (Demonstrator Physiology)
3.	**B1**	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Nayab Ramzan (APWMO Biochemistry)	8.	**D2**	(246-280)	Conference Room (Basement)	Dr. Rahat (APWMO Biochemistry)
4.	**B2**	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Ali Raza (Senior Demonstrator of Anatomy)	9.	**E1**	(281-315)	New Lecture Hall no.01	Dr. Uzma Zafar (APWMO Biochemistry)
5.	**C1**	(141-175)	Lecture Hall no.05 (Basement)	Dr. Farhat (PGT Physiology)	10	**E2**	(315 onwards)	Lecture Hall no.04	Dr. Najam (PGT Physiology)

Table No. 3 Venues for Large Group Interactive Session (LGIS)

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 03
Even Roll Number	New Lecture Hall Complex Lecture Theater # 02

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections				
Batches	**Roll No**	**Subgroup**	**Anatomy Teacher**	**Venue**
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tayyaba Qureshi (Assistant Professor)	New Lecture Hall Complex 02
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Sumyyia Bashir (Assistant Professor)	New Lecture Hall Complex 3
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Zeneara Saqib (Demonstrator)	Anatomy Lecture Hall 03
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Qurat ul Ain (Senior. Demonstrator)	Anatomy Lecture Hall 04
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sajjad Hussain (Senior. Demonstrator)	New Lecture Hall Complex 04
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No 331 – 345) F4: Roll No (346 – onwards)	Dr. Ali Raza (Senior. Demonstrator)	New Lecture Hall Complex 01
Supervised by Prof. Dr. Ayesha Yousaf				

Table No. 5 Batch Distribution and Venues for Physiology Small Group Discussion SGDs				
Batches	**Roll No**	**Subgroup**	**Physiology Teacher**	**Venue**
A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Sheena Tariq (APWMO)	Physiology Lecture Hall 5
B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Uzma Kiyani (Senior Demonstrator)	Physiology Lecture Hall 5
C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Farah Shah (Demonstrator)	Physiology Lecture Hall 5
D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Nazia (Demonstrator)	Physiology Lecture Hall 5
E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Ali Zain / Dr. Afsheen (P. G Trainee)	Physiology Lecture Hall 5
Supervised by Prof. Dr. Samia Sarwar				

Tentative Schedule for LMS Based Weekly Online Assessments for First Year MBBS (Foundation Module - I) Batch 52

The Online Assessment for Foundation Module - I for First Year MBBS will be as per following schedule:

Class	Module	Day & Date	Time of Assessment	Focal person	Department Responsible
First Year MBBS	Foundation Module - I	Monday 03rd March, 2025	7:00 pm-7:30pm	Prof. Dr Ayesha Yousaf	Anatomy
		Tuesday 04th March, 2025	7:00 pm-7:30pm	Prof. Dr Samia Sarwar	Physiology
		Wednesday 05th March, 2025	7:00 pm-7:30pm	Dr Aneela Jamil	Biochemistry
		Monday 10th March, 2025	7:00 pm-7:30pm	Prof. Dr Ayesha Yousaf	Anatomy
		Tuesday 11th March, 2025	7:00 pm-7:30pm	Prof. Dr Samia Sarwar	Physiology
		Wednesday 12th March, 2025	7:00 pm-7:30pm	Dr Aneela Jamil	Biochemistry

Note: All dates are subject to change.

End of Foundation Module - I Assessment
(24-03-2025 to 29-03-2025)

Date / Days	Tentative Datesheet	Time
24-03-2025 Monday	Asssessment Week	
25-03-2025 Tuesday		
26-03-2025 Wednesday		
27-03-2025 Thursday		
28-03-2025 Friday		
29-03-2025 Saturday		

*All dates are subject to change.

*Details will be shared separately.

SECTION VII

Table of Specification (TOS) For Foundation Module - I Examination for First Year MBBS

Domains: C-Core Subject (70%) Levels C1-C2, HV- Horizontal & Vertical Integration (20%) Levels C2-C3, S- Spiral Integration (10%) Levels C2-C3

