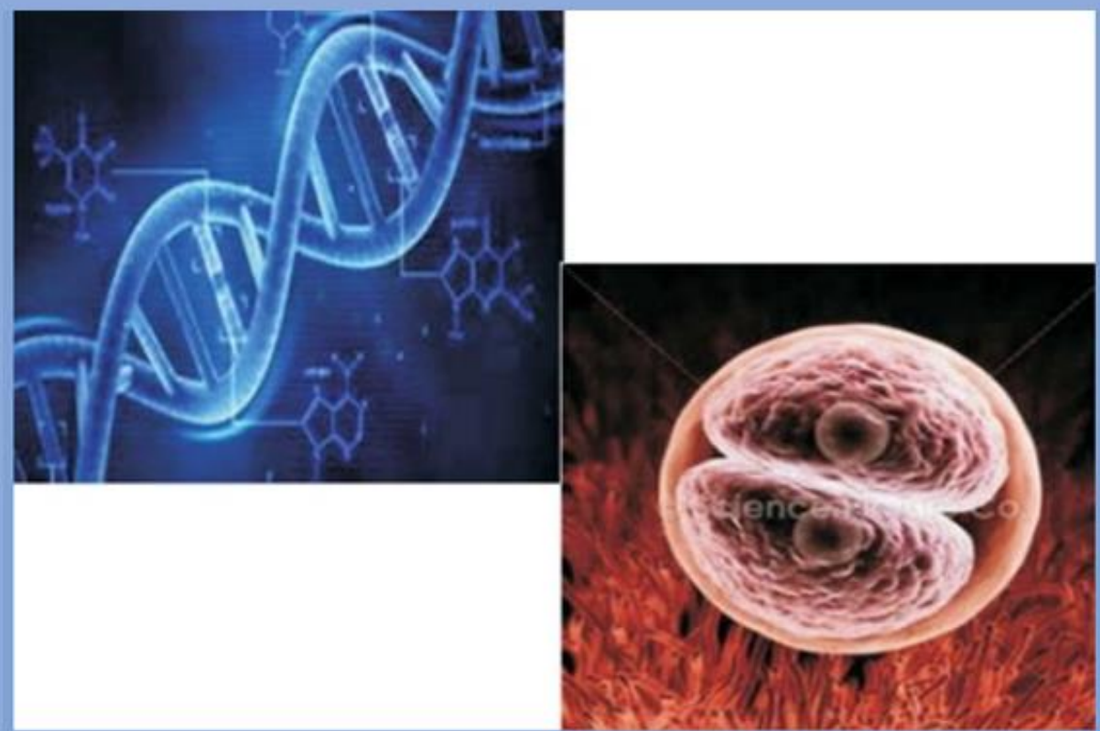
Rawalpindi Medical University
Department of Medical Education (DME)

Study Guide
Foundation Module 2024



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Additional Director Medical Education, Asst. Director Medical Education,	Curriculum Committee	Vice Chancellor

Document Revision History

Author(s)	Date	Version	Description
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.
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
Dr Tehzeeb, Dr Samia Sarwar, , Dr Ifra Saeed, Dr Ayesha Yousaf , Dr Tehmina Qamar, Dr Sidra Hamid	2021-2022	3rd	Developed for First Year MBBS. Horizontally and vertically integrated Learning objectives updated, Research curriculum incorporated
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	2023-2024	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

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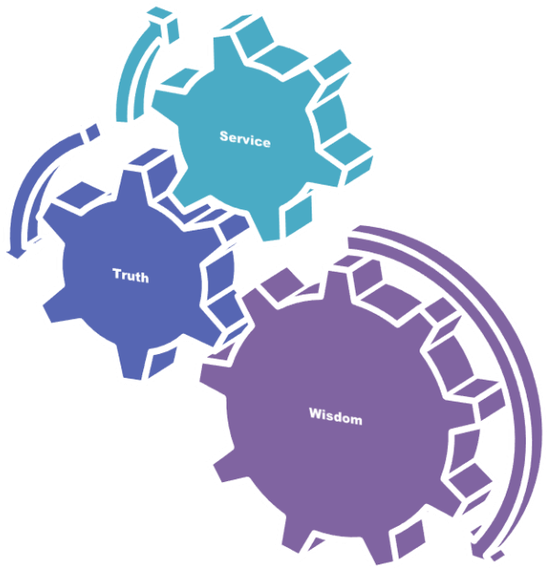
University Moto, Vision, Values & Goals

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:

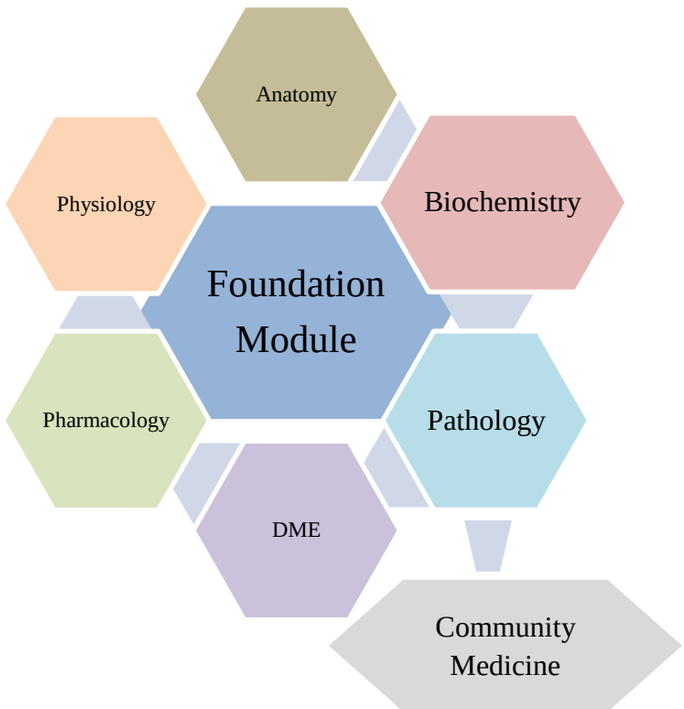
- Provide thorough grounding in the basic theoretical concepts underpinning the practice of medicine.
- Develop and polish the skills required for providing medical services at all levels of the Health care delivery system.
- Help you attain and maintain the highest possible levels of ethical and professional 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 2024

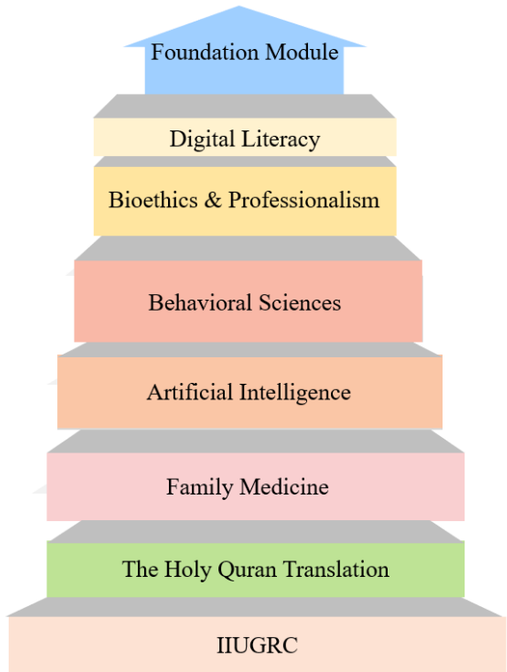
Study Guide

Foundation Module

Integration of Disciplines in Foundation Module



Spiral / General Education Cluster Courses



Discipline Wise Details of Modular Content

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				
	• Opening Ceremony (DME) • Introduction to Digital Services Of RMU				

<table>
<tr><td></td><td colspan="2">

Introduction to Integrated Modular Curriculum, Study Guide sand RMU Policies
Assessment Model of RMU & Continuous Internal Assessment
Research Model of RMU (IUGRC), Biomedical Ethics Family Medicine, Artificial Intelligence
Introduction to Different Teaching Strategies, Role of Team Leader Facilitator and Students SGD/LGIS/TBL/PAL/INTERNET & Literature Group activity (DME)
Orientation to Integrated Modular System for Pre-clinical Years (DME)
Lecture on Feedback (DME)
Mission and Vision (DME)
Introduction to Pharmacology
Introduction to Pathology
Introduction to Community Medicine (Community Medicine)
Introduction to Medicine (Medicine)

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<tr><td></td><td colspan="2">Spiral Courses</td></tr>
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The Holy Quran Translation
Bioethics & Professionalism
Artificial Intelligence
Family Medicine
Integrated Under Graduate Research Innovation (IUGRC)
Behavioral Sciences
Digital Literacy Module
Life Style and Prevention

</td><td>
The Holy Quran Translation Component

Islam And Medical Science
Introduction to Quran Translation
Introduction to history of medical ethics
Leadership Professionalism (DME)
Introduction to Artificial Intelligence
Introduction to Family Medicine & its application in health care system
Research I Introduction of health research process
Research II characteristic of reserch process
Research III Basis of ethics in health research
Research IV Basics of ethics in medical reserch
Introduction to Behavioral Sciences
Management of stress
How to use Higher Education Commission (HEC) digital libaray.
Healthy Lifestyle: A Foundation for Medical Professionals

</td></tr>
<tr><td></td><td colspan="2">Vertical Integration</td></tr>
<tr><td></td><td colspan="2">
Clinically content relevant to Foundation module

Routs of drug administration (Pharmacology)

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</table>

	• Absorption of drugs (Pharmacology) • Factors affecting drug absorption (Pharmacology) • Distribution of drugs (Pharmacology) • Cellular response to injury (Pathology) • Intracellular accumulations (Pathology) • Pigments (Pathology) • Free radical and reactive oxygen species (Pathology) • Irreversible cell injury/apoptosis (Pathology) • Genetic disorders (Pathology) • History of medicine (Medicine) • Medicine and allied subjects (Medicine) • Chromosomal abressions (Medicine) • History taking and general physical examination (Medicine)	
Early Clinical Exposure (ECE)		
	• Clinical Rotations	Rotation of students to • Medicine & Allied • Surgery and Trauma • Emergency Department
Hands on Workshop on Basic Life Support (BLS)		
	• Hands on Workshops on BLS	

Table of Contents

Foundation Module Team

Module Name	:	Foundation Module
Duration of module	:	06 Weeks
Coordinator	:	Dr. Zenera Saqib
Co-coordinator	:	Dr. Qurat Ul Ain
Reviewed by	:	Module Committee

Module Committee		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Umar
2.	Director DME	Prof. Dr. Rai Muhammad Asghar
3.	Convener Curriculum	Prof. Dr. Naeem Akhter
4.	Chairperson Anatomy & Dean Basic Sciences	Prof. Dr. Ayesha Yousaf
5.	Additional Director DME	Prof. Dr. Ifra Saeed
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. Fahad Anwar
16.	Focal Person Family Medicine	Dr. Sadia Khan

Module Task Force Team		
1.	Coordinator	Dr. Zenera Saqib (Demonstrator of Anatomy)
2.	DME Focal Person	Dr. Sidra Hamid
3.	Co-coordinator	Dr. Qurat Ul Ain (Senior Demonstrator of Anatomy)
4.	Co-Coordinator	Dr. Uzma Kiyani (Senior Demonstrator of Physiology)
5.	Co-coordinator	Dr. Nayab Ramzan (Senior Demonstrator of Biochemistry)

DME Implementation Team		
1.	Director DME	Prof. Dr. Rai Muhammad Asghar
2.	Implementation Incharge 1st & 2nd Year MBBS & Add. Director DME	Prof. Dr. Ifra Saeed
3.	Assitant Director DME	Dr. Sidra Hamid
4.	Editor	Muhammad Arslan Aslam

Module I - Foundation Module

Introduction: In the Foundation Module 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 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

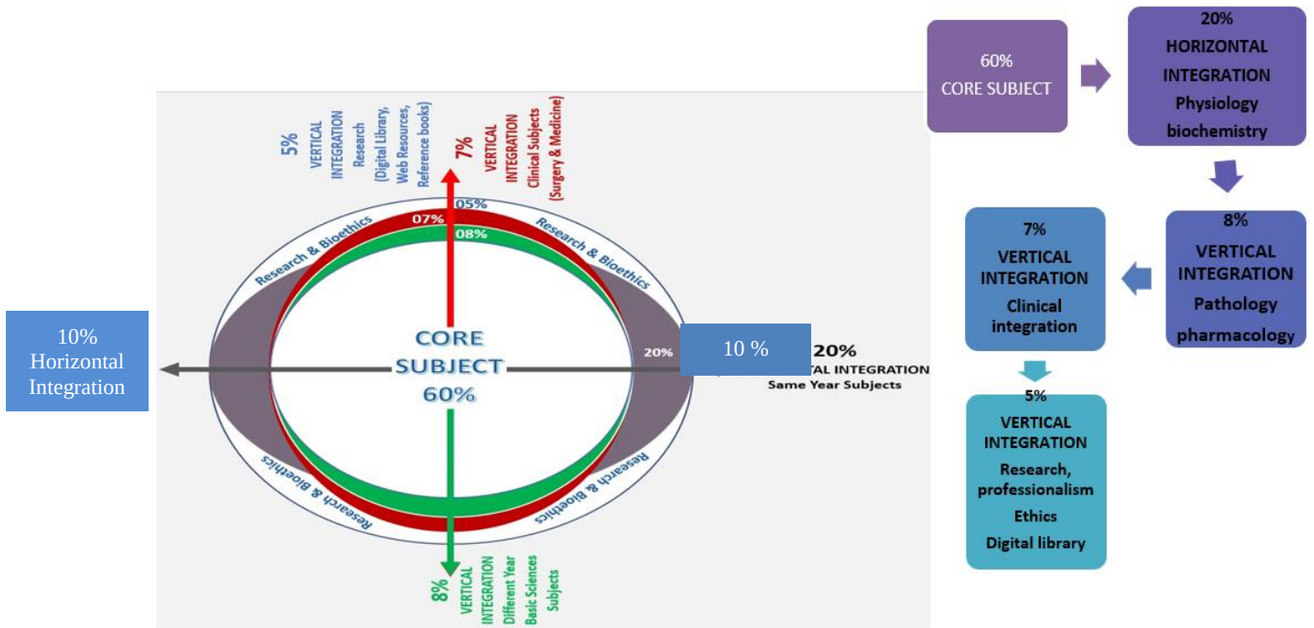
Table1. Domains of Learning According to Blooms Taxonomy

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 (Masstricht 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 & Assesssments

Contents

- **Introduction to RMU and Disciplines**
- **Medical Education and Integrated Disciplines**
- **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

Orientation Week

Introduction to RMU and Disciplines

Medical Education and Integrated Disciplines				
Topic	Facilitator	Learning Objectives	Teaching Strategy	Assessment Tool
Introduction to RMU and Allied Hospitals	Vice Chancellor	Honorable VC will welcome and introduce the University and Allied Hospitals.	LGIS	MCQS
		The students will be able to:		
Introduction to Medical Education Department Introduction to Integrated Modular System and Foundation Module	Assistant Director DME	• Introduce DME • Define Medical Education • Discuss its role • Describe CME • Appreciate role of DME in their curriculum • Appreciate role of DME in attendance monitoring • Illustrate the application • Leave submission process • Outline the RMU Curriculum structural organization, (integrated modular system) • Describe Learning resources used in study guides	LGIS	MCQS
Introduction to Basic Sciences	Lecture by HODs	• Define Anatomy • Define Physiology • Define Biochemistry • Define Pathology • Define Community Medicine • Define Forensic Medicine • Define Pharmacology	LGIS	MCQS
Introduction to Medicine & Allied	Lecture by Dean of Medicine & Allied	• Define medicine • Discuss History of medicine • Describe Islamic concepts of medicine • Identify Basic sciences involved in medicine • Identify Clinical subjects and their role	LGIS	MCQS

