INTEGRATED ACADEMIC PLANNER

1ST YEAR MBBS
PUMHSW (S.B.A)

Focal Person :
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INTEGRATED ACADEMIC PLANNER

1ST YEAR MBBS

MODULE GUIDE

MBBS PROGRAMME AT PUMHSW,(S.B.A)

Contents

VISION.

We strive to inspire nationally and internationally by pursuing excellence in medical education, research and patient care to meet the evolving healthcare needs of the nation and the region through Professionalism, Excellence and Teamwork.

MISSION.

Our mission is to:

- Create and nurture a diverse community of the best people as key members of the medical community, whether in clinical practice, medical education, research or as leaders of the health-care system, serving both the uniformed and the nation at large.
- Produce socially accountable competent doctors who will make a significant contribution to the health of the community through evidence-based healthcare.
- Attract best faculty who can contribute to the quality of medical education and research

VALUES.

Continuous professional growth and development devotion & dedication to job

Lifelong learning
Lifelong service and social justice
Lifelong innovations
Strong team sprit
Honesty and integrity
Kind, caring and compassionate attitude
Professionalism & ethical practices

WORTHY VICE CHANCELLOR PROF: DR. GULSHAN ALI MEMON
PEOPLES UNIVERSITY OF MEDICAL & HEALTH SCIENCES FOR WOMEN (SBA)

MESSAGE OF VICE CHANCELLOR

Welcome to Peoples University of Medical & Health website! We have much to share as you connect with a college that offers a life-changing experience, each day brings new learning, new opportunities, and interesting challenges. What I find so appealing about being Vice Chancellor of PUMHSW University is that environmental learning. The search for truth in all its dimensions is the foundation of our undergraduate University program, our undergraduate programs for the learner, and our graduate degree programs. The PUMHSW environment - small, technologically enhanced classes; caring, talented faculty; individual attention to the academic needs and concerns of all students; our convenient location in District Shaheed Benazirabad, cultural capital of Connecticut - offers to all of our students an academic experience par excellence.

Our goal is to educate the leaders of tomorrow in the fields of Medical, and we are deeply committed to an education that can best be described as "affordable excellence." We have an accessible faculty dedicated to teaching, and an educational model that encourages real world experiences. We are proud of our students and their deep commitment to completing their undergraduate education and improving the world in which we live. I hope you, too, will want to be a part of our College, and I look forward to welcoming you on college. Thank you for visiting our Web site. I hope you find the information useful and that it will motivate you to want to learn more by visiting us in person

KNOWLEDGE ONLY COMES BY LEARNING AND UNDERSTANDING ONLY COMES BY SEEKING UNDERSTANDING

(Farman-e-Nabwi SAW)

CURRICULUM COMMITTEE

Prof. Dr Muhammad Ali Sohail	Principal & Director Academics
Prof. Dr Alina Saqib	Professor &chairperson Department of Anatomy
Prof. Dr Anwar Ali Jamali	……

PRE-REQUISITE FOR CURRICULUM IMROVEMENT

Practice of medicine is a life-long process for a doctor and consequently learning is a continuous process as well. These stages of learning in medicine are phasic which initially are formal as demonstrated in the MBBS Medical Curriculum, Fellowship, M. Phil and PhD while it continues in a non-formal manner during Continuous Medical Education & Professional Development programs. A curriculum of a medical college or university is guided by the content defined by regulatory / accreditation bodies i.e. Pakistan Medical & Dental Council (PMDC) in our case, but it is a dynamic document which needs to continuously evolve so that the graduates it produces are equipped with the skills needed to provide quality health care to patients under their care, as this is what are the needs of the society.

The syllabus content that needed to be covered during the five year was given by PMDC as well as the number of hours each subject needed to be taught. Guidance was sought from PMDC and Higher Education Commission (HEC) in this regard and the University's proposal of curricular review was endorsed by both bodies. This was the start of the needs assessment process and a curricular committee comprising of Deans, Chairpersons and Medical Educationists was formed to suggest methodologies to cultivate a curricular. The philosophy of any good educational system is that it focuses on making its participant a problem solver as well as a life-long self-organized learner and these were the guiding principles for this process. The first change was to switch from an annual examination to a semester system. Next was introduction of more objective assessment tools like One Best Multiple Choice Questions (MCQ), Objective Structured Clinical Examination (OSCE). The next stage was integration of the disciplines initially in a horizontal and then in a vertical manner. Integration is what is needed by the graduate to function competently in real-world practice settings.