End of Module Assessment	Subject	Theory (Cognitive) Assessment																			Practical (Skill & Attitude) Assessment											Grand Total	Total Time of Module Assessment
		MCQs					EMQs			SAQs					SEQs				Marks	Total Marks Theory	Total Time	AV OSPE					Time	AED Reflective Writing	OSVE			Total Practical Marks		
		C	HV	S	Total	Marks	C	Total	Marks	C	HV	S	Total	Marks	C	HV	S	Total				C	HV	S	Total	Marks			Viva	Copy	Total			
First Module	Anatomy	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Physiology	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Biochemistry	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
Formative- Weekly LMS Based Assessment of 30 MCQs (10 MCQs per Subject)																																	
End of Module Assessment	Subject	Theory (Cognitive) Assessment																			Practical (Skill & Attitude) Assessment											Grand Total	Total Time of Module Assessment
		MCQs					EMQs			SAQs					SEQs				Marks	Total Marks Theory	Total Time	AV OSPE					Time	AED Reflective Writing	OSVE			Total Practical Marks		
		C	HV	S	Total	Marks	C	Total	Marks	C	HV	S	Total	Marks	C	HV	S	Total				C	HV	S	Total	Marks			Viva	Copy	Total			
Second Module	Anatomy	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Physiology	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Biochemistry	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
Formative- Weekly LMS Based Assessmen tof 30 MCQs (10 MCQs per Subject)																																	

Block	Subjects	LMS Based Assessment MCQs					OSPE						Grand Total	Total Block Time
							LabOSPE	IOSPE	COSPE	Total	Marks	Time		
		C	HV	S	Total	Time	C	HV	S					
BLOCK	Anatomy	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS
	Physiology	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS
	Biochemistry	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS
50% Questions/OSPE Stations/Viva Stations will be from Foundation Module and 50% Questions will be from MSK-1 Module														
For Each assessment student will have to individually pass Theory and Practical components														

Weekly LMS Assessment			
Subjects	Anatomy	Physiology	Biochemist
No of MCQs*	30	30	30
Marks/MCQ	30	30	30
*MCQ=1 Mark each, 1 min each			

Marks per Item

MCQ=1	EMQ= 5	SAQ= 5	SEQ= 9	AVOSPE= 5		OSPE= 3
OSPE Time=1 Round of 40 Students =80 min						
3 Round of 40 Students =240 min						
OSVE=Time per student=5mins						

Annexure I

Templates for Thoery Paper

- **MCQ, SEQ Paper, & EMQ**

Templates for AV OSPE

Templates for Structured Viva

Rawalpindi Medical University Rawalpindi
Department of Anatomy, Physiology & Biochemistry
MCQs & EMQ Paper for _____ Module, First Year MBBS Batch 52
Date: 00-00-0000

Total Marks: 30 (MCQs: 25, EMQ: 5) Roll No. _____
Total Time: 30 Minutes Name. _____
Each MCQ carries 1 mark and EMQ carries 5 marks

Encircle the single best response

Q.#	Integrated & Clinically Oriented Assessment of the Subject Anatomy, Physiology & Biochemistry Section A: Core Knowledge of Anatomy / Physiology / Biochemistry (70%)	Level of Cognition
1.	Question …… a. …… b. …… c. …… d. …… e. …… USMLE: Type Question Reference: Ganong 25th Edition Page No. 101	C1
	Section – B: Integrations (30%)	
	Horizontal Integration Anatomy / Physiology / Biochemistry (5%)	
2.	**Horizontal Integration with Anatomy (2.5%)** Questions …… a. …….. b. …….. c. …….. d. …….. e. …….. USMLE: Type Question Reference: Ganong 25th Edition Page No. 101	C1
	Vertical Integration with Medicine / Surgery / Gynae Obs etc (15%)	
3.	Question …… a. ……. b. ……. c. ……. d. ……. e. ……. USMLE: Type Question Reference: Ganong 25th Edition Page No. 101	C3

Spiral Integration (10%)		
Medical Bioethics		
4.	Question …… a. ……. b. ……. c. ……. d. ……. e. ……. USMLE: Type Question Reference: Ganong 25th Edition Page No. 101	C2
Family Medicine		
5.	Question …… a. ……. b. ……. c. ……. d. ……. e. ……. USMLE: Type Question Reference: Ganong 25th Edition Page No. 101	

Rawalpindi Medical University Rawalpindi
Department of Anatomy, Physiology & Biochemistry
SEQ & SAQ Paper for _____ Module, _____ Year MBBS Batch _____
Date: 00-00-0000