		• Describe practice of medicine		
Introduction to Teaching And Learning Strategies With Emphasis On SGD/LGIS/TBL (Team base learning)/PAL (Peer Assisted learning)/Internet & Literature Search	Basic Science Team & DME	• Differentiate between various Teaching & Learning strategies • Describe the process • Enlist different roles of students and facilitator in mentioned teaching sessions	LGIS	MCQS
Introduction To Use Of Laboratory Facilities / Equipment And Safety Measures (Biochemistry and Pathology)	Team members (Biochemistry and Pathology)	• Recall precautionary measures mandatory during practical sessions and skill lab • Recall safety measures during blood handling • Demonstrate use of various glass ware • Demonstrate use of lab instruments	LGIS	MCQS
Study Skills-I (Medical Educationist and Behavioral Sciences)	Behaviour Science and DME team member	• Define study skills or study strategies (how to study?) • Describe the: • Methods based on memorization such as rehearsal and rote learning • Methods to retain the content in long term memory • Methods based on communication skills e.g., reading and listening • Principles of TBL & PAL	LGIS	OSPE
Study Skills-II	Behaviour Science and DME team member	• Describe the: • Methods based on condensing information, summarizing and the use of keywords • Methods based on visual imagery • Methods based on acronyms and pneumonics • Methods based on time management, organization and lifestyle changes	LGIS	MCQS
Islam and Medical Science	Mufti Naeem sab	• Discuss role of Islam and importance of Islam in Medical Science	LGIS	MCQS

Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)

Anatomy Large Group Interactive Session (LGIS)

Topic	Learning Objectives At The End Of One Hour The Lecture The Student Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to General Anatomy	• Define the term Anatomy and its various branches	C1	LGIS	SAQ MCQ VIVA
	• 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				
Introduction to Human Development	• Discuss significance and importance of studying Embryology.	C2	LGIS	SAQ MCQ VIVA
	• 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		
Oogenesis	• Discuss role of female hormones during oogenesis	C2	LGIS	SAQ MCQ
	• 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		VIVA
	• 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		
Spermatogenesis	• Define spermatogenesis.	C1	LGIS	SAQ MCQ VIVA
	• 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		
Female Reproductive Cycles	• Understand Ovarian and Uterine cycle	C1	LGIS	SAQ MCQ VIVA
	• Correlate Ovarian and Uterine cycles	C3		
	• Describe different phases of Ovarian and Uterine cycles	C2		
	• Enumerate female sex hormones	C1		
	• Discuss functional significance of female reproductive hormones in reproductive cycles	C2		
	• Discuss the anovulatory cycle in female	C3		
	• Understand the bio-physiological aspects female reproductive cycle	C2		
	• Focus on provision of curative and preventive health care services	C3		
	• Read a relevant research article	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Use HEC digital library	C3		
Ovulation and Fertilization	• Describe follicular development, ovulation and subsequent events in ovary	C2	LGIS	SAQ MCQ VIVA
	• Give an account on role of leutinizing hormone in ovulation	C1		
	• Discuss capacitation in female genital tract	C2		
	• Describe different phases and results of fertilization	C2		
	• Enlist causes of infertility.	C1		
	• Enlist different technologies of assisted fertilization	C1		
	• Discuss different techniques of assisted reproduction with special emphasis on IVF	C3		
	• Discuss the bio-physiological aspects of ovulation and fertilization	C2		

	• 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		
Cleavage and Formation of Blastocyst	• Define cleavage	C1	LGIS	SAQ MCQ VIVA
	• Define compaction	C1		
	• Describe blastocyst formation	C2		
	• Understand the bio-physiological aspects of cleavage and blastocyst	C2		
	• Correlate clinical condition of cleavage and blastocyst formation	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Understand the curative and preventive health care measures.	C3		
	• Practice principles of bioethics	C3		
	• Read a relevant research article	C3		
	• Use HEC digital library	C3		
Development Of Mammary Gland	• Describe the Sources of development of mammary gland .	C2	LGIS	SAQ MCQ VIVA
	• Discuss different stages of activity of mammary gland .	C2		
	• Understand the bio-physiological aspects of mammary gland.	C2		
	• Correlate clinical conditions of mammary gland	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Practice principles of bioethics.	C3		
	• Understand the curative and preventive health care measures.	C3		
	• Read a relevant research article;	C3		
	• Use HEC digital library.	C3		
Histology				
Types of Epithelium	• Define Epithelium	C1	LGIS	SAQ MCQ VIVA
	• Discuss general features of Epithelial cells (basal, apical and lateral surfaces)	C2		
	• Classify epithelium	C2		
	• Explain the histological structure of simple epithelium	C2		
	• Describe the location and functions of simple epithelium	C2		
	• Classify stratified epithelium.	C2		
	• Describe the functions and distribution of stratified epithelium	C1		

	• Appreciate the differences between stratified and psuedostratified epithelium	C2		
	• Describe characteristics of transitional epithelium	C2		
	• Correlate clinical aspects of different types of epithelia	C3		
	• To understand the bio-physiological aspects of different types of epithelia	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Understand the curative and preventive health care measures.	C3		
	• Practice principles of bioethics	C3		
	• Read a relevant research article	C3		
	• Use HEC digital library	C3		
Specializations of Apical Cell Surface	• Enumerate different apical modifications of cells	C1	LGIS	SAQ MCQ VIVA
	• Describe histological structure of each apical modification.	C2		
	• Discuss functions of each type of apical modifications	C2		
	• Correlate clinical aspects of Specializations of apical cell surfaces	C3		
	• Understand the bio-physiological aspects of specializations of apical cell surface	C2		
	• Enlist causes of infertility.	C 1		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Practice principles of bioethics	C3		
	• Understand the curative and preventive health care measures.	C3		
	• Read a relevant research article	C3		
	• Use HEC digital library	C3		
Intercellular Junctions and Adhesions	• Enumerate different cell junctions	C1	LGIS	SAQ MCQ VIVA
	• Describe histological structure of different cell junctions	C2		
	• Understand the bio-physiological aspects of intercellular junctions and adhesions	C2		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Practice principles of bioethics	C3		
	• Understand the curative and preventive health care measures.	C3		
	• Read a relevant research article	C3		
	• Use HEC digital library	C3		
Glandular Epithelium	• Define gland.	C1	LGIS	SAQ MCQ VIVA
	• Compare between exocrine and endocrine glands with examples.	C2		
	• Classify glands on the basis of morphology, secretory product, and mode of secretion.	C2		
	• Understand the bio-physiological aspects of glands.	C2		
	• 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		
Development and Histology Of Mammary Gland	• Describe the Sources of development of mammary gland	C2	LGIS	SAQ MCQ VIVA
	• Discuss the ultra structure of mammary gland	C2		
	• Discuss different stages of activity of mammary gland	C2		
	• Understand the bio-physiological aspects of mammary gland	C2		
	• Correlate clinical conditions of mammary glands.	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		

Physiology Large Group Interactive Session (LGIS)

Topic	Learning Objectives At The End Of Lecture Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Introduction to Physiology & Physiology Department	• Introduce faculty members	C1	LGIS SGD	SAQ MCQ VIVA
	• Define physiology	C2		
	• Classify different branches of physiology	C2		
	• Explain the importance of physiology in medical and clinical sciences	C1		
Cell physiology & Homeostasis	• Understand functional organization of human body from cell to systems	C2	LGIS SGD	M SAQ MCQ VIVA
	• Differentiate between prokaryotes and eukaryotes.	C2		
	• Discuss salient features of cell theory	C2		
	• Define homeostasis	C1		
	• Describe homeostatic mechanisms of the major functional systems.	C1		
Concept of Body Fluid and	• Describe distribution of total body water	C1	LGIS SGD	SAQ MCQ VIVA
	• Enlist the proportion of intra cellular and extra cellular fluids.	C1		
	• Differentiate between ECF & ICF	C2		
	• Recall Physical characteristics of normal ECF constituents	C1		

Internal Environment	• Understand the concept of internal environment (which student can differentiate for unicellular and multi cellular organisms.)	C2		
Homeostatic Control System I	• Describe the characteristic of control system of the body.	C1	LGIS SGD	SAQ MCQ VIVA
	• Enlist four control mechanisms of body	C1		
	• Understand the mechanism of positive feedback, negative feedback, feed forward control and adaptive control with examples.	C2		
Homeostatic Control System II	• Recall control mechanisms	C1	LGIS SGD	SAQ MCQ VIVA
	• Give examples	C1		
	• Compare and contrast feed forward and adaptive mechanisms	C2		
	• Define gain of control system	C1		
	• Comprehend gain of the control system	C2		
	• Calculate gain of the feedback system and understand the significance of sign in the formula	C3		
Cellular organelles and cell functions	• Describe cytoskeleton & cell locomotion	C1	LGIS Group presentations	SAQ MCQ VIVA
	• Discuss functions of cilia and amoeboid movement	C2		
	• Describe the mechanism of ATP generation	C1		
	• Enlist three major processes of ATP consumption in the body	C1		
	• Understand cell ingestion and other independent roles of cell	C2		
Cell Membrane and Cell Organelles, I & II	• Enlist functions of ER, golgi apparatus, lysosome & perxosome, mitochondria	C1	LGIS SGD Group presentations	SAQ MCQ VIVA
	• Compare and contrast RER & SER, lysosomes & peroxisomes	C2		
	• Understand Docking mechanism	C2		
	• Discuss physiological importance of mitochondria & ATP	C2		
	• Describe the structure of cell membrane: fluid mosaic model	C1		
	• Enlist functions of cell membrane	C1		
	• Enlist membrane bound and non-membrane bound organelles	C1		
	• Differentiate between cytoplasm and cytosol	C2		
Cell membrane Ion channels, Transport across the cell membrane: Diffusion	• Enlist various types of ion channels	C1	LGIS SGD	SAQ MCQ VIVA
	• Enumerate modes of transport mechanism across the cell membrane	C1		
	• Define and discuss factors affecting diffusion	C1		

Transport across cell membrane: Osmosis	• Recall transport mechanism across the cell membrane with special emphasis on osmosis and osmotic pressure	C1	LGIS SGD	SAQ MCQ VIVA
	• Recall factors affecting osmosis	C1		
	• Comprehend the concept of moles and osmoles	C2		
	• Recall osmolarity of body fluids	C1		
	• Discuss tonicity	C2		
	• Comprehend concept of isotonic, hypertonic and hypotonic	C2		
Transport across cell membrane: Active transport I & II	• Define active transport	C1	LGIS SGD	SAQ MCQ VIVA
	• Classify active transport	C2		
	• Comprehend various types of active transport with examples with special emphasis on Na-K pump	C2		
Structure of nucleus and ribosomes, Cell Division	• Describe structure of nucleus and ribosome	C1	LGIS PBL	SAQ MCQs VIVA
	• Discuss vaults	C2		
	• Understand basic concepts about DNA and	C2		
	• RNA	C1		
	• Recall various types of RNA and their functions	C1		
	• Enlist and Draw steps of mitosis and meiosis	C2		
	• Comprehend role of different parts of chain of DNA as genes like TATA box			
Genetics Transcription & Translation	• Define & Explain Genetics, Transcription & Translation		LGIS PBL	SAQ MCQs VIVA
	• Describe Genetic control of protein synthesis			
	• Differentiate between apoptosis & Necrosis			
Cellular control mechanism ,Cell cycle, Programmed cell death	• Describe different cellular control mechanisms regarding gene regulation	C1	LGIS PBL	SAQ MCQs VIVA
	• Explain Cell differentiation, apoptosis and cellular changes in cancer	C2		
Intracellular communication and cell junctions	• Describe the structure of various intracellular connections	C1	LGIS SGD	SAQ MCQ VIVA
	• Give the physiological importance of cell junctions	C1		
Signal Transduction	• Describe the various 2nd messenger systems	C1	LGIS	SAQ MCQ VIVA
	• Discuss physiological significance	C2		

Biochemistry Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the End Of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Cell organelles				
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	LGIS	MCQs, SAQs & Viva
Cell membrane and transport across cell membrane				
Cell membrane	• Explain composition of cell membrane • Understand fluid mosaic model • Describe functions performed by each component	C2 C2 C2	LGIS	MCQs, SAQs & Viva
Functions of cell membranes	• Discuss functions & importance of cell membrane	C2	LGIS	MCQs, SAQs & Viva
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	LGIS	MCQs, SAQs & Viva
Physicochemical properties of cell				
Osmosis, osmotic pressure	• Define osmosis and osmotic pressure. • Discuss biochemical application of osmotic and oncotic pressure and methods to measure them.	C1 C2	LGIS	MCQs, SAQs & Viva

and oncotic pressure	• Correlate oncotic pressure with clinical scenarios	C3		
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	LGIS	MCQs, SAQs & Viva
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	LGIS	MCQs, SAQs & Viva
Water and pH	• Define pH, Pka, body buffer • Discuss water distribution in the body • Understand dehydration and overhydration	C1 C2 C3	LGIS	MCQs, SAQs & Viva
Enzymes				
Enzymes Introduction	• Define Enzymes. • Explain general functions of enzymes. • Differentiate between coenzyme and cofactors	C1 C2 C2	LGIS	MCQs, SAQs & Viva
Mechanism of enzyme action	• Describe different mechanisms of enzyme action.	C2	LGIS	MCQs, SAQs & Viva
Classification of enzymes	• Discuss different classes of Enzymes	C2	LGIS	MCQs, SAQs & Viva
Properties of Enzymes	• Elaborate the Properties of Enzymes such as specificity for substrate and stereo specificity.	C2	LGIS	MCQs, SAQs & Viva
Factors affecting Enzyme action	• Discuss different factors which increase or decrease the activity of enzymes	C2	LGIS	MCQs, SAQs & Viva
Enzyme inhibitors	• Describe enzyme inhibitors and how the activity of the regulatory enzymes can be modulated for benefit of body	C2	LGIS	MCQs, SAQs & Viva

Enzyme Regulation	• Explain enzyme regulation	C2	LGIS	MCQs, SAQs & Viva
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	LGIS	MCQs, SAQs & Viva
Genetics & Cancer				
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	LGIS	MCQs, SAQs & Viva
Replication	• Describe mechanism of replication of prokaryotes & Eukaryotes	C2	LGIS	MCQs, SAQs & Viva
Transcription	• Describe mechanism of Transcription of prokaryotes & Eukaryotes	C2	LGIS	MCQs, SAQs & Viva
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	LGIS	MCQs, SAQs & Viva
DNA damage & Repair	• Describe mechanism of DNA damage & Repair • Apply knowledge of DNA repair mechanisms in related clinical cases	C2 C3	LGIS	MCQs, SAQs & Viva
Mutations	• Describe different types of mutations with examples	C2	LGIS	MCQs, SAQs & Viva
PCR and Recombinant DNA technology	• Define PCR • Explain mechanism and indications of PCR • Discuss Recombinant DNA technology	C1 C2 C2	LGIS	MCQs, SAQs & Viva

Cancer	• Explain biochemical basis of cancer	C2	LGIS	MCQs, SAQs & Viva

Anatomy Small Group Discussion (SGDs)

Demonstration/Dissection	At the End Of The Demonstration Student Should Be Able To	Learning Domains	Teaching Strategy	Assessment Tool
Anatomicomedical Terminology I (Anatomical Position and Planes)	• Describe different anatomical planes of human body and correlate with radiological anatomy	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• Demonstrate anatomical position of human body • Apply the strategic use of artificial intelligence in healthcare • Practice principles of bioethics • Read a relevant research article	P C3 C3		
Anatomicomedical Terminology - II (Anatomical Terms and Axis of Movements)	• Define different terms related to body parts	C1	Skill lab SGD	MCQ SAQ VIVA OSPE
	• 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		
Anatomicomedical Terminology - III (Cell and Tissues)	• Define cell	C1	Skill lab SGD	MCQ SAQ VIVA OSPE
	• 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		
Anatomicomedical Terminology-IV (Skin and Body Systems)	• Describe general organization of different systems of body	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• 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		
Clavicle	• Determine the side	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• 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		
	• Determine the side	C2		
	• Demonstrate anatomical position, general features, attachments, and articulation. (clavicle and shoulder	P		

Scapula	joints)		Skill lab SGD	MCQ SAQ VIVA OSPE
	• 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		
Humerus	• Determine the side	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• 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		
	• Describe Superficial fascia with cutaneous nerve and vessels of anterior axioappendicular region and tabulate muscles of the anterior axioappendicular region	C2		MCQ
	• Understand the bio-physiological aspects of anterior axioappendicular region.	C1		
	• Strategic use of artificial intelligence in healthcare	C3		

Anterior Axioappendicular Region	• Understand the curative and preventive health care measures • Practice principles of bioethics	C3	Skill lab SGD	SAQ VIVA OSPE
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Use HEC digital library	C3		
	• Read a relevant research article	C3		
Posterior Axioappendicular Muscles	• Tabulate muscles of the pectoral region (origin, insertion, nerve supply, action and applied).	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• 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		
Axilla	• Define axilla	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• Describe its boundaries.	C2		
	• Enumerate the Contents of axilla, (axillary artery with its branches, axillary vein and tributaries, axillary lymphatics, lymph nodes and brachial plexus).	C2		
	• Describe the clinical significance of axillary lymph nodes	C3		
	• Practice principles of bioethics	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		
	• Use HEC digital library	C3		
Brachial Plexus	• Describe the formation of brachial plexus its roots and trunks.	C2		MCQ SAQ
	• Describe the origin and root value of different nerves arising	C2		