BASIC ORGANIZATION OF THE INTEGRATED MODULAR SYSTEM

The modular curriculum develop by People University of Medical & Health Sciences for Women, Nawabshah (SBA) is integrated both in the vertical and the horizontal directions. However in order to prepare the students for clinical teaching with a sound background knowledge of the basic sciences, the curriculum has been divided in three spirals.

The three spirals:

1. Spiral -1 Basic Sciences spiral

2. Spiral -2 Clinical Sciences spiral

3. Spiral -3 Integrated Supervised Practical Training

The Basic Sciences Spiral is spread over the first four semesters (the first two years) and clinical sciences spiral is distributed over the next four semesters that is semester fifth to eight semester. In the final year (9th and 10th semesters) students are given practical hands on training in the role similar to that of a shadow house officer. They are encouraged to refer to the theoretical teaching of the first four years for their practical training. The whole curriculum is divided into modules, each module being related to a particular system for example. Cardiovascular 1 module is in the Basic Sciences Spiral (Semester 2) and Cardiovascular 2 module is in the Clinical Sciences Spiral (Semester 5)

(BASIC SCIENCES) SPIRAL FIRST TO FOURTH SEMESTER

In Basic Sciences Spiral, anatomy, physiology, pharmacology, pathology, biochemistry and community medicine are taught system wise (modules) an integrated fashion. Important clinical conditions related to that particular system or also introduced at this stage so that the students can correlate clinical presentation with the pathophysiology. Attempt is may to identify a particular theme from that system for each week's teaching. In this spiral, teaching is 80% that of basic sciences components and 20% that of clinical sciences. Early introduction of pathology and clinical sciences provides the students an early context of the purpose of the basic sciences teaching

Case Based Learning:

During this spiral, a clinical case scenario is given to the students each week, which is made available to them on the Curriculum Section website, prior to the commencement of teaching of that week. It is expected that after completion of teaching of that week student will be able to analyze and discuss the case scenario in small groups, in the presence of a faculty member whose role is primarily that of a facilitator rather than a didactic teacher. Feedback is given to the students regarding their discussion and assessment of the students in these sessions is forwarded to the Principal. This is part of the formative assessment of the students.

(CLINICAL SCIENCES) SPIRAL FIFTH TO EIGHT SEMESTER

In this spiral, distributed over fifth to eighth semesters the students revisits the basic subjects of that system while studying the clinical aspects. All the modules which have been taught in the basic sciences spiral have the clinical sciences component in this second spiral. Eighty percent of the teaching in this spiral is clinical based, medicine, surgery, pediatrics and gynecology & obstructers etc. and 20% is basic sciences. While teaching in this spiral due importance and weightage is given to more common diseases which afflict our society.

Scenario Based Learning (SBL)

Clinical case scenarios based on important diseases are discussed in small group format, during the clinical postings. Scenarios are based on the module currently being taught. Although cases are similar to those in the Case Based Learning, in the clinical spiral the emphasis is on diagnosis, differential diagnosis and management plan.

Student Research Studies

In this spiral, in the fourth year (7th and 8th semesters) students are also given topic of research studies which they conduct under the guidance of their assigned faculty supervisors. Once the study is complete, it is presented in front of the faculty and students for critique and analysis. Research studies are completed in the fourth year and are presented in the final year.

THIRD SPIRAL (NINTH AND TENTH SEMESTER)

(INTEGRATED SUPERVISED PRACTICAL TRAINING)

By the end of the 8th semester the students have learnt the basic and clinical sciences subjects related to each module. In their clinical postings from the 5th to 8th semester although they are exposed, by observation, to practical management of the patients, they are not directly involved in the management planning and implementation. The final year (9th and 10th Semesters) has been designed to give practical training with the intent that by the time the students has graduated he/she has already attained the competencies which are expected of a house officer. This practical training is provided in the wards where the students are posted. Their responsibilities are that a shadow house officers. They are encouraged to present and discuss cases on the ward rounds with the faculty and amongst themselves with the supervision of the faculty members.