Total Marks: 70
Each SAQ carries 5 marks
Each SEQ carries 9 marks

Time allowed: 1 hour & 30 minutes
Each SAQ: 5 minutes, SEQ: 10 minutes

Attempt all Questions

Integrated & Clinically Oriented Assessment of the Subject of Anatomy, Physiology & Biochemistry					
Domain		**Percentage**			
• **Core Knowledge (CK) of Anatomy/Physiology Biochemistry**		**(70%)**			
• **Integration**		**(30%)**			
○ **Horizontal Integration (HI)**		**(05%)**			
○ **Vertical Integration (VI)**		**(15%)**			
○ **Spiral Integration (SI)**		**(10%)**			
Q.#	**Construct your Answers according to the given Scenarios and Questions**	**Domain**	**Marks**	**% Weightage**	**Level of Cognition**
Short Answer Questions (SAQs) Total Marks: 25 (Each SAQ carries marks)					
SAQ 1	A 55 years Male, known case of Coronary Artery Disease, presented to…… …….. …….. ……..	CK & VI	……..	…….	……
	a. ……. …….	CK	2	8%	C2
	b. ……. …….	CK	2	12%	C2
	c. ……. ……	CK	2	8%	C2

	d. …… ……	CK	2	12%	C2
	e. …… …… USMLE Question. References: Part a: Guyton & Hall 14th Edition page # 114 Part b: Guyton & Hall 14th Edition Page # 116	CK	1	8%	C2

Q.#	**Construct your Answers according to the given Scenarios and Questions**	**Domain**	**Marks**	**% Weightage**	**Level of Cognition**
Short Essay Question (SEQs) Total Marks: 45					
SEQ 1	A 55 years Male, known case of Coronary Artery Disease, presented to…… …….. …….. ……..	CK & VI	……..	…….	……
	a. …… …….	HI with Anatomy	2	6.66%	C2
	b. …… …….	CK	3	6.66%	C2
	c. …… …….	CK	2	6.66%	C2
	d. …… ……	CK	1	6.66%	C2
	e. …… …… USMLE Style Question. References: • Part a: Guyton & Hall 14th Edition page # 101 • Part b: Guyton & Hall 14th Edition Page # 103 • Part c: Guyton & Hall 14th Edition Page # 103	CK	1	6.66%	C2

Rawalpindi Medical University Rawalpindi
Department of Anatomy / Physiology / Biochemistry
Clinically Oriented Audio Visal Objective Structured Practical Examination (OSPE)
_____ Module 2025

_____ Year MBBS (Batch _____)

Day: _____

Date: _____

10 AV OSPE Slides

Time Allowed: 50 minutes

05 minutes for each slide

Chairperson
Department of _____
Rawalpindi Medical University, Rawalpindi

Additional Director Assessment
Rawalpindi Medical University
Rawalpindi

Director DME
Rawalpindi Medical University
Rawalpindi

Vice Chancellor
Rawalpindi Medical University
Rawalpindi

Slide 1

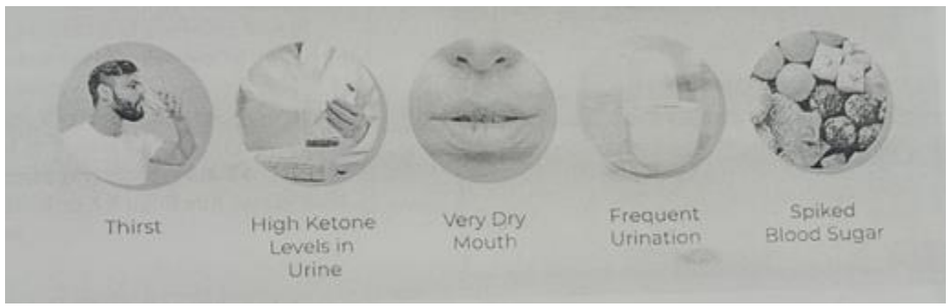
Core Knowledge with Horizontal / Vertical / Spiral Integration

Topic:

Teaching Strategy:

Requirements: Answer sheet, Pen

Objective: _____



1. ……. (01)
2. ……. (01)
3. ……. (01)
4. ……. (01)
5. ……. (01)

Slide 1

Key for Examiner

1. ……
2. ……
3. ……
4. ……..
5. ……..