	• Understand the curative and preventive health care measures	C3	Skill lab SGD	VIVA OSPE
	• Practice principles of bioethics	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Read a research article on brachial plexus	C3		
	• Use HEC digital library	C3		
Brachial Plexus Injuries	• Describe the different neurological deficits arising as a result of damaged to roots, trunks and branches of brachial plexus at different levels.	C3	Skill lab SGD	MCQ SAQ VIVA OSPE
	• Describe the origin and root value of different nerves arising	C3		
	• Read a research article on brachial plexus	C3		
	• Understand the curative and preventive health care measures	C3		
	• Practice principles of bioethics	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Read a relevant research article	C3		
	• Use HEC digital library	C3		
Breast	• Describe the extent of breast	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• Describe the relations of breast	C2		
	• Describe structure of gland.	C2		
	• Discuss the blood supply, venous drainage and lymphatics.	C2		
	• Correlate Clinical picture and lymphatic spread in breast carcinoma.	C3		
	• Discuss congenital anomalies of breast	C3		
	• Practice principles of bioethics	C3		
	• Understand the curative and preventive health care measures	C3		
	• Read a relevant research article	C3		
	• Apply the strategic use of artificial intelligence in healthcare			

	• Use HEC digital library	C3		
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.	C2	Skill lab SGD	MCQ SAQ VIVA OSPE
	• Describe neurovascular supply.	C2		
	• Understand the curative and preventive health care measures	C3		
	• Practice principles of bioethics	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Read a relevant research article	C3		
	• Use HEC digital library	C3		
Surface Anatomy & Radiology	• Discuss the surface anatomy of axioappendicular region.	C2	Skill lab SGD	MCQ VIVA OSPE
	• Interpret the normal radiologic appearance of bones in axioappendicular region.	C3		
	• Apply the strategic use of artificial intelligence in healthcare	C3		
	• Practice principles of bioethics	C3		
	• Understand the curative and preventive health care measures	C3		
	• Read a relevant research article	C3		
	• Use HEC digital library	C3		

Physiology Small Group Discussion (SGDs)

Topic	Learning Objectives	Learning Domain	Teaching Strategy	Assessment Tools
Cell and homeostasis	Understand functional organization of human body	C2	SGD	MCQ SAQ VIVA
	Discuss homeostasis/control systems of the body	C2		
Cell cytoskeleton and locomotion and cell functions	Discuss the functions of cell	C2	SGD	MCQ SAQ VIVA
	Describe cell cytoskelation	C1		
	Describe the structure of cell membrane	C1	SGD	MCQ
	Enlist various ion channels	C1		

Transport across cell membrane	Discuss transport mechanism across the cell membrane with special emphasis on diffusion and osmosis	C2		SAQ VIVA
	Explain the types of active transport	C2		
Intracellular communication and cell junction, signal transduction	Describe the structure and function of various intracellular connections Discuss second messanger system	C1 C2	SGD	MCQ SAQ VIVA

Biochemistry Small Group Discussion (SGDs)

Topic	Learning Objectives	Learning Domain	Teaching Strategy	Assessment Tools
Cell and Cell Membrane	Explain Composition of Normal Cell & Cell Organelles	C2	SGD	MCQ SAQ VIVA
	Describe Composition of Cell Membrane Understand Fluid Mosaic Model	C2		
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	SGD	MCQ SAQ VIVA
	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	SGD	MCQ SAQ VIVA

Anatomy Self Directed Learning (SDL)

Topics Of SDL	Learning Objectives	Learning Resources
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
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
Anterior axioappendicular muscles	• 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/
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/
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
Brachial plexus	• 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
Brachial plexus injuries	• 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
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

Physiology Self Directed Learning (SDL)

Topics Of SDL	Learning Objectives	Learning Resources
Concept of body fluids & internal environment.	• Introduction • Concept of extracellular and intracellular fluid • Homeostasis • Examples of control system	❖ Ganong's Review of Medical Physiology.25TH Edition, General principles and Energy productionin Medical Physiology (chapter 01, Page 03) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.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).
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.25TH Editions, 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)
	• Receptors and its types • Cellular signaling and various	❖ Ganong's Review of Medical Physiology.25TH Edition., Overview of Cellular Physiology inMedical Physiology (chapter 02, Page 33-44)

Intracellular communication and cell junction	mechanisms • Signal transduction • Hormone receptors and their activation • Second messenger mechanisms	❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. 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)
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.25TH Editions, 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)
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)
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 MedicalPhysiology (Chapter 01, Page 63) ❖ Textbook of Medical Physiology by Guyton & Hall.14thEdition. ❖ (Section 01, Chapter03, Page31)
Structure of Nucleus, Ribosomes andCell	• 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. 8TH Edition.

Division		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)
Transport across cell membrane andits various types (osmosis, diffusion, primary andsecondary 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.25THEdition, 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)

Biochemistry Self Directed Learning (SDL)

Topics Of SDL	Learning Objectives	Learning resources
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	❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (chapter 1, page 3)
Cell membrane Transport across cell membrane	• Explain composition of cell membrane • Understand fluid mosaic model • Describe functions performed by each component	❖ Harper's illustrated biochemistry 32nd edition (chapter 40 page - 460) ○ ❖ Harper's illustrated biochemistry 32nd

	• 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	edition (Chapter 40 page 467)
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)
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)
Nuleic 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)
Cancer	• • Explain biochemical basis of cancer	❖ Essentials of medical Biochemistry. Mushtaq Ahmad Vol – I 9th edition (Chapter 6 page 168)
Diagonostics 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)
Transciption	• Describe mechanism of Transcription of prokaryotes & Eukaryotes	❖ Lippincott Illustrated reviews of biochemistry 8th edition (Chapter 30 page 459)

Histology Practicals Skill Laboratory (SKL)

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

Physiology Practicals Skill Laboratory (SKL)

Topic	Learning Objectives	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to Microscope	• Identification of different parts especially focusing lenses and their uses	C1	Skill Lab	OSPE
	• Focusing technique of different blood slides e.g Neubauer's chamber TLC & DLC slides	P		
Introduction to Wintrobe & Westergen tube	• Identify the wintrobe and westergen tubes	C1	Skill Lab	OSPE
	• Should know the differences between two tubes and uses in different methods	P		
Apparatus identification	• Complete study of Neubauer's slide, calculation of volumes of corner squares and central squares	P	Skill Lab	OSPE

(Introduction to Neubauer's chamber, Red Blood Cell (RBC) pipettes& White Blood Cell (WBC) pipette	• Important differentiating points between WBC & RBC's pipettes	C1		
	• How to dilute the two pipettes	P		
	• Should know the composition of diluting fluids	C1		
Apparatus identification (Introduction to centrifuge machine)	• Be aware with the electrical connections of centrifuge machine and to control different speeds	P, A	Skill Lab	OSPE

Biochemistry Practicals Skill Laboratory (SKL)

Topic	Learning Objectives At The End Of Practical Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to Laboratory precautions and glassware	• Understand the use of laboratory glassware • State precautions while working in the laboratory	P	Skill Lab	OSPE
Introduction of Laboratory equipments	• Describe parts and working of different laboratory equipments	P	Skill Lab	OSPE
Physic chemical principals: emulsification and surface tension	• Demonstrate mechanism of surface tension and emulsification	P	Skill Lab	OSPE
Physic chemical principals: tonicity and adsorption	• Demonstrate effects of solutions of different tonicity on red cells (isotonic, hypotonic and hypertonic) • Illustrate process of adsorption.	P	Skill Lab	OSPE

SECTION - III

Orientation Sessions of Medical Education and Mangement Courses

Content

- Opening Ceremony (DME)
- Introduction to Digital Services Of RMU
- Introduction to Integrated Modular Curriculum, Study Guide sand RMU Policies
- Assessment Model of RMU & Continuous Internal Assessment
- Research Model of RMU (IUGRC), Biomedical Ethics Family Medicine, Artificial Intelligence
- Introduction to Different Teaching Strategies, Role of Team Leader Facilitator and Students SGD/LGIS/TBL/PAL/INTERNET & Literature Group activity (DME)
- Orientation to Integrated Modular System for Pre-clinical Years (DME)
- Lecture on Feedback (DME)
- Mission and Vision (DME)
- Introduction to Pharmacology
- Introduction to Pathology
- Introduction to Community Medicine (Community Medicine)
- Introduction to Medicine (Medicine)

Opening Ceremony (DME)

Program of Welcome Ceremony			
Sr. No.	**Activity**	**Name**	**Time**
1.	Seating of Students in Auditorium		8.00AM To 8:30AM
2.	Welcome words and announcement of the Ceremony	Dr. Sidra Hamid	9:00AM
3.	Tilawat-e-Quran Pak	Dr. Fahad Anwar	9:05AM
4.	Haddiya-e-Naat	Mr. Waqar	9:10AM
5.	Invitation to distinguished guests on Stage		9:15AM
6.	Vice Chancellor welcome address	Prof. Dr. Muhammad Umar	9:30AM
7.	Welcome address by Principal RMC	Prof. Dr. Jahangir Sarwar Khan	9:45AM
8.	White Coat Ceremony (05 High achievers among boys) (5 High achievers among girls)	Prof. Dr Muhammad Umar	10:00AM
9.	Oath Taking	Prof. Dr. Muhammad Umar	10:15AM
10.	Welcome Note by Director DME	Prof. Dr Rai Muhammad Asghar	10:30AM
11.	Introduction to IT services RMU by Director IT	Mr. Hafiz Shahid Rasool	10:45AM
12.	Introduction to Hostel & Transportation	Prof. Dr. Naeem Zia	11:00AM
Concluding remarks by Dr. Sidra Hamid			

Medical Education

Topic	Learning Objectives At the end of the lecture the student should be able to	Teaching Strategy	Assessment Tool
Orientation of Integrated Modular system, Intoduction to study guides and RMU Policies	• Understand the concept of integration • Understand the orientation of integrated modular curriculum of RMU • How to use Study Guides • Introduction to different policies of RMU	LGIS	MCQs
Introduction to Assessment Model of RMU	• Discuss the concept of Continous internal assessment • To comprehend the rules of eligibility of professional examination	LGIS	MCQs
RMU Goes digital	• Introduction to LMS, CMS and MS Teams. • Inrtorduction to RMU website • How to use HEC digital library • How to use up to date website	LGIS	MCQs
Vision & Mission	• Discuss the vision and mission of RMU • Discuss the implications of under standing vision and mission of and organization	LGIS	MCQs
Leadership	• Define clinical leadership • Differentiate between management and leadership • Types of leadership style	LGIS	MCQs
Professionalism	• Define medical professionalism • Describe attributes of healer and professional • Discuss the social contract of medical profession • List values, skills and behavior for professionalism	LGIS	MCQs
Lecture on feedback	• Receive and provide effective feedback • Describe types of feedback • Discuss principles of feedback • Discuss essential elements of feedback	LGIS	MCQs
Islam and Medical Science	• Discuss role of Islam and importance of Islam in Medical Science	LGIS	MCQs

Orientation Sessions and Mangement Courses lectures

Sr. No	Date/Day	Department	Time	Topic of Lectures	Teachers Name & Contact #
1	12-02-24 Monday	DME	08:30 AM – 11:00 AM	Opening Ceremony	Worthy VC RMU, Dean Basic Sciences, DME & DME team, Senior faculty
2	12-02-24 Monday	DME	11:00 AM –11:40 AM	Introduction to Integrated Modular Curriculum, Student Guide and RMU Policies	Dr Sidra Hamid 0331-5025147
3	12-02-24 Monday	Physiology	11:40 AM – 12:20 AM	Assessment Model of RMU And Continuous Internal Assessment	Prof. Dr Samia Sarwar
4	12-02-24 Monday	Family Medicine & Community Medicine	12:20 PM – 01:00 PM	Research Model Of RMU, Biomedical Ethics, Family Medicine, Artificial Intelligence	Dr. Sadia Khan 0343-8509230 Dr. Khula Noreen 0333-5386482
5	12-02-24 Monday	IT Department	01:00 PM – 2:00 PM	Introduction to Digital Services RMU	Hafiz Shahid Rasool (Director IT)
6	15-02-24 Thursday	DME/Bioethics	10.00 AM – 11:00 AM	Introduction to Different Teaching Strategies, Role of Team Leader Facilitator and Students SGD/LGIS/TBL/PAL/Internet & Literature Group activity	Dr Sidra Hamid 0331-5025147 Dr. Rizwana 0323-5375362
7	16-02-24 Friday	Islam And Medical Sciences/ Quran Translation	8.00 AM – 9.00 AM	Islam & medical science (Mulana AbdulWAhid) Introduction to Quran translation	Mufti Naeem Shairazi 0300-5580299 Mulana Abdul Wahid Abassi 0341-5444667
8	16-02-24 Friday	DME	10:00 AM – 11:00 AM	Leadership Professionalism: Dr. Arsalan Introduction to Medical Ethics: Dr. Sidra	Dr. Sidra Hamid 0331-5025147 Dr. Arsalan Mughal 0334-3911629
9	17-02-2024 Saturday	DME	10:00 AM – 11:00 AM	Leadership Professionalism: Dr. Arsalan	Dr. Sidra Hamid 0331-5025147 Dr. Arsalan Mughal 0334-3911629

				Intriduction to medical ethicsDr. Sidra Hamid	
10	19-02-2024 Monday	DME	10:00 AM – 11:50 AM	Entrepreneurship	Dr. Asif
11	23-02-24 Friday	Islam and medical sciences	09:00 AM – 10:00 AM	Introduction to Quran Translation Islam and medical sciences	Mufti Naeem Shairazi 0300-5580299 Mulana Abdul Wahid Abassi 0341-5444667
12	01-03-2024 Friday	DME	9:00 AM – 10:00 AM	Lecture on feedback (Dr. Sidra Hamid) Mission and vision (Dr Arsalan	Dr Sidra Hamid 0331-5025147 Dr. Arsalan Mughal 0334-3911629
13	05-03-24 Tuesday	DME	10:00 AM – 11:00 AM	Lecture on feedback (Dr. Sidra Hamid) Mission and vision (Dr Arsalan	Dr Sidra Hamid 0331-5025147 Dr. Arsalan Mughal 0334-3911629

Introductory Lecture of Different Dicipilnes

Sr. #	Date/Day	Department	Time	Topic of Lectures	Teachers Name & Contact #
Week One					
1.	13-02-24 Tuesday	Behavioral Sciences	11:00 AM – 12:00 PM	Introduction to Behavioral Sciences	Prof. Dr. Asad Tamizudin 0333-5167705
2.	13-02-24 Tuesday	Pharmacology & Pathology	12:00 PM – 01: 00 PM (Even Roll No) 12:00 PM -01:00 PM (Odd Roll No) They will switch at 12:30pm	Introduction to Pharmacology	Dr. Zaheer 0333-5716320
				Introduction to Pathology	Dr. Mudassira 0307-239757
3.	14-02-24 Thursday	Community Medicine	12:20 PM - 1:00 PM	Introduction to Health Research Process and Researcher	Dr. Rizwana 0323-5375362 Dr. Khula Noreen 03335386482
4.	14-02-24 Wednesday	Behavioral Sciences	10.00AM – 11:00 AM	Management of Stress	Dr. Sadia Tahir 0333-4746639 Dr. Zona Tahir 0315-5000055
5.	17-02-24 Saturday	Medicine	11:00 AM – 12:00 PM	Introduction to Medicine	Dr. Sadaf Zaman 0334-5182252 Dr. Sana Ahmad 0322-4726427
Week Three					
6.	26-02-24 Monday	Medicine	10:00 AM – 11:00 AM	Introduction and History of medicine	Dr. Sualeha Imran 0336-5270575 Dr. Ayesha Hijab 0331-2291113

SECTION - IV

Basic and Clinical Sciences (Vertical Integration)

Content

- **CBLs**
- **Vertical Integration LGIS**

Basic and Clinical Sciences (Vertical Integration)

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

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tools
Introduction to Pathology	• Define the following terms: • Etiology • Pathogenesis • Morphology	C1	LGIS SGD	MCQ
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		