During the course of this education, certain subjects are taught as parallel themes and a taught in different modules. These includes research methodology, ethics, communication skills, presentation skills and conducting basic research studies and are encouraged to write research papers.

It is expected by the time the students have graduated and are ready for the house job, they have already achieved the competencies required of them by the Pakistan Medical and Dental Council.

SEMESTER WISE LIST OF MODULES

SEMESTERS	MODULES
Sem-1:	Foundation Module Blood Module-1
Sem-2:	Locomotors Module-1 Respiratory System-1 Cardiovascular System-1
Sem-3:	Neurosciences-1 Head & Neck & Special Senses Endocrinology-1
Sem-4:	GIT and Liver-1 Renal and Excretory System-1 Reproductive System -1
Sem-5:	Infectious diseases Hematology-2 Respiratory System -2. Cardiovascular System-2
Sem-6:	GIT and Liver- 2 Renal & Excretory System-2 Endocrinology-2
Sem-7:	ENT. Orthopedics-2 / Trauma Reproductive System-2
Sem-8:	Ophthalmology Rheumatology & Rehabilitation Genetics & Dermatology Neurosciences and Psychiatry-2
Sem-9:	Medicine, Pediatrics, Surgery
Sem-10:	Gynecology & Obstetrics

FIVE YEAR CURRICULUM PLAN

SPIRAL	SEM	MODULES			
First Spiral	I	**FND1- Foundation** Cell, Genetics & Cell Death (Basics of Anatomy, Physiology, Biochemistry, Gen. Pathology, and Gen. Pharmacology, Community Medicine & Behavioral Sciences) 8 Weeks		**HEM1- Blood Module** Immunity, Inflammation, Tissue repair, Microbiology, Antimicrobials & Neoplasia 8 Week	
	II	**LCM1- Locomotion** Bones, Joints, Nerves & Muscles, 8 Week		**RSP1- Respiratory System** 4 Weeks	**CVS1- Cardiovascular System** 4 Weeks
	III	**NEU1-Nervous System** 8 weeks		**HNN1- Head & Neck & Special Senses** 4 Weeks	**END1- Endocrinology** 4 weeks
	IV	**GIL 1-GIT and Liver** 8 week		**EXC1- Renal and Excretory System** 4 Week	**REP1- Reproductive System** 4 week
Second Spiral	V	**IDD 1- Infectious diseases** 4 weeks	**HEM2- Hematology** 4 weeks	**RSP2- Respiratory System** 4 weeks	**CVS2- Cardiovascular System** 4 weeks
	VI	**GIL 2-GIT and Liver (including Nutritional Disorders)** 8 weeks		**EXC2- Renal & Excretory System** 4 weeks	**END2- Endocrinology** 4 weeks
		Half of the class will cover Ophthalmology in first 3 weeks of 7th Semester and the other half will cover ENT modules during this period. In the first 3 weeks of 8th semester the module will rives			
	VII	**OPH / ENT** 3 weeks	**ORT2 Orthopedics / Trauma, 6 weeks**	**REP2- Reproductive System** 8 Weeks	
	VIII	**OPH / ENT** 3 weeks; **PMR- Rheumatology & Rehabilitation** 2 Weeks	**DPS- Dermatology Plastic Surger / Burns** 2 weeks; **GEN- Genetics** 1 week	**NEU2- Neurosciences and Psychiatry** 8 Weeks	
Third Spiral	IX & X	**Half of the class will cover Medicine & Allied and the other half will cover Surgery & Allied modules in the 9th semester. The two half will exchange in the 10th semester.**			
		Clinical Rotation 8:30 to 1:00 (with Ambulatory, Emergency, Intensive care) In Medicine, Pediatrics, Cardiology and Neurology units 1:30 to 3:00 pm • Lecture on problem based approach, twice a week • Ward tutorial twice a week • Student research presentation once a week		Clinical Rotation 8:30 to 1:00 (Inpatient, Ambulatory, Emergency, Intensive care and Operation Theatres) In Surgery, Gynae& Obstetrics, Orthopedics and Neurosurgery. 1:30 to 3:00 pm • Lecture on problem based approach, twice a week • Ward tutorial twice a week • Student research presentation once a week	
		PARALLEL THEMES: **The following themes are not part of any individual module but shall run concurrently : Communication Skills, Clinical Skills, Writing and Presentation Skills, Article Writing, Ethics**			