Department of Anatomy

Foundation Module - I (Structured Viva)

Date: 21-03-2023 Time: 8:00-2:00pm Roll no: 181 onwards

P: Punctuality, D: Dressing, C: Communication

Roll no.	Anatomicomedical terminologies (C1-C3) (05)	Osteology and arthrology (C1-C3) 20	Axioappendicular muscles and Axilla (C1-C3) (10)	Breast (C1-C3) (05)	Brachial plexus and injuries (05)	Surface marking (skill) (05)	Soft tissue spotting (skill) (05)	Gross sketch copy (skill) (02)	Professionalism (PCD) (03)	Total marks (60)

Examiner _____

Sign _____

Stamp _____

***Objective Structured Practical Examination (OSPE) will be held in end of block assessment.**

Department of Physiology

Foundation Module - I (Structured Viva)

MODULE: _____ **DATE:** _____ **TEACHER NAME:** _____ **SIGNATURE**_____

Sr. No.	Roll No.	Students Name	Definition/ Enlist/Enumerate Q=1 C1 (5Marks)	Physiological/ Pathophysiological Mechanism Q=2 C2 (8 Marks)	Related Diseases/ Diagnostic Parameters/ Management / Treatment Guidelines Q=3 C3 (6 Marks)	Additional Domains of knowledge to be Assessed • Family Medicine /Preventive Medicine • Artificial Intelligence) • Counseling • Prevention • Social Impact • Psychosocial impact • Community Implication • Prevalence / algorithms C1/C2/C3 (2 Marks)	Professionalism & Behavior Components; • Appropriate dressing & white coat • College ID cardwith picture • Behavior • Level of Confidence/ Non verbal Body language • Communication Skills • Language of Communication • Volume of voice • Clarity & fluency of speech • Understanding of questions • Prioritizing the answers A3 (4 Marks)	Total marks obtained out of 25

***Objective Structured Practical Examination (OSPE) will be held in end of block assessment.**

Department of Biochemistry

Foundation Module - I (Structured Viva)

Date: Time: Teacher's Name

Roll No.	Classification/ Definition/ Enumerate **(C1)** **(05 Marks)**	Metabolic role/ Mechanism of action/ Physiological mechanism **(C2)** **(08 Marks)**	Related clinical disorders/ Pathogenesis **(C3)** **(06 Marks)**	Additional domains of Knowledge to be assessed Family Medicine, Artificial Intelligence, Ethics and Research **(C1, C2, C3)** **(02 Marks)**	Professionalism & Behavior **(A3)** **(04 Marks)**	Total marks **(25)**

***Objective Structured Practical Examination (OSPE) will be held in end of block assessment.**

Rawalpindi Medical University
1st Year MBBS Model MCQS (USMLE Format)

1.	A 45-year-old woman presents to the clinic with a palpable lump in her left breast. On physical examination, there is no skin erythema or dimpling, but there is noticeable enlargement of the axillary lymph nodes on the left side. A biopsy of the breast lump reveals invasive ductal carcinoma. The surgeon is concerned about the possible spread of cancer to the lymph nodes. Which of the following is the most likely primary route of lymphatic drainage for this patient's breast cancer? A) Left subclavian lymph nodes B) Internal thoracic (mammary) lymph nodes C) Left axillary lymph nodes D) Right axillary lymph nodes E) Left supraclavicular lymph nodes	Anatomy
2.	A 52-year-old male presents with muscle weakness, fatigue, and poor exercise tolerance. His laboratory results reveal elevated lactate levels, suggesting a mitochondrial dysfunction. The patient is diagnosed with a disorder affecting the mitochondrial respiratory chain. Which part of the mitochondria is primarily responsible for housing the enzymes involved in oxidative phosphorylation? A) Cristae B) Mitochondrial matrix C) Outer membrane D) Inner membrane E) Outer chamber	Physiology
3.	A 25-year-old female with a history of genetic disorders presents with symptoms of muscle weakness and fatigue. Her genetic counselor explains that a defect in protein synthesis could be contributing to her condition. The counselor explains that one of the RNA molecules plays a crucial role in delivering amino acids to the ribosome for protein assembly. Which of the following is the primary function of transfer RNA (tRNA) in this process? A) Transfers information from DNA to ribosomes B) Transfers information from mRNA to cytosol C) Transfers amino acids from cytosol to ribosomes D) Transfers proteins from cytosol to ribosomes E) Transfers proteins from ribosomes to the Golgi apparatus	Biochemistry
4.	A 60-year-old patient is diagnosed with a chronic condition and given several treatment options, each with varying degrees of risk and benefit. The patient carefully considers the options and decides to pursue a less invasive treatment, despite the doctor's recommendation for a more aggressive approach. The doctor provides all the necessary information, ensuring the patient understands the potential outcomes and respects their decision. A) Beneficence B) Justice C) Autonomy D) Non-maleficence E) Paternalism	Spiral Courses Bioehtics

Rawalpindi Medical University
1st Year MBBS Model EMQ

1. A 35-year-old male presents to the emergency department following a fall onto an outstretched arm during a football match. He reports pain in the upper arm, and upon examination, he is unable to extend his wrist or fingers. There is localized tenderness and swelling over the mid-shaft of the humerus, and he has difficulty moving his arm. Upon further examination, he also has sensory loss on the dorsum of his hand. X-rays confirm a mid-shaft humeral fracture.