Intracellular Accumulations	• Describe types of intracellular accumulations with clinical examples: • Lipids/ fat • Protein • Glycogen • Pigments	C2	LGIS SGD	MCQ
	• Explain mechanism of intracellular accumulations.	C2		
	• Enlist causes of fatty change	C1		
	• Describe the pathogenesis of fatty liver	C1		
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		
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		
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		
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		
Genetic Disorders	• Classify human genetic disorders	C1	LGIS SGD PBL	MCQ
	• Define mutation	C1		
	Define the following inheritance pattern: • Autosomal dominant	C1		

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

Pharmacology

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
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		
Routes of drug administration	• Enlist different routes of drug administration	C1	LGIS	MCQ
	• Discuss the merits and demerits of each route of drug administration	C2		
	• Identify the factors the influence the choice of the route of drug administration	C2		
Absorption of drugs	• Define drug absorption	C1	LGIS	MCQ
	• Identify different sites of drug absorption	C1		
	• Recall transport processes utilized by the drug for absorption across different sites	C1		
	•			
Factors affecting absorption of drugs	• Enlist drug and body related factors affecting drug absorption	C1	LGIS	MCQ
	• Briefly discuss different factors affecting drug absorption	C2		
Distribution of drugs	• Define distribution of drug	C1	LGIS	MCQ
	• Identify different body compartments	C1		
	• Explain distribution of drug through various body compartments	C2		
	• Enlist factors affecting distribution of drugs	C1		

Community Medicine

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Health for All	• Describe Man and medicine towards health for all	C1	LGIS	MCQS
	• Explain different eras of medicine	C1		
	• Describe different systems of medicine	C1		
Genetics	• Discuss Population Genetics	C1	LGIS PBL	MCQS

Medicine

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Medicine Evidence based medicine	• Define evidence-based Medicine	C1	LGIS	MCQs
	• Discuss its applications.	C2		
	• Discuss components of EBM.	C2		
Bedside teaching	• Explain how to take history of the patient and which steps to follow	C2	LGIS	MCQs
General physical examination	• Explain How to perform GPE	C2	LGIS	MCQs
	• Discuss the importance of various signs	C2		
	• Discuss its correlation with systemic examination	C2		

Surgery

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
History taking & its importance	• Enlist the components of a detail history	C1	LGIS	MCQs
	• Describe Importance of each component	C2		
Breast surgery	• Describe the extension of breast	C1	LGIS	MCQs
	• Discuss different condition requiring breast surgery	C1		
	• Enlist steps involved in breast surgery	C1		
	• Describe outcomes of breast surgery	C1		

Obstetrics & Gynaecology

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to Fertilization, Implantation, embryogenesis, congenital abnormalities	• Understand the process of conception and implantation.	C2	LGIS	MCQs
	• Know the importance of embryogenesis	C2		
	• Identify major structural abnormalities	C1		
	• Understand the factors involved in fetal structural abnormalities	C2	LGIS	MCQs

Peadiatrics

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Medical Genetics & Dysmorphology	Describe the chromosomal abnormality and clinical features of trisomy 21	C2	LGIS	MCQs

List of Foundation Module Basic and Clinical Sciences Vertical Integration Lectures

Sr. #	Date/Day	Department	Time	Topic of Lectures	Teachers Name & Contact #
			Week One		
1.	13-02-24 Tuesday	Behavioral Sciences	11:00 AM – 12:00 PM	Introduction to Behavioral Sciences	Prof. Dr. Asad Tamizudin 0333-5167705
2.	13-02-24 Tuesday	Pharmacology & Pathology	12:00 PM – 01: 00 PM (Even Roll No) 12:00 PM -01:00 PM (Odd Roll No) They will switch at 12:30pm	Introduction to Pharmacology	Dr. Zaheer 0333-5716320
				Introduction to Pathology	Dr. Mudassira 0307-239757
3.	14-02-24 Thursday	Community Medicine	12:20 PM - 1:00 PM	Introduction to Health Research Process and Researcher	Dr. Rizwana 0323-5375362 Dr. Khula Noreen 03335386482
4.	14-02-24 Wednesday	Behavioral Sciences	10.00AM – 11:00 AM	Management of Stress	Dr. Sadia Tahir 0333-4746639 Dr. Zona Tahir 0315-5000055
5.	15-02-24 Thursday	Community Medicine	1.00 PM - 2.00 PM	Characteristic of Research Process and Health Research Process	Dr. Rizwana 0323-5375362 Dr. Imran Younas 0345-5892287
6.	16-02-24 Friday	Pharmacology	11:00 AM - 12:00 PM	Route of Drug Administration	Dr. Zoefishan 0321-8826591
7.	17-02-24 Saturday	Medicine	11:00 AM – 12:00 PM	Introduction to Medicine	Dr. Sadaf Zaman 0334-5182252 Dr. Sana Ahmad 0322-4726427
8.	17-02-24 Saturday	Community Medicine	1:00 PM - 2:00 PM	Research III: Basis of ethics in health research	Dr. Rizwana 0323-5375362 Dr. Muniba Iqbal 0335-5609069
			Week Two		
9.	21-02-24 Wednesday	Pathology	10:00 AM – 11:00 AM	Cellular Response to Injury	Dr. Abid 0300-5332565 Dr. Ayesha 0311-5185989
10.	21-02-24 Wednesday	Pharmacology	11:00 AM – 12:00 PM	Absorption of Drugs	Dr. Arsheen 0335-5425558
11.	22-02-24 Thursday	Pathology	8:00 AM – 9:00 AM	Intracellular accumulations	Dr. Abid 0300-5332565 Dr. Ayesha 0311-5185989

12.	23-02-24 Friday	Pharmacology	11:00 AM – 12:00 PM	Factors affecting drug absorption	Dr. Memuna 0333-0430482
23	24-02-24 Saturday	Pharmacology	11:00 AM – 12:00 PM	Distribution of drugs	Dr. Uzma 0336-5178766
Week Three					
24	26-02-24 Monday	Medicine	10:00 AM – 11:00 AM	Introduction and History of medicine	Dr. Sualeha Imran 0336-5270575 Dr. Ayesha Hijab 0331-2291113
25	28-02-24 Wednesday	Pathology	9:00 AM – 10:00 AM	Pigments	Dr. Ayesha 0311-5185989 Dr. Abid 0300-5332565
26	29-02-24 Thursday	Pediatrics	8.00 AM – 9.00 AM	Medical genetics and Dysmorphology	Dr. Sadaf Ijaz 03335277579 Dr. Mamoona Qudrat 0333-5437579
27	01-03-24 Thursday	Community Medicine	8.00 AM – 9.00 AM	Research IV. basics of ethics in medical research	Dr. Rizwana 0323-53753632 Dr. Muniba Iqbal 0335-5609069
Week Four					
29	04-03-2024 Monday	Pathology	9:00 AM – 10:00 AM	Free radical and reactive oxygen species	Dr. Ayesha 0311-5185989 Dr. Abid 0300-5332565
31	06-03-24 Wednesday	Pathology	10:00 AM – 11:00 AM	Irreversible injury/necrosis	Dr. Ayesha 0311-5185989 Dr. Abid 0300-5332565
32	08-03-24 Friday	Pathology	8:00 AM – 9:00 AM	Irreversible Cell Injury/Apoptosis	Dr. Ayesha 0311-5185989 Dr. Abid 0300-5332565
Week Five					
33	11-03-24 Monday	Medicine	11:00 AM – 11:50 AM	Chromosomal Abrasions	Dr. Madeha Nazar 0332-7777658 Dr. Unaiza 0305-7910755
34	12-03-24 Tuesday	Gyne and Obs	11:00 AM – 11:50 AM	Introduction to fertilization, implantation, embryogenesis and congenital anomalies	Dr. Ammara Arooj 0331-5119677 Dr. Maryum 0332-5390464
35	13-03-24 Wednesday	Pathology	9:00 AM – 9:50 AM	Genetic disorders	Dr. Ayesha 0311-5185989 Dr. Abid 0300-5332565
36	15-03-24 Friday	Medicine	11:00 AM – 12:00 PM	History taking and general physical examination	Dr. Imran saeed 0333-5357955 Dr. Saima Mir 0343-5761430

SECTION - V

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.

The Holy Quran Translation lecture

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to Quran Translation	• Understand and apply ethical considerations in Quranic translation.	C2	LGIS	SAQ
Islam and medical sciences	• Co-relate Islamic concepts given in various verses of The Holy Quran with Medical Sciences	C2	LGIS	SAQ

Biomedical Ethics & Professionlism

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to History of Medical Ethics	• To appraise the historical perspective of Hippocratic oath • Understanding the beginnings of contemprory bioethics to address ethical dilemmas	C2 C2	LGIS	MCQs

Behavioral Sciences

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to Behavioral Sciences	• To describe Holistic and Traditional Allopathic medicine.	C1	LGIS	MCQs
Management of stress	• Define the types of stress, its causes and management of stress	C1		

Family Medicine

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to Family Medicine & its application in health care system	• Describe presenting complaints of patients with body aches • Disscus complications of body aches • Descirbe intial treatment of patients with body aches • Know when to refer patient to consultant/ Hospital	C3	LGIS-1	MCQs

Artificial Intelligence (Innovation)

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to Artificial Intelligence	• Discuss fractures of upper limb with their clinical significance. • Discuss role of artificial intelligence in interpretation of radiographs	C2	LGIS	MCQS

Life Style and Prevention

Topic	**Learning Objectives At the end of the lecture the student should be able to**	**Learning Domain**	**Teaching Strategy**	**Assessment Tool**
Healthy Lifestyle: A Foundation for Medical Professionals	• Understand the components of a healthy lifestyle. • Recognize the challenges of maintaining a healthy lifestyle as medical students. • Develop strategies to incorporate healthy habits into their routines.	C2	LGIS	MCQS

Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
	Theoretical Lecture Based Teachings			
Introduction to Community Medicine	Define Community Medicine, public health, preventive medicine	C1		
	Differentiate Community medicine and preventive medicine	C2		
	Elaborate evolution of preventive medicine/public health	C2		
	Discuss role of public health in prevention of diseases	C2		
	Discuss importance of public health	C2		
Introduction to Health Research process and researcher (Research-I)	• Define Health Research & Concept of Health research methods.	C1	LGIS-1	MCQs
	• Understand background and value of research in health & human development	C2		
	• Elaborate Fundamental types and fields of health research covering;	C2		
	- Basic & Applied Research - Quantitative & Qualitative Research - Collaborative & Multidisciplinary research - Health Research triangle	C2		
	• Conceptualize the drivers of research Including;	C2		
	- Curiosity - Health needs - Opportunity Profit • Describe meanings of HR & HRM			
	• Appreciate role of HR in healthcare practices and human development	C2		
	• Differentiate among various types and fields of HR	C2		
	• Explain different drivers of HR	C2		
Characteristics of research and health research methods (Research-II)	• Explain meanings of various characteristics of health research process so as to	C2	LGIS-2	MCQs
	• Differentiate research activity from non-research activity.	C2		
	• Elaborate ingredients of researcher	C2		
	• Appreciate the importance of commands in certain pre-requisite subjects & skills before undertaking a research study.	C2		
	• Define Health Research	C1		
	• Discuss the criteria for selection of a research topic	C2		

	• Elaborate the types of variable	C2		
	• Differentiate between qualitative and quantitative data	C2		
Basics of Ethics in Health Research (Research-III)	• Appreciate value of ethics in conduct of Health Research.	C2	LGIS-3	MCQs
	• Explain basic ethical principles of health research.	C2		
	• Interpret the application of data collection ethics	C2		
	• Explain ethics of research methods	C2		
Basics of Ethics in Health Research (Research-IV)	• Narrate responsibility for ethics in HR.	C2		
	• Explain Nuremburg code and importance of ethics in current research trends.	C2		
	• Elaborate General ethical principles including explanation of 04 basic principles of Beneficence, non-maleficence, respect and justice	C2		
Five steps of EBM	• Discuss Five steps of EBM	C2	LGIS-3	MCQs

Enterprenuership

Topics	Brief Note	Learning Outcomes
Ideate Initial Idea	How it would create value	Understand the concept of ideation in the entrepreneurial context. Learn techniques for generating creative and innovative business ideas. Develop skills to evaluate and refine initial ideas for feasibility and viability.

Digital Literacy Module

Topic	Learning Objectives At the end of the lecture the student should be able to	Teaching Strategy	Assessment Tool
RMU Goes digital	• Introduction to LMS, CMS and MS Teams. • Inrtorduction to RMU website • How to use HEC digital library • How to use up to date website	LGIS	MCQs

List of Foundation Module Spiral Courses Lectures

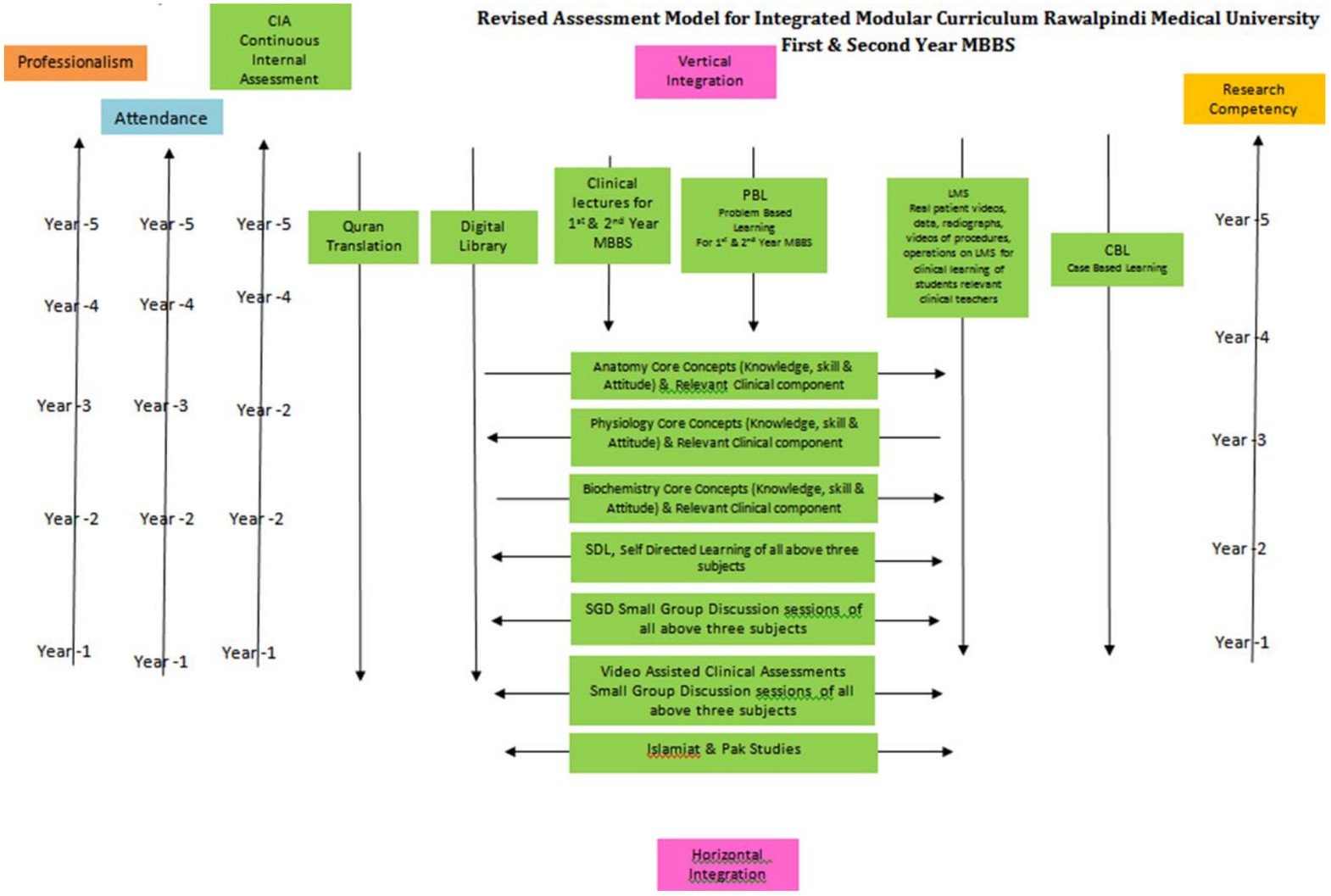
Sr. No	Date/Day	Department	Time	Topic of Lectures	Teachers Name & Contact #
4	12-02-24 Monday	Family Medicine & Community Medicine	12:20 PM – 01:00 PM	Research Model Of RMU, Biomedical Ethics, Family Medicine, Artificial Intelligence	Dr. Sadia Khan 0343-8509230 Dr. Khula Noreen 0333-5386482
5	12-02-24 Monday	IT Department	01:00 PM – 2:00 PM	Introduction to Digital Services RMU	Hafiz Shahid Rasool (Director IT)
7	16-02-24 Friday	Islam And Medical Sciences/ Quran Translation	8.00 AM – 9.00 AM	Islam & medical science (Mulana AbdulWAhid) Introduction to Quran translation	Mufti Naeem Shairazi 0300-5580299 Mulana Abdul Wahid Abassi 0341-5444667
8	16-02-24 Friday	DME	10:00 AM – 11:00 AM	Leadership Professionalism: Dr. Arsalan Introduction to Medical Ethics: Dr. Sidra	Dr. Sidra Hamid 0331-5025147 Dr. Arsalan Mughal 0334-3911629
9	17-02-2024 Saturday	DME	10:00 AM – 11:00 AM	Leadership Professionalism: Dr. Arsalan Intriduction to medical ethicsDr. Sidra Hamid	Dr. Sidra Hamid 0331-5025147 Dr. Arsalan Mughal 0334-3911629
10	19-02-2024 Monday	DME	10:00 AM – 11:50 AM	Entrepreneurship	Dr. Asif
11	23-02-24 Friday	Islam and medical sciences	09:00 AM – 10:00 AM	Introduction to Quran Translation Islam and medical sciences	Mufti Naeem Shairazi 0300-5580299 Mulana Abdul Wahid Abassi 0341-5444667