LEARNINIG METHODOLOGIES

- LECTURES
- HOSPITAL/CLINICAL VIST
- SGDS,
- PBL,
- PEER ASSISISTED LEARNING,
- DISECTION CBL, PRACTICALS,
- SKILL SESSIONS,
- SELF DIRECTED LEARNINIG,
- COMMUNITY BASED MEDICAL EDUCATION

SPIRAL -1

SEMESTER -1

FOUNDATION MODULE

Module details

Course	**MBBS**
Year	**1ST Year**
Duration of module	**08 weeks**
Learning outcomes Competencies covered	**The competent medical practitioner,** **I (Skillful), and II (Knowledgeable/ problem solver)**
Module assessment	**End-module assessment**
Assessment methods	**SBQs** **SEQs,** **OSPE** **VIVA**

Introduction

Welcome to the foundation module. This exciting module will serve as building block and is very essential to your future work as doctors. This module is designed to make your learning both interesting and productive by including several interactive activities.

During this module, students will be encouraged to learn basic organization of human body in terms of structure, function and biochemical properties in an integrated manner i.e. Basic subjects including Anatomy, Physiology, Biochemistry, Pharmacology and Pathology will be learned and assessed together. You will also learn to integrate basic knowledge with clinical relevance. By adopting this approach, you will be prepared for your future work as doctor, where patients will come to you with problems that are not categorized by discipline name.

In order to help you learn in an integrated manner, we have updated the learning of basic sciences around a few key health-related situations (real life situations), which you are likely to encounter as house officers. You will be expected to think about the scenarios and participate in case based learning sessions for clearing your concepts and better learning. It will also help you focus your attention on what you need to achieve from the lectures, practical and tutorials that have been scheduled during this module

Rational:

Orientation of medical sciences in respect to health and disease is the fundamental requirement of every medical student. Therefore, this module is designed to provide the integration of core concepts that underlie the foundation of basic sciences and their correlation and application in clinical sciences. Students also learn clinical skills such as how to communicate effectively with patients and their relatives with compassion and understanding their issues/problems and how to resolve in coming years. Working in groups will enhance students' team working skills and capacity and management skills. Along with interactive lectures, practical and demonstrations; through supplemented case-based learning they develop problem solving skills to apply their basic medical knowledge and skills to practical situations under supervision and subsequently in real life practice.

The learnings objectives of introductory session are

1. To familiarize students with the MBBS integrated modular system and Problem-based curriculum
2. To recognize the role of different disciplines in studying the human body, its function and disease process.
3. To describe the structure, function and biochemical composition of cell.
4. To keep and maintain discipline within the college, so as to sustain conducive environment for learning.
5. To follow the prescribed norms of the college properly

General learning outcomes

By the end of this foundation module, the students should be able to:

Knowledge

1. Describe the cell division, its types and genetic material along with its clinical correlation.
2. Describe the basic organization of the human body.
3. Describe the basic tissues of the human body
4. Explain the maintenance of homeostatic mechanism.
5. Describe the various malformations.
6. Describe the biochemistry of carbohydrates, nucleic acids and enzymes
7. Describe various cellular adaptations during cell growth, differentiation and cell injury
8. Describe the basic concepts of medical ethics, professionalism, clinical research, behavioral sciences, communication skills, information technology skills

Skills

1. Describe the basic laboratory techniques and demonstrate the use of microscope
2. Identify basic tissues under the microscope
3. Learn and follow the basic laboratory protocols
4. Perform biochemical analysis of carbohydrates
5. Prepare different solutions used in laboratory for tests

Attitude

1. Follow the basic laboratory protocols
2. Participate in class and practical work professionally
3. Communicate effectively in a team with pears, staff and teachers
4. Demonstrate professionalism and ethical values in dealing with patients, cadavers, pears, staff and teachers.
5. Communicate effectively in a team with pears and teachers. 6. Demonstrate the ability to reflect on the performance.