   Match the options (A to H) with the statements (1 to 8) given below:

   List of Options (A to H):

   A) Radial nerve
   B) Median nerve
   C) Ulnar nerve
   D) Axillary nerve
   E) Pain localized to the shoulder
   F) Wrist drops
   G) Loss of sensation over the dorsum of the hand
   H) Weakness in elbow flexion

   Statements:

   1. This nerve is most commonly injured in a mid-shaft humerus fracture and is responsible for causing wrist drop.
   2. A common sign seen with this injury is localized pain and tenderness directly over the fracture site.
   3. Injury to this nerve can result in difficulty extending the fingers and wrist, leading to the inability to fully extend the hand.
   4. This nerve, when injured, can cause sensory loss over the dorsum of the hand and difficulty extending the wrist and fingers.
   5. Injury to this nerve might result in a loss of sensation over the lateral aspect of the shoulder and difficulty abducting the arm.
   6. This nerve injury may lead to weakness in elbow flexion and loss of sensation in the anterior forearm.
   7. Loss of sensation in the medial side of the hand and inability to flex the fingers are indicative of injury to this nerve.
   8. This nerve is not typically injured in a mid-shaft humerus fracture but can cause weakness in shoulder abduction when injured in other upper arm fractures.

   Answer Key:

   A) Radial nerve
   E) Pain over the fracture site
   F) Wrist drops
   G) Loss of sensation over the dorsum of the hand
   D) Axillary nerve
   B) Median nerve
   C) Ulnar nerve
   D) Axillary nerve

Rawalpindi Medical University
1st Year MBBS Model SEQs & SAQs (USMLE Format)

1. A female patient of 42 years of age presented to hospital with painless swelling of left breast along that was firm and adherent to chest wall. On examination, oedematous skin was also present around the swelling a. What is the most likely diagnosis for a painless, firm, and adherent swelling in the breast with oedematous skin? (1) b. What is the clinical sign that describes the oedematous skin around the breast swelling, commonly seen in inflammatory breast cancer? (1) c. At what age is a woman most likely to present with breast cancer, as seen in this 42-year-old patient? (1) d. What is the significance of the swelling being adherent to the chest wall in the context of breast cancer? (1) e. Which condition should be ruled out when a patient presents with painless breast swelling and skin oedema? (1)	Anatomy
2. A 40 years old male presented in medical emergency with complaints of severe headache, confusions and fatigue. On examination his blood pressure was 180/110? a. What is the most likely diagnosis for a 40-year-old male presenting with severe headache, confusion, fatigue, and high blood pressure (180/110)? b. What is the significance of the blood pressure reading of 180/110 in this patient? c. Which condition should be considered in a patient with severe headache and confusion, especially with elevated blood pressure? d. What is the potential risk associated with untreated blood pressure of 180/110? e. What is the first-line management for a patient presenting with hypertensive emergency, as suggested by this scenario?	Physiology
3. A biochemist studies an enzyme breaking down a carbohydrate. The enzyme stabilizes the transition state, forms a covalent bond with the substrate, requires metal ions, and facilitates proton transfer during the reaction. a. Which mechanism involves stabilizing the transition state more than the substrate? b. What does covalent catalysis entail in enzyme reactions? c. How do metal ions aid in the enzyme's catalytic activity? d. Why is proton transfer important in enzyme catalysis? e. What mechanism helps the enzyme facilitate the breakdown of the carbohydrate through proton transfer?	Biochemistry

Rawalpindi Medical University
1st Year MBBS Model AV OSPE

Slide 1 / Video

Core Knowledge with Horizontal / Vertical / Spiral Integration

Topic: Erbs Palsy

Teaching Strategy: Small Group Discussion

Requirements: Answer sheet, Pen

Objective: To Asses the Knowledge of Students Regaring Nerves Injuries in Upper Limb

1. Name the clinical condition shown in video / slide? (01)
2. What is the primary cause of this clinical condition? (01)
3. Which muscles are most commonly affected? (01)
4. Which clinical sign is often associated with this condition in newborns? (01)
5. What is the characteristic posture? (01)