SECTION - VI

Assessment Policies

Contents

- **Assessment plan**
- **Types of Assessment:**
- **Modular Examinations**
- **Block Examination**
- **Table 4: Assessment Frequency & Time in Foundation Module**



Gauge for Continuous Internal Assessment (CIA)

Red Zone	High Alert	Yellow Zone	Green Zone	Excellent	Extra Ordinary
0 - 25%	26 - *50%	51 - 60%	61 – 70%	71 – 80%	81 - 100%

60% and above is passing marks

Gauge for attendance percentage

Red Zone	High Alert	Yellow Zone-1	Yellow Zone-2	Green Zone	Excellent
0 - 25%	26 - 50%	51 - 60%	61 – 74%	*75 – 80%	81 - 100%

90% is eligibitlly criteria for appearing in professional examination.

Assessment plan

University has followed the guidelines of Pakistan Medical and Dental Council for assessment. Assessment is conducted at the mid modular,modular and block levels.

Types of Assessment:

The assessment is formative and summative.

Formative Assessment	Summative Assessment
Formative assessment is taken at modular (2/3rd of the module is complete) level through MS Teams. Tool for this assessment is best choice questions and all subjects are given theshare according to their hour percentage.	Summative assessment is taken at the mid modular (LMS Based),modular and block levels.

Modular Assessement

Theory Paper	Viva Voce
There is a module examination at the end of first module of each block. The content of the whole teaching of the module are tested in this examination. It consists of paper with objective type questions and structured essay questions. The distribution of the questions is based on the Table of Specifications of the module. (Annexure I attached)	Structured table viva voce is conducted including the practical content of the module.

Block Assessement

On completion of a block which consists of two modules, there is a block examination which consists of one theory paper and a structured viva with OSPE.

Theory Paper	Block OSPE
There is one written paper for each subject. The paper consists of objective type questions and structured essay questions. The distribution of the questions is based on the Table of Specifications of the module.	This covers the practical content of the whole block.

Table 4-Assessment Frequency & Time in Foundation Module I

Block	Sr #	Module – 1 Foundation Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block-I	1	Mid Module Examinations LMS based (Anatomy, Physiology & Biochemistry)	Summative	30 Minutes	3 Hour 15 Minutes	45 Minutes	2 Formative	6 Summative
	2	Topics of SDL Examination on MS Team	Formative	30 Minutes				
	3	End Module Examinations (SEQ & MCQs Based)	Summative	3 Hours 45 Minutes				
	4	Anatomy Structured and Clinically Oriented Viva	Summative	15 Minutes – 20 minutes				
	5	Physiology Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	6	Biochemistry Structured & Clinically oriented Viva voce	Summative	10 Minutes – 15 minutes				
	7	Assessment of Clinical Lectures	Formative	15 Minutes				
	8	Assessment of Bioethics Lectures	Summative	2 Minutes				
	9	Assessment of IUGRC Lectures	Summative	10 Minutes				

Learning Resources

Subject	Resources
Anatomy	**1. Gross Anatomy** 2. Gray's Anatomy by Prof. Susan Standring 42th edition, Elsevier. 3. Clinical Anatomy for Medical Students by Richard S. Snell 10th edition. 4. Clinically Oriented Anatomy by Keith Moore 9th edition. 5. Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III 6. http://www.anatomyzone.com 3D anatomy https://teachmeanatomy.info/ **B. Histology** 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**/ **C. Embryology** 1. Keith L. Moore. The Developing Human 11th edition. 2. Langman's Medical Embryology 14th edition.
Physiology	**A. Textbooks** 1. Textbook Of Medical Physiology by Guyton And Hall 14th edition. 2. Ganong ' S Review of Medical Physiology 26th edition. **B. Reference Books** 1. Human Physiology by Lauralee Sherwood 10th edition. 2. Berne & Levy Physiology 7th edition. 3. Best & Taylor Physiological Basis of Medical Practice 13th edition. 4. Guyton & Hall Physiological Review 3rd edition.
Biochemistry	**Textbooks** 1. Lippincott IIIustrated Reviews: Biochemistry – Wolters Kluwer 2. Harper's Illustrated Biochemistry 32th edition. 3. Lehninger Principle of Biochemistry 8th edition. 4. Biochemistry by Devlin 7th edition.
Community Medicine	**Textbooks** 1. Community Medicine by Parikh 25th edition. 2. Community Medicine by M Illyas 8th edition. 3. Basic Statistics for the Health Sciences by Jan W Kuzma 5th edition.

Pathology/Microbiology	**Textbooks** 1. Robbins & Cotran, Pathologic Basis of Disease, 10th edition. 2. Rapid Review Pathology, 5th edition by Edward F. Goljan MD. 3. http://library.med.utah.edu/WebPath/webpath.html
Pharmacology	**Textbooks** 1. Lippincot Illustrated Pharmacology 9th edition.

SECTION - VII

Time Table

Integrated Spiral Clinically Oriented Modular Curriculum for First Year MBBS

Foundation Module Time Table

First Year MBBS

Session 2023-2024

Batch- 51

Foundation Module Team

Module Name	:	Foundation Module
Duration of module	:	06 Weeks
Coordinator	:	Dr. Zenera Saqib
Co-coordinator	:	Dr. Qurat Ul Ain
Reviewed by	:	Module Committee

Module Committee		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Umar
2.	Director DME	Prof. Dr. Rai Muhammad Asghar
3.	Convener Curriculum	Prof. Dr. Naeem Akhter
4.	Chairperson Anatomy & Dean Basic Sciences	Prof. Dr. Ayesha Yousaf
5.	Additional Director DME	Prof. Dr. Ifra Saeed
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. Zenera Saqib (Demonstrator of Anatomy)
2.	DME Focal Person	Dr. Sidra Hamid
3.	Co-coordinator	Dr. Qurat Ul Ain (Senior Demonstrator of Anatomy)
4.	Co-Coordinator	Dr. Uzma Kiyani (Senior Demonstrator of Physiology)
5.	Co-coordinator	Dr. Nayab Ramzan (Senior Demonstrator of Biochemistry)

DME Implementation Team		
1.	Director DME	Prof. Dr. Rai Muhammad Asghar
2.	Implementation Incharge 1st & 2nd Year MBBS & Add. Director DME	Prof. Dr. Ifra Saeed
3.	Assitant Director DME	Dr. Sidra Hamid
4.	Editor	Muhammad Arslan Aslam

Discipline Wise Details of Modular Content

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				
	• Opening Ceremony (DME) • Introduction to Digital Services Of RMU • Introduction to Integrated Modular Curriculum, Study Guide sand RMU Policies				

- Assessment Model of RMU & Continuous Internal Assessment
- Research Model of RMU (IUGRC), Biomedical Ethics Family Medicine, Artificial Intelligence
- Introduction to Different Teaching Strategies, Role of Team Leader Facilitator and Students SGD/LGIS/TBL/PAL/INTERNET & Literature Group activity (DME)
- Orientation to Integrated Modular System for Pre-clinical Years (DME)
- Lecture on Feedback (DME)
- Mission and Vision (DME)
- Introduction to Pharmacology
- Introduction to Pathology
- Introduction to Community Medicine (Community Medicine)
- Introduction to Medicine (Medicine)

Spiral Courses

• The Holy Quran Translation	The Holy Quran Translation Component • Islam And Medical Science • Introduction to Quran Translation
• Bioethics & Professionalism	• Introduction to history of medical ethics • Leadership Professionalism (DME)
• Artificial Intelligence	• Introduction to Artificial Intelligence
• 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 reserch process • Research III Basis of ethics in health research • Research IV Basics of ethics in medical reserch
• Behavioral Sciences	• Introduction to Behavioral Sciences • Management of stress
• Digital Literacy Module	• How to use Higher Education Commission (HEC) digital libaray.
• Life Style and Prevention	• Healthy Lifestyle: A Foundation for Medical Professionals

Vertical Integration

Clinically content relevant to Foundation module

- Routs of drug administration (Pharmacology)
- Absorption of drugs (Pharmacology)

	• Factors affecting drug absorption (Pharmacology) • Distribution of drugs (Pharmacology) • Cellular response to injury (Pathology) • Intracellular accumulations (Pathology) • Pigments (Pathology) • Free radical and reactive oxygen species (Pathology) • Irreversible cell injury/apoptosis (Pathology) • Genetic disorders (Pathology) • History of medicine (Medicine) • Medicine and allied subjects (Medicine) • Chromosomal abressions (Medicine) • History taking and general physical examination (Medicine)	
Early Clinical Exposure (ECE)		
	• Clinical Rotations	Rotation of students to • Medicine & Allied • Surgery and Trauma • Emergency Department
Hands on Workshop on Basic Life Support (BLS)		
	• Hands on Workshops on BLS	

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 and surface anatomy of axioappendicular region	Clavicle Brachial plexus injuries	Introduction to microscope, Slide preparation, artifact Simple epithelium, Stratified epithelium Mammary gland	Clavicle Scapula Anterioraxioappendicular muscles Posterior Axioappendicular muscles Axilla Brachial plexus Injuries of brachial plexus 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	01
3.	Assistant professor of Anatomy department (AP)	01
4.	Demonstrators of Anatomy department	05

Contact Hours (Faculty)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	12 * 2= 24 hours
2.	Small Group Discussions (SGD)	2*14+ 1*2=30 hours
3.	Case Based Learning (CBL)	2* 2 = 4 hours
4.	Practical / Skill Lab	1.6 * 20 = 32 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)	30hours
	Case Based Learning (CBL)	4 hours
4.	Practical / Skill Lab	6.4 hours
5.	Self-Directed Learning (SDL)	8 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	06

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 = 22 +1 =23 hours	12
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 (First Week)
(12-02-2024 to 17-02-2024)

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
12-02-2024 Monday	Welcome address by VC Introduction to RMU, Allied hospitals, Introduction to Medical Education Department & Integrated Modular System, Introduction to basic & clinical sciences & IT Services	Orientation to RMU Curricular Reforms				Introduction To Digital Services Of RMU
		Introduction to Integrated Modular Curriculum, Study Guide sand RMU Policies	Assessment Model of RMU & Continuous Internal Assessment	Research Model of RMU (IUGRC), Biomedical Ethics Family Medicine, Artificial Intelligence	BREAK 12:00 –12:20PM	Introduction To LMS, CMS, MS Teams (Online Component of Curriculum)
HR	Vice Chancellor RMU: Prof. Dr. Muhammad Umar Principle RMC: Prof Dr. Jahangir Sarwar Prof. Dr. Rai Muhammad Asghar: Director Medical Education * Director IT *	Dr. Sidra Hamid	Dr. Arsalan Mughal	Dr. Sadia Khan & Dr Khaula Noreen		Director IT Hafi Shahid Rasool
Venue	LATIF AUDITORIUM					LATIF AUDITORIUM
13-02-2024 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)**	**PHARMACOLOGY & PATHOLOGY**	Anatomy Bio data forms, Physiology & Biochemistry bio data forms
				Introduction to Behavioral Sciences	Introduction to Pharmacology and Patholgy	
HR	Prof. Dr. Ayesha Yousaf (HOD& DEAN) **	Prof. Dr. Samia Sarwar **	Dr. Aneela**	Prof. Asad Tameeaz ud Din	Dr. Mudasira (Odd) / Dr. Zaheer (Even)	Dr. Fareed, Dr. Kashif Dr. Ali Raza
Venue	Lecture Theatre Complex Hall No 2					Lecture Theatre Complex Hall No 2
14-02-2024 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	**BEHAVIORAL SCIENCES(LGIS)**	**PHYSIOLOGY (LGIS)**		**COMMUNITY MEDICINE**	**BIOCHEMISTRY (LGIS)**
	Anatomicomedical terminologies I (positions and planes)	Management of stress	Cell Physiology & homeostasis	Concept of body fluids & Internal environment	Introduction to Health Research process and researcher (Research-I)	Cell Organelles (1) / Cell membrane
HR	4 Demonstrators 4 Batches of Students	Dr. Sadia (Even) / Dr. Zona (Odd)	Dr. Faizania Shabir (Even)	Dr. Sidra Hamid (Odd)	Dr. Rizwana (Even) / Dr. Khaula Noreen Odd)	Dr. Rahat (Even) / Dr. Kashif Rauf (Odd)
15-02-2024 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	**DME**	**PHYSIOLOGY (LGIS)**		**ANATOMY (LGIS)**	**COMMUNITY MEDICINE**
	Anatomicomedical terminologies II (Anatomical terms and axis of movements)	Introduction to Different Teaching Strategies, Role of Team Leader Facilitator and Students SGD/LGIS/TBL/PAL/INTERNET & Literature Group activity	Concept of body fluids & Internal environment	Cell Physiology & homeostasis	Embryology / General Anatomy; Introduction to Human Development / Introduction to General Anatomy	Characteristics of research and health research methods (Research-II)
HR	4 Demonstrators 4 Batches of Students	Dr. Sidra Hamid (Even) / Dr. Rizwana Shahid (Odd)	Dr. Sidra Hamid (Even)	Dr. Faizania Shabir (Odd)	Prof. Ayesha Yousaf (Even) / Ass. Prof. Dr Arslan (Odd)	Dr. Rizwana (Even) / Dr. Imran Younas (Odd)
16-02-2024 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**	
	LIFE STYLE & PREVENTION	**ANATOMY LGIS**	**BIOETHICS**		**PHARMACOLOGY**	
	Healthy Lifestyle: A Foundation for Medical Professionals	General Anatomy / Embryology; Introduction to General Anatomy / Introduction to Human development	Introduction to History of Medical Ethics		Routes of drug administration	
HR	Dr. Khaula (Even) / Dr. Rizwana (Odd)	Ass. Prof. Dr Arsalan (Even) / Prof. Dr. Ayesha Yousaf (Odd)	Dr. Arsalan (Even)	Dr Sidra Hamid (Odd)	Dr Omaima (Even) / Dr Zoefishan (Odd)	
17-02-2024 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	**DME & BIOETHICS**	**DME & BIOETHICS**		**BIOCHEMISTRY (LGIS)**	**COMMUNITY MEDICINE**
	Anatomicomedical terminologies III (Cell and tissues)	Professionalism / Leadership	Leadership / Professionalism		Cell membrane / Cell Organelles-I	Basics of Ethics in Health Research (Research-III)
HR	4 Demonstrators 4 Batches of Students	Dr Sidra Hamid (Even) / Dr. Arslaan (Odd)	Dr. Arslaan (Even) / Dr Sidra Hamid (Odd)		Dr. Kashif Rauf (Even) / Dr. Rahat (Odd)	Dr. Rizwana (Even) / Dr. Moneeba Iqbal (Odd)

Details of Venue & Batches

Schedule for Practical / Small Group Discussion (Histology Practical Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)