THEMES OF THE FOUNDATION MODULE:

To achieve these overall aims, this module comprises eight weeks including an introductory week with a separate theme for almost each week for enhancing your learning around key basic foundation areas

Theme 1: Cell structure, Chemistry and Function

Theme 2: Cellular interactions, Cell injuries, Cellular responses and Adaptations

Theme 3: Body fluids: Composition, Function & Homeostasis

Theme 4: Macromolecules: Fundamental tissues/systems of the human body

Theme 5: Fundamental tissues/systems of the human body

Theme 6: Development, Differentiation and Growth

Theme 7: Genetics and Developmental anomalies

INTRODUCTORY WEEK LEARNING (1st Week)

Real life scenario 01:

A group of the first year MBBS students were attending their first demonstration with a senior teacher, who was standing with the normal anatomical position and performing the different body movements and explaining the different body sections.

Points to consider:

1. What is the normal anatomical position?
2. How we can dissect the body in different sections and why? 3. Name and perform the different movements of the body?

Real life scenario 02:

A 20-years old woman severely sprains her left ankle while playing tennis.

When she tries to move the foot so that the sole faces medially, she experiences severe pain.

Points to consider:

1. What is the correct anatomic term for the movement of the foot that produces the pain?
2. What type of the movements takes place while playing tennis?

Now you wonder **how you can find out about the necessary information**.

There are a number of lectures scheduled in your module. You have to go through first introductory week timetable to see whether they may be useful for exploring the

S.NO	LEANING OBJECTIVES	TOPIC	TEACHING STR\TEGY	ASSESSMENT
ANATOMY				
1.	State the history of subject Anatomy its various branches and practical applications of Anatomy as a foundation in different fields of	**Int-SI-Ana-G1** including Introduction to the subject of Anatomy and its subdivisions	**Interactive Lecture**	BCQs, SEQs
2.	Discuss the integration of structures and function of human body by relating with the arrangement of different levels organization	**Int-SI-Ana-G2** The arrangement of different levels organization	**Interactive Lecture-**	BCQs, SEQs
3.	Comprehend the exact location of dissected /prosecuted part/organ of human body with respect to various terms of positions, direction, and body planes	**Int-SI-Ana-G3** Anatomical positions, Terms of position, Anatomical planes	**Interactive Lecture**	BCQs, SEQs
4.	Interpret the movements of different parts of human body the knowledge of various terms of movement	**Int-SI-Ana-G4 Terms of movements**	**Interactive Lecture-**	BCQs, SEQs
5.	Explain the appendicular and axial skeleton	**Int-SI-Ana-G5** Introduction to the parts of axial and appendicular skeleton	**Interactive Lecture**	BCQs, SEQs
PHYSIOLOGY				
6.	Define physiology and Enumerate the branches of physiology	**Int-SI-Phy- 1** Introduction to Physiology	**Interactive Lecture**	BCQs, SEQs
BIOCHEMISTRY				
7.	Define biochemistry and Discuss the role of biochemistry in medicine	**Int-SI-Bio- 1** Introduction to biochemistry and its implication in medicine	**Interactive Lecture**	BCQs, SEQs
8.	Discuss the-integration of macromolecules in Human body at different levels organization	**Int-SI-Bio- 2** Importance of macromolecules in organization of living System	**Interactive Lecture**	BCQs, SEQs
9.	Describe the significance of Protection protocols to keep yourself safe during Biochemistry laboratory work.	**Int-SI-Bio- 3**	**Interactive Lecture**	BCQs, SEQs
10.	Introduction to techniques of using glassware and handling of biochemical instruments during laboratory work	**Int-S1-Bioc-4** Use of glassware & Instruments for laboratory	**Interactive Lecture**	BCQs, SEQs
PATHOLOGY				
11.	Define the pathology Enumerate the different branches of pathology Describe the terminologies used in Pathology	**Int -S1-Path-1** Introduction to pathology	**Interactive Lecture**	BCQs, SEQs
12.	Define the Microbiology Enumerate the different branches of Microbiology Describe the terminologies used in microbiology	**Int -S1-Micb-1** Introduction to Microbiology	**Interactive Lecture**	BCQs, SEQs