Day	**Histology Practical**	**Biochemistry Practical**	**Physiology Practical**	**Physiology SGD**	**Biochemistry SGD**
Monday	C	B	E	A	D
Tuesday	D	C	A	B	E
Wednesday	E	D	B	C	A
Thursday	B	A	D	E	C
Saturday	A	E	C	D	B

Venue for First Year Batches for Anatomy Dissection / Small Group Discussion (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)

Batches	**Roll No**	**Anatomy Teacher**	**Venue**
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr QuraulAin	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Venue for First Year Batches for PBL & SGD Team-I

Batches	Roll No	Venue	
Batch-A1	(01-35)	Lecture Hall no.05 (Physiology)	Dr. Farhat Jabeen (PGT Physiology)
Batch-A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Ali Zain (PGT Physiology)
Batch-B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)
Batch-B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)
Batch-C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Maryam Abbas (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
Batch-E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
Batch-E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Almas Ijaz	Dr. Sheena Tariq
2.	Batch –B	71-140	Dr. Rahat Afzal	Dr. Uzma Kiani / Dr. Farhat
3.	Batch –C	141-210	Dr. Nayab	Dr. Fahd Anwar
4.	Batch –D	211-280	Dr. Uzma Zafar	Dr. Maryam Abbas / Dr. Afsheen
5.	Batch -E	281-onwards	Dr. Romessa	Dr. Fareed / Ali Zain

Venues for Large Group Interactive Session (LGIS) and SDL

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

Time Table for Foundation Module (Second Week)
(19-02-2024 to 24-02-2024)

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 TO 02:00PM	Home Assignment
19-02-2024 Monday	**SGD/CBL** 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
20-02-2024 Tuesday	**SGD** Clavicle	**CBL** Fracture of Clavicle (Refer to table no. 3)		**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
21-02-2024 Wednesday	**Dissection** Scapula	**SUPERVISED SDL** Scapula Anastomosis & its Clinical Significance		**PATHOLOGY (LGIS)** Cellular response to Injury Dr. Rabia (Even) / Dr Fatima (Odd)	**PHARMACOLOGY LGIS** Absorption of drugs Dr. Arsheen (Even) / Dr. Omaima (Odd)		**Practical & SGD** Topics& Venue mentioned at the end (Refer to table no. 1)	SDL Biochemistry Cell organelles
22-02-2024 Thursday	**PATHOLOGY (LGIS)** Intra Cellular accumulation Dr. Rabia (Even) / Dr Fatima (Odd)	**BIOCHEMISTRY LGIS** Cell Organelle-II / Transport across cell membrane Dr. Rahat (Even) / Dr. Kahsif Rauf (Odd)		**PHYSIOLOGY (LGIS)** Receptor and signal transduction / Cell organelles & related cell function - I Dr. Sidra Hamid (Even) / Dr. Faizania Shabir (Odd)	**PHARMACOLOGY (LGIS)** Factors affecting Absorption of drugs Dr. Mehmoona (Even) / Dr Omaima (Odd)		**Practical & SGD** Topics& Venue mentioned at the end (Refer to table no. 1)	SDL Biochemistry Cell Membrane Transport Across Cell Membrane
23-02-2024 Friday	**BIOCHEMISTRY LGIS** Transport across cell membrane / Cell organelle-II Dr. Kashif Rauf (Even) / Dr. Rahat (Odd)	**ISLAM AND MEDICAL SCIENCE** Introduction to Quran translation / Islam And Medical Science Mufti Naeem Sherazi (Even) / Moulana Abdul Wahid (Odd)		**ENTREPRENEURSHIP (LGIS)** Ideate Initial Idea Dr. Asif		SDL Anatomy clavicle		
24-02-2024 Saturday	**DISSECTION/ SGD** Humerus			**BIOCHEMISTRY (LGIS)** Water & PH Dr. Uzma Zafar (Even) Physico chemical aspects-I Dr. Nayab (Odd)	**PHARMACOLOGY (LGIS)** Distribution of drugs Dr. Omaima (Even) / Dr Uzma (Odd)	Break	**Practical & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Anatomy Scapula

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects)
CBL / Small Group Disscusion (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 / Small Group Discussion

Day	Histology Practical		Biochemistry Practical		Physiology Practical		Physiology SGD		Biochemistry SGD	
	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name
Monday	C	Dr. Kashif (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)	B	Dr. Rahat	E	Dr. Ali	A	Dr. Sheena	D	Dr. Uzma
Tuesday	D		C	Dr. Nayab	A	Dr. Sheena	B	Dr. Uzma	E	Dr. Almas
Wednesday	E		D	Dr. Uzma	B	Dr. Uzma	C	Dr. Fahd	A	Dr. Romessa
Thursday	B		A	Dr. Almas	D	Dr. Maryam	E	Dr. Ali	C	Dr. Nayab
Saturday	A		E	Dr. Romessa	C	Dr. Fahd	D	Dr. Maryam	B	Dr. Rahat

Topics for Small Group Discussion 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

Table No. 2 Batch Distribution and Venues for Anatomy Small Group Disscussion SGDs / Dissections (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)

Batches	**Roll No**	**Anatomy Teacher**	**Venue**
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 3 Batch Distribution with Venues and Teachers Name for Small Group Disscussion (SGD) Physiology

Topic: Concept of Body Fluid and Internal Environment
Date: 20-02-2024 Time: 10:10am – 11:00am

Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	A1	(01-35)	Lecture Hall no.05 (Physiology)	Dr. Farhat Jabeen (PGT Physiology)	6.	C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
2.	A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Ali Zain (PGT Physiology)	7.	D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
3.	B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)	8.	D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
4.	B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)	9.	E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
5.	C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Maryam Abbas (PGT Physiology)	10.	E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)

Table No. 4 Batch Distribution and Venues for Anatomy Case Base Learning (CBL)			
Topic: Fracture of Clavicle Date: 20-02-2024 Time: 09:00am – 09:50am			
Batches	**Roll No**	**Anatomy Teacher**	**Venue**
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 5 Batch Distribution and Venues for Anatomy Supervised SDL			
Topic: Scapula Anastomosis & its Clinical Significance Date: 21-02-2024 Time: 09:00am – 09:50am			
Batches	**Roll No**	**Anatomy Teacher**	**Venue**
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 6 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. Mohtashim Hina (Assoc. Prof. Anatomy)	6.	C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
2.	A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Aneela Jamil (Assistant Professor of Biochemisty)	7.	D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
3.	B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)	8.	D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
4.	B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)	9.	E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
5.	C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Sidra Hamid (Assisttant Professor of Physiolgy)	10	E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)

Table No. 7 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

Time Table for Foundation Module (Third Week)
(26-02-2024 to 02-03-2024)

DATE/ DAY	8:00 AM – 9:00 AM	9:00 AM – 09:50 AM	9:50 AM – 10:10 AM	10:10 AM – 11:00 AM	11:00 AM – 11:50 AM	11:50 AM - 12:20 PM	12:20 PM TO 02:00PM	Home Assignment
26-02-2024 Monday	**DISSECTION / SGD** Anterior Axioappendicular Muscles	**SUPERVISED SDL** Anterior Axioappendicular Muscles	B r e a k	**MEDICINE** Introduction to Medicine nd History of Medicine Dr. SalehaImran (Odd) / Dr. Ayesha Habib (Even)	**BIOCHEMISTRY LGIS** Physico chemical aspects-I / Water & PH Dr. Nayab (Even) / Dr. Uzma Zafar (Odd)	B r e a k	**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Intracellular communication
27-02-2024 Tuesday	**DISSECTION / SGD** Posterior Axioappendicular muscles	**SUPERVISED SDL** Posterior Axioappendicular muscles		**ANATOMY (LGIS)** Histology / Embryology Types of epithelium / Gametogenesis Spermatogenesis Asisstant. Prof Dr Arslan / Prof. Dr. Saima (Odd)	**PHYSIOLOGY (LGIS)** Cell organelles & cell function - II / Homeostasis Control System- I (Negative Feedback System, Concept of Error and Gain) 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
28-02-2024 Wednesday	**BIOCHEMISTRY (LGIS)** Physico chemical aspects-II / Water & PH II Dr. Nayab (Even) / Dr. Uzma Zafar(Odd)	**PATHOLOGY LGIS** Pigments Dr. Rabia (Even) / Dr Fatima (Odd)		**ANATOMY LGIS** Embryology / Histology Gametogenesis Spermatogenesis / Types of Epithelium Prof. Dr. Saima (Even) / Asisstant. Prof Dr Arslan Mughal (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 Physicochemical aspects (Osmosis, Osmotic Pressure)
29-02-2024 Thursday	**PEADS** Medical genetic & dysmorphology Dr. Sadaf (Even) / Dr Saira Liaqat (Odd)	**PHYSIOLOGY (SGD)** Receptor and signal transduction Physiology Team I		**BIOCHEMISTRY** Water & PH II / Physico chemical aspects-II Dr. Uzma Zafar (Even) / Dr. Nayab (Odd)	**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 Physicochemical aspects (Surface Tension, Viscosity)
01-03-2024 Friday	**COMMUNITY MEDICINE** Basics of Ethics in Health Research (Research -IV) Dr Mneeba Iqbal(Even) / Dr Rizwana (Odd)	**BIOCHEMISTRY** Physico chemical aspects-III / Cancer Dr. Nayab (Even) / Dr. Almas (Odd)		**ANATOMY LGIS** Embryology / Histology Gametogenesis -Oogenesis) / Apical Cell Surface Prof. Dr. Ayesha (Odd) / Associate. Prof Dr. Mohtashim (Even)	**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)		12:00pm – 12:30pm SDL Anatomy Anterior axioappendicular muscles	
02-03-2024 Saturday	**Dissection** Dissection / Spotting	**BIOCHEMISTRY (LGIS)** Cancer / Physico chemical aspects-III Dr. Almas (Even) / Dr. Nayab (Odd)		**ANATOMY (LGIS)** Histology / Embryology Specialization of Apical cell surface / Gametogenesis Oogenesis Ass. Prof. Dr Mohtashim (Even) / Prof. Dr. Ayesha (Odd)	**PHYSIOLOGY (LGIS)** Cell membrane ion channels, transport across cell membrane / Structure of nucleus, ribosomes and cell division Dr. Faizania Shabir (Even) / Dr. Uzma (Odd)		**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Anatomy Postior axioappendicular muscles
Online LMS Assessment Will be Conducted in Evening (Date and time will be shared with separate notification)								

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects)
CBL / Small Group Disscusion (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)

Topics for Small Group Discussion & 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

Schedule for Practical / Small Group Discussion

Day	Histology Practical		Biochemistry Practical		Physiology Practical		Physiology CBL		Biochemistry SGD	
	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name
Monday	C	Dr. Kashif (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)	B	Dr. Rahat	E	Dr. Ali	A	Dr. Sheena	D	Dr. Uzma
Tuesday	D		C	Dr. Nayab	A	Dr. Sheena	B	Dr. Uzma	E	Dr. Almas
Wednesday	E		D	Dr. Uzma	B	Dr. Uzma	C	Dr. Fahd	A	Dr. Romessa
Thursday	B		A	Dr. Almas	D	Dr. Maryam	E	Dr. Ali	C	Dr. Nayab
Saturday	A		E	Dr. Romessa	C	Dr. Fahd	D	Dr. Maryam	B	Dr. Rahat

Table No. 2 Batch Distribution and Venues for Anatomy Small Group Disscussion SGDs / Dissections (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)

Batches	Roll No	Anatomy Teacher	Venue
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 3 Batch Distribution with Venues and Teachers Name for Small Group Disscussion (SGD) Physiology									
Topic: Receptor and signal transduction Date: 29-02-2024 Time: 10:10am – 11:00am									
Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	A1	(01-35)	Lecture Hall no.05 (Physiology)	Dr. Farhat Jabeen (PGT Physiology)	6.	C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
2.	A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Ali Zain (PGT Physiology)	7.	D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
3.	B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)	8.	D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
4.	B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)	9.	E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
5.	C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Maryam Abbas (PGT Physiology)	10.	E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)

Table No. 4 Batch Distribution and Venues for Anatomy Supervised SDL							
Topic: Anterior Axioappendicular Muscles Date: 26-02-2024 Time: 09:00am – 09:50am				Topic: Posterior Axioappendicular Muscles Date: 27-02-2024 Time: 09:00am – 09:50am			
Batches	**Roll No**	**Anatomy Teacher**	**Venue**	**Batches**	**Roll No**	**Anatomy Teacher**	**Venue**
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02	A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03	B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03	C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04	D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 5 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. Farhat Jabeen (PGT Physiology)	6.	C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
2.	A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Ali Zain (PGT Physiology)	7.	D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
3.	B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)	8.	D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
4.	B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)	9.	E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
5.	C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Maryam Abbas (PGT Physiology)	10	E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)
No PBL Session during this week									

Table No. 6 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

Time Table for Foundation Module (Fourth Week)
(04-03-2024 to 09-03-2024)

DATE/ DAY	8:00 AM – 9:00 AM		9:00 AM – 09:50 AM		9:50 AM – 10:10 AM	10:10 AM – 11:00 AM		11:00 AM – 11:50 AM		11:50 AM - 12:20 PM	12:20 PM TO 02:00PM	Home Assignment
04-03-2024 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	Structure of nucleus, ribosomes and cell division	Cell membrane ion channels, transport across cell membrane			
	Dr. Uzma Zafar (Even)	Dr. Kashif Rauf (Odd)	Dr. Rabia (Even)	Dr Fatima (Odd)		Female Reproductive Cycles	Intra cellular junctions & adhesions					
						Prof. Dr. Ayesha (Even)	Asst. Prof. Dr. Arsalan Manzoor (Odd)	Dr. Uzma (Even)	Dr. Faizania Shabir (Odd)			
05-03-2024 Tuesday	**BIOCHEMISTRY (LGIS)**		**ANATOMY LGIS**			**PBL SESSION -I**		**BIOCHEMISTRY (LGIS)**			**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Physiology Structure of nucleus ribosome's & cell division
	Nucleic Acid Chemistry-I	Introduction & Classification of Enzymes	Histology	Embryology		PBL Team		Nucleic Acid Chemistry-II	Properties / Factors of Enzymes			
			Intercellular junctions and adhesions	Female Reproductive Cycles								
	Dr. Kashif Rauf (Even)	Dr. Uzma Zafar (Odd)	Asst. Prof. Dr. Arsalan Manzoor (Even)	Prof. Dr. Ayesha (Odd)				Dr. Kashif Rauf (Even)	Dr. Uzma Zafar (Odd)			
06-03-2024 Wednesday	**DISSECTION / SGD**					**PATHOLOGY (LGIS)**		**PHYSIOLOGY (LGIS)**			**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Nucleic Acid Chemistry
	Axilla					Irreversible injury / Necrosis		Transport across cell membrane, Osmosis	Cellular control mechanism, cell cycle programmed cell death/ apoptosis			
						Dr. Rabia (Even)	Dr Fatima (Odd)	Dr. Faizania Shabir (Even)	Dr. Uzma (Odd)			
07-03-2024 Thursday	**DISSECTION / SGD**		**BIOCHEMISTRY (LGIS)**			**PBL SESSION -II**		**PHYSIOLOGY (LGIS)**			**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Biochemistry Cancer
	DISSECTION		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. Uzma Zafar (Even)	Dr. Kashif Rauf (Odd)				Dr. Uzma (Even)	Dr. Faizania Shabir (Odd)			
08-03-2024 Friday	**PATHOLOGY LGIS.**		**BIOCHEMISTRY (LGIS)**			**ANATOMY (LGIS)**		**PHYSIOLOGY (LGIS)**		SDL Anatomy Axilla		
	Irreversible Injury Apoptosis		MM Equation, Coenzymes, Co Factors	Replication		Embryology	Histology	Active Transport I	Active Transport II			
	Dr. Rabia (Even)	Dr Fatima (Odd)	Dr. Uzma Zafar (Even)	Dr. Aneela (Odd)		Fertilization	Glands					
						Prof. Dr Ayesha (Even)	Ass. Prof. Dr Muhtashim (Odd)	Dr. Faizania Shabir (Even)	Dr. Sheena (Odd)			
09-03-2024 Saturday	**DISSECTION / SGD**					**BIOCHEMISTRY (LGIS)**		**PHYSIOLOGY (LGIS)**		**Break**	**Practical &CBL** Topics & Venue mentioned at the end (Refered to table no. 1)	SDL Anatomy Brachial plexus
	Brachial plexus					Replication	MM Equation, Coenzymes, Co Factors	Active Transport II	Active Transport I			
						Dr. Aneela (Even)	Dr. Uzma Zafar (Odd)	Dr. Sheena (Even)	Dr. Faizania Shabir (Odd)			

Break (9:50 AM – 10:10 AM)

Break (11:50 AM - 12:20 PM)

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects) CBL / Small Group Disscusion (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)

Topics for CBLs with Venue

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

Schedule for Practical / Small Group Discussion

Day	Histology Practical		Biochemistry Practical		Physiology Practical		Physiology SGD		Biochemistry SGD	
	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name
Monday	C	Dr. Kashif (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)	B	Dr. Rahat	E	Dr. Ali	A	Dr. Sheena	D	Dr. Uzma
Tuesday	D		C	Dr. Nayab	A	Dr. Sheena	B	Dr. Uzma	E	Dr. Almas
Wednesday	E		D	Dr. Uzma	B	Dr. Uzma	C	Dr. Fahd	A	Dr. Romessa
Thursday	B		A	Dr. Almas	D	Dr. Maryam	E	Dr. Ali	C	Dr. Nayab
Saturday	A		E	Dr. Romessa	C	Dr. Fahd	D	Dr. Maryam	B	Dr. Rahat

Table No. 2 Batch Distribution and Venues for Anatomy Small Group Disscussion SGDs / Dissections (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)

Batches	Roll No	Anatomy Teacher	Venue
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 3 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)	Prof. Dr. Ayesha Yousaf (Professor of Anatomy)	6.	C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
2.	A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Aneela Jamil (Assistant Professor of Biochemisty)	7.	D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
3.	B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)	8.	D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
4.	B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)	9.	E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
5.	C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Sidra Hamid (Assisttant Professor of Physiolgy)	10	E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)

Table No. 6 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

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

Time Table for Foundation Module (Fifth Week)
(11-03-2024 to 16-03-2024)

DATE/ DAY	8:00 AM – 9:00 AM	9:00 AM – 09:50 AM	9:50 AM – 10:10 AM	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
11-03-2024 Monday	**DISSECTION / CBL**			**ANATOMY (LGIS)**		**MEDICINE(LGIS)**			**Practical (Supervised by Prof Ayesha) & 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	Chromosomal Abrassions				
	Pro. Dr. Saima (Even)	Assit. Prof. Dr. Arsalan Mughal (Odd)		Ovulation and fertilization	Glands					
				Prof. Dr. Ayesha (Even)	Ass. Prof. Dr. Mohtashim (Odd)	Dr. Madiha Nazr (Odd)	Dr. Unazua (Even)			
DATE/ DAY	**8:00 AM – 9:00 AM**	**9:00 AM – 09:50 AM**		**10:10 AM – 11:00 AM**		**11:00 AM – 11:50 AM**		**11:50 AM - 01:00 PM**		**Home Assignment**
12-03-2024 Tuesday	**DISSECTION**		**B r e a k**	**BIOCHEMISTRY (LGIS)**		**GYNAE & OBS**		**Practical (Supervised by Prof Ayesha) & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)		SDL Physiology Cell organelles
	Breast			Transcription	Regulation & Inhibition of Enzyme Activity	Introduction to fertilization . implantation. Embryogenesis and congenital anomalies				
				Dr. Aneela (Even)	Dr. Uzma Zafar (Odd)	Dr. Ammara Arooj (Even)	Lecture Theater No. 2			
13-03-2024 Wednesday	**DISSECTION / SGD**	**PATHOLOGY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**Practical (Supervised by Prof Ayesha) & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)		SDL Biochemistry Diagnostic Role of Enzymes
	Dissection/spotting	Genetic disorder		Regulation & Inhibition of Enzyme Activity	Transcription	Translation	Mutation			
		Dr. Rabia (Even)	Dr Fatima (Odd)	Dr. Uzma Zafar (Even)	Dr. Aneela (Odd)	Dr. Aneela (Even)	Dr. Kashif Rauf (Odd)			
14-03-2024 Thursday	**DISSECTION / SGD**			**ANATOMY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**Practical (Supervised by Prof Ayesha) & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)		SDL Biochemistry Transcription Online Clinical Evaluation will be conducted from 12 to 12:15 noon
	Sternoclavicular and acromioclavicular joints			Histology	Embryology	Mutation	Translation			
				Histology & Development of Mammary Gland	Cleavage and formation of blastocyst					
				Prof. Dr. Ifra Saeed / Asso. Dr. Mohatashim Hina (Even)	Prof. Dr. Ayesha Yousaf (Odd)	Dr. Kashif Rauf (Even)	Dr. Aneela (Odd)			
15-03-2024 Friday	**DISSECTION / SGD**			**BIOCHEMISTRY (LGIS)**		**MEDICINE(LGIS)**		SDL Anatomy Brachial plexus injuries (Refered to table no. 1)		
	Radiograph/Surface anatomy of axioapendicular region			Recombinant DNA/ PCR (Polymerase Chain Reaction)	Clinical Enzymology	History Taking and General Physical Examination				
				Dr. Kashif Rauf (Even)	Dr. Uzma Zafar / Dr. Aneela (Odd)	Dr. Imran Saeed (Odd)	Dr. Saima Mir (Even)			
DATE/ DAY	**8:00 AM – 9:00 AM**	**9:00 AM – 09:50 AM**		**10:10 AM – 11:00 AM**		**11:00 AM – 12:00 PM**				
16-03-2024 Saturday	Dissection/Spotting		**B r e a k**	**ANATOMY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**Practical (Supervised by Prof Ayesha) & SGD** Topics & Venue mentioned at the end (Refered to table no. 1)		SDL Anatomy Breast
				Histology	Embryology	Clinical Enzymology	Recombinant DNA/ PCR (Polymerase Chain Reaction)			
				Histology & Development of Mammary Gland	Cleavage and formation of blastocyst					
				Prof. Dr. Ifra Saeed / Asso. Dr. Mohatashim Hina (Odd)	Prof. Dr. Ayesha (Odd)	Dr. Uzma Zafar / Dr. Aneela (Even)	Dr. Kashif Rauf (Odd)			

Online Clinical Evaluation will be conducted from 12 to 12:15 noon on 14th March,2024

Table No. 1 (Time: 12:20pm – 02:00pm)

Batch Distribution for Practical Skills (all subjects) CBL / Small Group Disscusion (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

Topics for Small Group Discussion with Venue

- Physiology SGD – Cellular control mechanism, cell cycle, programmed cell death, Apoptosis Lecture Hall 5
- Biochemistry CBL – Genetics (PCR) - Lecture Hall 2

Schedule for Practical / Small Group Discussion

Day	Histology Practical		Biochemistry Practical		Physiology Practical		Physiology SGD		Biochemistry CBL	
	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name	Batch	Teacher Name
Monday	C	Dr. Kashif (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)	B	Dr. Rahat	E	Dr. Ali	A	Dr. Sheena	D	Dr. Uzma
Tuesday	D		C	Dr. Nayab	A	Dr. Sheena	B	Dr. Uzma	E	Dr. Almas
Wednesday	E		D	Dr. Uzma	B	Dr. Uzma	C	Dr. Fahd	A	Dr. Romessa
Thursday	B		A	Dr. Almas	D	Dr. Maryam	E	Dr. Ali	C	Dr. Nayab
Saturday	A		E	Dr. Romessa	C	Dr. Fahd	D	Dr. Maryam	B	Dr. Rahat

Table No. 2 Batch Distribution and Venues for Anatomy Small Group Disscussion SGDs / Dissections (Supervised by Prof. Dr. Ayesha Yousaf & Associate Prof. Dr. Mohtashim Hina)

Batches	Roll No	Anatomy Teacher	Venue
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 3 Batch Distribution with Venues and Teachers Name for Small Group Disscussion (SGD) Physiology

Topic: Concept of Body Fluid and Internal Environment

Date: 22-02-2024 Time: 10:10am – 11:00am

Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	A1	(01-35)	Lecture Hall no.05 (Physiology)	Dr. Farhat Jabeen (PGT Physiology)	6.	C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
2.	A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Ali Zain (PGT Physiology)	7.	D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
3.	B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)	8.	D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
4.	B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)	9.	E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
5.	C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Maryam Abbas (PGT Physiology)	10.	E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)

Table No. 4 Batch Distribution and Venues for Anatomy Case Base Learning (CBL)			
Topic: Brachial plexus injuries and winging Of Scapula Date: 11-03-2024 Time: 08:00am – 09:50am			
Batches	**Roll No**	**Anatomy Teacher**	**Venue**
A	01-90	Dr. Zeneara Saqib	New Lecture Hall Complex 02
B	91-180	Dr Quraul Ain	New Lecture Hall Complex 03
C	181- 270	Dr Sajjad	Anatomy Lecture Hall 03
D	271 and onwards	Dr Ali Raza	Anatomy Lecture Hall 04

Table No. 6 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. Mohtashim Hina (Assoc. Prof. Anatomy)	6.	C2	(176-210)	Lecture Hall NO. 05 (Basement)	Dr. Nayab Zonish (PGT Physiology)
2.	A2	(36-70)	Lecture Hall no.04 (1st Floor Anatomy)	Dr. Aneela Jamil (Assistant Professor of Biochemisty)	7.	D1	(210-245)	Lecture Hall NO. 03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
3.	B1	(71-105)	Lecture Hall no.02 (Basement)	Dr. Afsheen Batool (PGT Physiology)	8.	D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Muhammad Usman (PGT Physiology)
4.	B2	(106-140)	Conference room (Basement)	Dr. Najam-us-Sehar (PGT Physiology)	9.	E1	(281-315)	Lecture Hall no.01	Dr. Fareed Ullah Khan (Demonstrator Physiology)
5.	C1	(141-175)	Lecture Hall N0. 04 (Basement)	Dr. Sidra Hamid (Assisttant Professor of Physiolgy)	10	E2	(315 onwards)	Lecture Hall no.02	Dr. Kashif Rauf (Demonstrator Biochemistry)
No PBL Session during this week									

Table No. 7 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

Early Clinical Exposure, Basic Life Support Workshop (BLS) for Foundation Module (Sixth Week)
(18-03-2024 to 23-03-2024)

<table>
<tr><th>Date / Days</th><th colspan="2">Early Clinical Exposure (ECE) and Basic Life Support (BLS)</th><th>9:30 – 09:45 AM</th><th></th></tr>
<tr><td></td><td colspan="2">08:00am – 09:30am</td><td rowspan="11">Assembling Time for Early Clinical Exposure (ECE)</td><td>10:00am – 01:00 pm</td></tr>
<tr><td rowspan="2">18-03-2024
Monday</td><td colspan="2" rowspan="2">Orientation Session on ECE
Prof. Dr. Ifra Saeed
Lecture Theater No. 2</td><td>Early Clinical Exposure</td></tr>
<tr><td>Basic Life Support Workshop (BLS)</td></tr>
<tr><td rowspan="3">19-03-2024
Tuesday</td><td colspan="2">Synopsis Writing Session</td><td>Early Clinical Exposure</td></tr>
<tr><td>Dr. Khola Noreen
Research Team A, B, C, D & E</td><td>Dr. Afifa kalsoom
Research Team F, G, H, I & J</td><td rowspan="2">Basic Life Support Workshop (BLS)</td></tr>
<tr><td>Lecture Theater No. 2</td><td>Lecture Theater No. 3</td></tr>
<tr><td rowspan="3">20-03-2024
Wednesday</td><td colspan="2">Questionare Development</td><td>Early Clinical Exposure</td></tr>
<tr><td>Dr. Khola Noreen
Research Team A, B, C, D & E</td><td>Dr. Afifa kalsoom
Research Team F, G, H, I & J</td><td rowspan="2">Basic Life Support Workshop (BLS)</td></tr>
<tr><td>Lecture Theater No. 2</td><td>Lecture Theater No. 3</td></tr>
<tr><td rowspan="3">21-03-2024
Thursday</td><td colspan="2">Hands on Session on Data Analysis</td><td>Early Clinical Exposure</td></tr>
<tr><td>Dr. Khola Noreen
Research Team A, B, C, D & E</td><td>Dr. Afifa kalsoom
Research Team F, G, H, I & J</td><td rowspan="2">Basic Life Support Workshop (BLS)</td></tr>
<tr><td>Lecture Theater No. 2</td><td>Lecture Theater No. 3</td></tr>
<tr><td>22-03-2024
Friday</td><td colspan="4">SDL</td></tr>
<tr><td>23-03-2024
Saturday</td><td colspan="4">Pakistan Day</td></tr>
</table>

Implementation Details of Early Clinical Exposure and Basic Life Support Workshop (BLS) for First Year MBBS
Foundation Module Week Six 18-03-2024 – 21-03-2024 (Time: 10:00am – 1:00pm)

Time Table 1st year MBBS															
Early Clinical Teaching and Training Posting															
Batch Distribution & Units		Medicine				Surgery + Trauma		Emergency				Basic Life Support (Bls) Supervised by Dr Jawad			
		HFH Unit-I (RIUT) Dr. Seemab	HFH Unit- II (RIUT) Dr Nida Anjum / Dr. Unaiza	BBH Unit-I Dr. Sana Ahmed	BBH Unit- II Dr. Ali Murtaza	BBH Unit-I Dr. Sidra	BBH Unit- II Dr. Hina	Skill Lab HFH	RIUT (Emergency Medicine) Dr. Iqra Ashraf / Dr. Aeiman	BBH Medicine Dr. Sana Ahmed / Dr. Ali Murtaza	BBH Surgery Dr. Sidra / Dr. Hina	LTC-1 Dr Asma	LTC-2 Dr Abeera Zareen	LTC-3 Dr Ayesha Nazir	LTC-4 Dr Anum Malik
Modules	Dates / Days	A1	A2	A3	A4	D4, D3	D1, D2	C1	C2	C3	C4	B-BLS 1	B-BLS 2	B-BLS 3	B-BLS 4
		B1	B2	B3	B4	A3. A4	A1. A2	D1	D2	D3	D4	C-BLS 1	C-BLS 2	C-BLS 3	C-BLS 4
		C1	C2	C3	C4	B3, B4	B1, B2	A1	A2	A3	A4	D-BLS 1	D-BLS 2	D-BLS 3	D-BLS 4
		D1	D2	D3	D4	C3, C4	C1, C2	B1	B2	B3	B4	A-BLS 1	A-BLS 2	A-BLS 3	A-BLS 4
Foundation Module	Monday 18-03-2024	Medicine (A BATCH)				Surgery (D BATCH)		Emergency (C BATCH)				BLS (B BATCH)			
	Tuesday 19-03-2024	Medicine (B BATCH)				Surgery (A BATCH)		Emergency (D BATCH)				BLS (C BATCH)			
	Wednesday 20-03-2024	Medicine (C BATCH)				Surgery (B BATCH)		Emergency (A BATCH)				BLS (D BATCH)			
	Thursday 21-03-2024	Medicine (D BATCH)				Surgery (C BATCH)		Emergency (B BATCH)				BLS (A BATCH)			

Medicine			Surgery		
Name	**Hospital**	**Contact No.**	**Name**	**Hospital**	**Contact No.**
Dr. Semab	HFH, Unit-I	0335-8438595	Dr. Waqas	HFH, Unit-I	0334-5267644
Dr. Nadia Anjum	HFH, Unit-II	0323-5894543	Dr. Amjad Umair / Dr. Asad Amir	HFH, Unit-II	0312-5255299 / 0345-5533704
Dr. Sana Ahmed	BBH, Unit-I	0322-4726472	Dr, Sidra	BBH, Unit-I	0336-7021694
Dr. Ali Murtaza	BBH, Unit-II	0321-6539011	Dr. Hina	BBH, Unit-II	0336-0553435
Dr. Iqra Ashraf	RIUT, ER (Unit-I)	0342-5430577	Dr. Aieman	RIUT, ER Unit-II	0331-5388375
Dr. Unaiza	RIUT. MU-II	0305-7910755			

Details of Batch Distribution

Sr No.	Batches	Sub batches with Roll No.	Roll No.
1.	A	A1	1-22
		A2	23-45
		A3	46-68
		A4	69-92
2.	B	B1	93-115
		B2	116-139
		B3	140-162
		B4	163-184
3.	C	C1	185-206
		C2	207-228
		C3	229-250
		C4	251-272
4.	D	D1	273-295
		D2	296-317
		D3	318-340
		D4	340-onwards