PHARMACOLOGY				
13.	Define the pharmacology and role of pharmacology in medicine Discuss pharmaco- dynamics and pharmacokinetics	**Int -S1-Pharm-1** Introduction to pharmacology and its implication in medicine	**Interactive Lecture**	BCQs, SEQs
COMMUNITY MEDICINE				
14.	➢ To learn different definition of public health/Community Medicine ➢ To learn evolution of public health, it importance in today's world ➢ To learn basic functions of Public health/community Medicine ➢ To differentiate between clinical and community medicine	**Int -S1-COM-M-1** Introduction to Community Medicine & public Health (introduction to course/ department/ faculty	**Interactive Lecture**	BCQs, SEQs
FORENSIC MEDICINE				
15.	➢ Define Forensic Medicine, Forensic pathology and state Medicine ➢ Know the branches of Forensic Medicine ➢ Describe briefly the history of Forensic Medicine ➢ Discuss the scope of Forensic Medicine in practice ➢ Identify the essential facilities for medico legal investigation. ➢ Define medical jurisprudence and differentiate it from Forensic medicine	**Pre-Fnd-S1-FOR-M-1** Introduction to forensic Medicine and Toxicology	**Interactive Lecture**	BCQs, SEQs
MEDICAL EDUCATION				
16.	➢ Describe the curriculum and modules under implementation. ➢ Describe the use of study guides (not to be assessed) ➢ Differentiate between various teaching & learning strategies	**Int -S1-MED-E-1** Curriculum structure teaching learning strategies	**Interactive Lecture**	BCQs, SEQs
17.	Describe various study skills	**Int -S1-MED-E-2** Different study skills strategies	**Interactive Lecture**	BCQs, SEQs

INFORMATION TECHNOLOGY				
18.	Define IT and its importance in Medicine	**Int -S1-IT-1** Importance of IT skills	**Interactive Lecture**	BCQs, SEQs
LIBRARY SCIENCES				
19.	Learn literature search skills	**Int -S1-LIB-1** Literature search and library resources	**Interactive Lecture**	BCQs, SEQs
BEHAVORIAL SCIENCES				
20.	Learn the significance of communication skills in Medical Sciences	**Int -S1-BEH-S-1** Introduction to behavioral Sciences	**Interactive Lecture**	BCQs, SEQs
COMMUNICATION SKILLS				
21.	Learn the significance of communication skills in Medical Sciences	**Int -S1-CS-1** Introduction to communication skills	**Interactive Lecture**	BCQs, SEQs
BIOMEDICAL ETHICS				
22.	Learn the significance of ethics in Medical Sciences	**Int -S1-BME-S-1** Introduction to Bio Medical ethics	**Interactive Lecture**	BCQs, SEQs
RESEARCH METHODOLOGY				
23.	Learn the significance of ethics in Medical Sciences	**Int -S1-Res-M-1** Introduction to research methodology	**Interactive Lecture**	BCQs, SEQs

Theme 1: Cell Structure, Chemistry and Function Real life Scenario

The first year MBBS students visited the Histology laboratory in the Anatomy department and

They were surprised to see the process of the slide preparation. There were so many steps to learn

The staining techniques; finally the slide was ready to see under the light microscope.

Points to consider:

1. Why it is important for a medical student to have the knowledge of slide preparation and artefacts?
2. What are the most commonly used staining techniques in histology? **3.**
How it is possible to identify the different organelles of the cell ?

Real life Scenario

A 40 years American tourist lady was found in critical condition by rescue team in desert areas of Sindh. Physical examination showed all signs of dehydration such as sunken eyes, dry hair, dry and coated' tongue with thick fur, feeble voice, weak pulse and fruity smell on breathing. After resuscitation, she revealed that she have been lost in the desert for more than ten days.