List of Facilitators with Venues

Sr. No	Venue	Batch Incharge	
1.	Rawalpindi Institute of Urology (RIUT)	Dr. Zenera Saqib	MU-I
		Dr. Qurat ul Ain	MU-II
		Dr. Fahd Anwar	Emergency
2.	Benazir Bhutto Hospitals	Dr. Sheena	MU-I
		Dr. Almas	MU-II
		Dr. Rahat	SU-I
		Dr. Uzma	SU-II
		Dr. Sajjad Hussain	ER Medicine
		Dr. Ali Raza	ER Surgery
3.	Skill lab HFH	Dr. Jawad Hassan	Skill Lab

Facilitators for Basic Life Support Workshop

Sr. No	Facilitators	Venues
1.	Dr. Uzma Kiyani	LTC Hall No. 02
2.	Dr. Nayab	LTC Hall No. 03
3.	Dr. Minahil	Anatomy LT No. 03
4.	Dr. Kashif (Anatomy)	Anatomy LT No. 04

End of Foundation Module Assessment
(25-03-2024 to 30-03-2024)

Date / Days	Tentative Datesheet	Time
25-03-2024 Monday	End of Module Assessments (3 days) 25th march – 27th March, 2024	
26-03-2024 Tuesday		
27-03-2024 Wednesday		
28-03-2024 Thursday	Commencement of MSK-I Module	
29-03-2024 Friday		
30-03-2024 Saturday		

*Details will be shared separately with venue and Roll No. details

Assessment Schedule of Foundation Module I

Block	Sr #	Module – 1 Foundation Module Components			
		Assessment	Dates	Course	TOS
Block-I	1	Mid Module Examinations LMS based (Anatomy, Physiology & Biochemistry)	02-03-2024 Saturday (Evening time)	Topics covered till 01-03-2024	10 MCQS each from Anatomy, Physiology & Biochemistry
	2	Topics of SDL Examination on MS Team	06-03-2024 Wednesday	SDL Topics covered till 05-03-2024	10 MCQS each from Anatomy, Physiology & Biochemistry
	3	End Module Examinations (SEQ & MCQs Based)	25-03-2024 to 30-03-2024 Monday to Saturday	All dicipilne wise content covered in module	TOS given in page no. 111
	4	Anatomy Structured and Clinically Oriented Viva	28-03-2024 Thursday	Anatomy Content	TOS given in page no. 111
	5	Physiology Structured & Clinically oriented Viva voce	29-03-2024 Friday	Physiology Content	TOS given in page no. 111
	6	Biochemistry Structured & Clinically oriented Viva voce	30-03-2024 Saturday	Biochemistry Content	TOS given in page no. 111
	7	Assessment of Clinical Lectures on MS Team	14-03-2024 Thursday	Vertically Integrated Component	24 MCQs
	8	Assessment of Spiraly Integrated Lectures on MS Team	14-03-2024 Thursday	Spirally Integrated Component	10 MCQs
	9	Assessment of IUGRC Lectures on MS Team	14-03-2024 Thursday		11 MCQs

***Note: Dates Subject to Change**

SECTION VIII

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

Details of Written Assessment and Viva Voce

Sr No	Subject	No of SAQs	Marks	Overall %	Distribution with domain	No of MCQs	Marks	Overall %	Distribution with domain	Total no. of Viva Questions (K)
1.	**Anatomy**	4	20 (5 Marks each)	**50% Core Knowledge (2 Questions)**	**Q1:** Core Knowledge **(25%)** **Q2:** Core Knowledge **(25%)**	35	35 (1 Mark each)	**50% Core Knowledge**	Core Knowledge **48% (Approx. 50%) (17 MCQs)**	**6** (25 Marks)
				50%Integrations (2 Questions)	**Q3:** Spiral Integration **(25%)** **Q4:** Vertical integration **(12.5%)** + Horizontal integration **(12.5%)**			**50%Integrations**	Spiral Integration **20% (7 MCQs)** Horizontal Integration **8.5% (3 MCQs)** Vertical Integration **22.8% (8 MCQs)**	
2.	**Physiology**	4	20 (5 Marks each)	**50% Core Knowledge (2 Questions)**	**Q1:** Core Knowledge **(25%)** **Q2:** Core Knowledge **(25%)**	35	35 (1 Mark each)	**50% Core Knowledge**	Core Knowledge **48% (Approx. 50%) (17MCQs)**	**6** (25 Marks)
				50%Integrations (2 Questions)	**Q3:** Spiral integration **(25%)** **Q4:** Vertical integration **(12.5%)** + Horizontal integration **(12.5%)**			**50%Integrations**	Spiral Integration **20%(7MCQs)** Horizontal Integration **8.5% (3 MCQs)** Vertical Integration **22.8% (8 MCQs)**	
3.	**Biochemistry**	4	20 (5 Marks each)	**50% Core Knowledge (2 Questions)**	**Q1:** Core Knowledge **(25%)** **Q2:** Core Knowledge **(25%)**	35	35 (1 Mark each)	**50% Core Knowledge**	Core Knowledge **48% (Approx. 50%) (17MCQs)**	**6** (25 Marks)
				50%Integrations (2 Questions)	**Q3:** Spiral integration **(25%)** **Q4:** Vertical integration **(12.5%)** + Horizontal integration **(12.5%)**			**50%Integrations**	Spiral Integration **20% (7 MCQs)** Horizontal Integration **8.5% (3 MCQs)** Vertical Integration **22.8% (8 MCQs)**	
	Total	**12 SAQs**	**60 Marks**			**105 MCQs**	**105 Marks**			**75 Marks**
	Total Marks : 60+105+75= 240 Marks									

Table of Specification (TOS) For Annual Asessment for First Year MBBS

Anatomy	Module	Total number of SAQs (K)	Total number of MCQs (K)	Total no. of Viva questions (K)	Total no. of OSPE Stations (P)	Total
	Foundation Module	2 (5 Marks each)	17 (1 Mark each)	6 (25 Marks)	2 (5 marks each)	
	Musculoskeletal – I Module	2 (5 Marks each)	18 (1 Mark each)	6 (25 Marks)	2 (5 marks each)	
Total number of questions of the specific subjects		4 SAQs	35MCQs	12 Viva	4 stations	4+35+12+4 = 55
Total number of marks of the specific subjects		(20 Marks)	(35 Marks)	(50 Marks)	(15 Marks)	20+35+50+20 = 125
Physiology	Foundation Module	2 (5 Marks each)	17 (1 Mark each)	6 (25 Marks)	1(5 marks each)	
	Musculoskeletal – I Module	2 (5 Marks each)	18 (1 Mark each)	6 (25 Marks)	2(5 marks each)	
Total number of questions of the specific subjects		4 SAQs	35MCQs	12 viva	3 stations	4+35+12+3 = 54
Total number of marks of the specific subjects		(20 Marks)	(35 Marks)	(50 Marks)	(20 Marks)	20+35+50+15 = 120
Biochemistry	Foundation Module	2 (5 Marks each)	17 (1 Mark each)	6 (25 Marks)	1 (5 marks each)	
	Musculoskeletal – I Module	2 (5 Marks each)	18 (1 Mark each)	6 (25 Marks)	2 (5 marks each)	
Total number of questions of the specific subjects		4 SAQs	35MCQs	12 Viva	3 stations	**4+35+12+3 = 54**
Total number of marks of the specific subjects		(20 Marks)	(35 Marks)	(50 Marks)	(15 Marks)	**20+35+50+15 = 120**
Total number of questions In a Block						**54+55+54 =163 QUESTIONS**
Total Marks In a Block						**120+125+120 =365 MARKS**

Annexure I

- **Model Templates for MCQ & SEQ Paper,**

- **MCQ & SEQ Sample**

Rawalpindi Medical University Rawalpindi
Model Template for MCQ Paper (Module & Block)

Total Marks:35 (1 mark for each question) Date: Roll No._____

Total Time:35 Minutes *Encircle the single best response*

Q. #	**Integrated & Clinically Oriented Assessment of the Subject of Anatomy (MCQ Paper)** **Section - A: Anatomy Core Knowledge 48%** **(i) Gross: 24%**	**Level of Cognition**
1.	a. b. c. d. e.	**C2**
2.	a. b. c. d. e.	**C2**
3.	a. b. c. d. e.	**C1**
4.	a. b. c. d. e.	**C1**
5.	a. b. c. d. e.	**C3**
6.	a. b. c. d. e.	**C3**
7.	a. b. c. d. e.	**C3**

8.	a. c. e.	b. d.	**C2**
9.	a. c. e.	b. d.	**C3**
(ii)	**Histology: 12%**		
10.	a. c. e.	b. d.	**C1**
11.	a. c. e.	b. d.	**C1**
12.	a. c. e.	b. d.	**C1**
13.	a. c. e.	b. d.	**C1**
(iii)	**Embryology: 12%**		
14.	a. c. e.	b. d.	**C1**
15.	a. c. e.	b. d.	**C3**
16.	a. c. e.	b. d.	**C2**
17.	a. c. e.	b. d.	**C1**

Section - B: Anatomy Horizontal Integrations 9% **Horizontal Integration with Physiology (6%)**		
18.	a. b. c. d. e.	**C3**
19.	a. b. c. d. e.	**C3**
Horizontal Integration with Biochemistry (3%)		
20.	a. b. c. d. e.	**C3**
Section - C: Anatomy Vertical Integration 23%		
21.	a. b. c. d. e.	**C2**
22.	a. b. c. d. e.	**C3**
23.	a. b. c. d. e.	**C3**
24.	a. b. c. d. e.	**C3**
25.	a. b. c. d. e.	**C2**
26.	a. b. c. d. e.	**C2**

27.	a. c. e.	b. d.	**C1**
28.	a. c. e.	b. d.	**C3**
Section - D: Anatomy Spiral Integration 20% **Research (5.7%)**		
29.	a. c. e.	b. d.	**C1**
30.	a. c. e.	b. d.	**C1**
Bioethics (5.7%)		
31.	a. c. e.	b. d.	**C1**
32.	a. c. e.	b. d.	
Family Medicine (5.7%)		
33.	a. c. e.	b. d.	**C3**
34.	a. c. e.	b. d.	

Artificial Intelligence (2.85%)			
35.	a. c. e.	b. d.	**C2**

RAWALPINDI MEDICAL UNIVERSITY
ANATOMY DEPARTMENT
1ST YEAR MBBS MCQs FOUNDATION MODULE EXAM

1. In a CT scan, a frame is taken longitudinally through the sagittal suture. This plane is also called as
    a. Median Plane
    b. Para Saggital plane
    c. Coronal Plane
    d. Frontal plane
    e. Transverse plane

2. During assessment of motor system of the upper limb, the doctor supinates the upper limb. During this movement there is a
    a. Decrease in the angle at the elbow joint
    b. Increase in the angle at the elbow joint
    c. Rotation of the forearm and hand laterally from the midprone position
    d. Rotation of the forearm and hand medially from the midprone position
    e. Movement such as palm of the hand faces posteriorly

3. After a road traffic accident, a patient presented in ER with pain Upper limb. Radiologist reported the fracture of medial epicondyle of humerus. The nerve prone to injury at this level of humerus is:
    a. Axillary nerve
    b. Ulnar nerve
    c. Median nerve
    d. Radial nerve
    e. Scapular nerve

4. During clinical examination of a 52 years old female, a swelling was found under the skin of chest coinciding with the lateral border of teres major. The group of lymph nodes most likely involved is
    a. Anterior axillary
    b. Posterior axillary
    c. Apical
    d. Central
    e. Infraclavicular

5. Most of lymph of breast drains to:
    a. Pectoral lymph nodes.
    b. Internal thoracic lymph nodes.
    c. Apical lymph nodes.
    d. Central lymph nodes.
    e. Subscapular lymph node.

RAWALPINDI MEDICAL UNIVERSITY
ANATOMY DEPARTMENT
1ST YEAR MBBS SEQs FOUNDATION MODULE EXAM

Note: Attempt all questions. All questions carry equal marks. Draw diagram where necessary

1. During a difficult labour baby's upper limb was excessively pulled. Later on he developed right sided muscular weakness in forearm and a claw hand.
    a. Name the condition he is suffering from? (1)
    b. Give relations of brachial plexus with special reference to axillary artery. (2)
    c. Enumerate nerves arising from roots and trunks of brachial plexus. (2)

2. 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. Name the condition she may be suffering from (1)
    b. Give anatomical reason why breast tissue is fixed to underlying chest wall (2)
    c. Discuss lymphatic drainage of breast

RAWALPINDI MEDICAL UNIVERSITY
PHYSIOLOGY DEPARTMENT
1ST YEAR MBBS MCQs FOUNDATION MODULE EXAM

1. Peroxisomes contain:
   a. Lipase
   b. Oxidase
   c. Hydrolase
   d. ATPase
   e. Transferase

2. Gain of the feedback system is calculated by:
   a. Gain= correction error
   b. Gain error/ correction
   c. Gain correction/error
   d. Gain-correction-error
   e. Gain-correction/error 100

3. Enzymes necessary for oxidative phosphorylation are present mainly in which part of mitochondria?
   a. Cristae
   b. Mitochondrial matrix
   c. Outer membrane
   d. Inner membrane
   e. Outer chamber

4. Following part of cilia has ATPase activity:
   a. Axoneme
   b. Tubulin
   c. Flagellum
   d. Basal body
   e. Dynein arm

5. The sequence of three DNA bases in a gene is called:
   a. DNA polymer
   b. Codon
   c. Anticodon
   d. Genetic code
   e. Okazaki fragment

RAWALPINDI MEDICAL UNIVERSITY
PHYSIOLOGY DEPARTMENT
1ST YEAR MBBS SEQs FOUNDATION MODULE EXAM

Q.1 a. Define active transport and name its types (1,1)

b. Enumerate the functions of Golgi apparatus (3)

Q.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. Define homeostasis? Name the type of feedback mechanism that controls blood pressure? (2)

b. Write down the functions of glycocalyx? (3)

RAWALPINDI MEDICAL UNIVERSITY
BIOCHEMISTRY DEPARTMENT
1ST YEAR MBBS MCQs FOUNDATION MODULE EXAM

1. Serum enzyme begins to raise in 4-8 hours of acute Myocardial Infarction is:
    a. CKMB
    b. LDH
    c. AST
    d. ALT
    e. Gama GT

2. Fluidity of cell membrane is maintained by
    a. Water
    b. Triglycerides
    c. Cholesterol
    d. Integral protein
    e. Peripheral protein

3. The nitrogen base in inosine monophosphateis:
    a. Ionone
    b. Inulin
    c. Hypoxanthine
    d. Xanthine
    e. Inosine

4. Transfer RNA transfers:
    a. Information from DNA to ribosomes
    b. Information from mRNA to cytosol
    c. Amino acid from cytosol to ribosomes
    d. Proteins from cytosol to ribosomes
    e. Protein form ribosome to Golgi apparatus

SEQ

Q1. a. Describe different mechanisms of enzyme catalysis. 2.5
    b. Explain Base Excision Repair of DNA. 2.5

RAWALPINDI MEDICAL UNIVERSITY
BIOETHICS DEPARTMENT
1ST YEAR MBBS MCQs FOUNDATION MODULE EXAM

1. ----Includes rules of conduct that may be used to regulate our activities concerning the biological world.
   a. Bio-piracy
   b. Biosafety
   c. Bioethics
   d. Bio-patents
   e. Bio-logistic

2. The right of patients having self-decision is called.
   a. Justice
   b. Autonomy
   c. Beneficence
   d. Veracity
   e. Fidelity

3. Following is not code of ethics.
   a. Integrity
   b. Objectivity
   c. Confidentiality
   d. Behaviour
   e. Autonomy

4. -------in the context of medical ethics, if it's fair and balanced
   a. Justice
   b. Autonomy
   c. Beneficence
   d. Veracity
   e. Fidelity

5. ------Principle requiring that physicians provide, positive benefits
   a. Justice
   b. Autonomy
   c. Beneficence
   d. Veracity
   e. Fidelity

Annexure II

- **Structured Viva**

Department of Anatomy

Foundation Module (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 (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

Updated on: 7th October 2023

Prof. Dr Samia Sarwar Department of Physiology Rawalpindi Medical University

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

Department of Biochemistry

Foundation Module (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)**

Dr. Aneela Jamil
Head of Biochemistry Department
Rawalpindi Medical University
Rawalpindi

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