Real life Scenario

A 3 year old mentally retarded child was brought to the GP with complaints of frequent bouts of

loose motions cough and breathlessness. On physical examination, hepatosplenomegaly was

present. Detailed investigations revealed a genetic abnormality with defects in the myelination in the CNS and compound lipid accumulation in cellular lysosomes with resultant malfunctioning of lysosomes.

Points to consider:

1. What is the importance of sunken eyes, dry hair and coated furry tongue, feeble voice and fruity smell in breathing? You must be able to understand the mechanism behind this phenomenon.

2. What are the reasons for regaining consciousness on resuscitation?. Discuss OR

3. Significance of structure, function and biochemical composition of cellular organelles in understanding the mechanism of recurrent infections and Organomegaly in this child

Now you wonder how you can find out about the necessary information.

- There are a number of lectures, small group discussions and clinical skills sessions scheduled in your module. You have to go through second week timetable to see whether they may be useful for exploring the answers.

- This will help you with some of the learning issues at this stage of medical education but you decide to concentrate on selected issues at this stage.
- You can decide to look for other sources of information that may be helpful, at a later

SR. NO	Learning objectives	Topics	Teaching strategy	Assessment
		ANATOMY		
1.	Demonstrate the parts and handling of light microscope	**(Fnd-S1-Ana-H1)** Microscope	Interactive Lecture	BCQ, SEQ
2.	Enlist steps of tissue processing, Know the basic histological stains	**(Fnd-S1-Ana-H2)** Fixation, Embedding, Sectioning, Staining ,Steps of H&E staining	Interactive Lecture	BCQ, SEQ
3.	Describe the structural Organization of different components of a cell	**(Fnd-S1-Ana-H3)** Cell Introduction, Cell Organelles (Endoplasmic Reticulum, Golgi Apparatus, Ribosomes, Centrioles, Mitochondrion, Lysosomes, Peroxisomes & Nucleus)	Interactive Lecture	BCQ, SEQ
	Show basic structure of cell membrane	**(Fnd-S1-Ana-H4)** CELL MEMBRANE: Composition & Structure	Interactive Lecture	BCQ, SEQ
		(Fnd-S1-Ana-H5) Parts of Light microscope	Practical	BCQ, SEQ, OSPE
4.	Introduction to parts of appendicular and axial skeleton	**(Fnd-S1-Ana-G6)** Introduction to parts of appendicular and axial skeleton	Demonstration	BCQ, SEQ, OSPE
		PHYSIOLOGY		
5.	Describe physiological aspects and organization of Human body	**(Fnd-S1-Phy-2)** Physiology of Cells, tissues, organs, & systems Cell nutrition, capillary &venules	Interactive lecture	BCQ, SEQ, OSPE
6.	Describe the Functional organization of different components of a cell and its organelles Describe the functions of mitochondria, Its special features & its role in generation of ATP Describe the functions of lysosomes & peroxisomes	**(Fnd-S1-Phy-3)** Functions of cell and its organelles	Interactive lecture	BCQ, SEQ, OSPE
7.	Describe the functions of ER, Golgi apparatus, Ribosomes , and cytoskeleton.	**(Fnd-S1-Phy-4)** Functions of cell and its organelles	Interactive lecture	BCQ, SEQ, OSPE
8.	Give structure & functions of Nucleus	**(Fnd-S1-Phy-5)** Nucleus	Interactive lecture	BCQ, SEQ, OSPE
		BIOCHEMISTRY		
09.	Describe the chemical structure and significance of mitochondria, functions and location of enzymes for metabolic pathways & chemical reactions that occur in mitochondria.	**FND-S1-Bioc-4** Biochemical structure of mitochondria	Interactive Lecture	BCQ, SEQ, OSPE

10.	Describe Biochemistry of biological membranes, permeability variations and functions of cholesterol	**FND-S1-Bioc-5** Biochemical aspects of membrane permeability & functions of cholesterol in biological membranes	Interactive Lecture	BCQ, SEQ, OSPE
11.		**FND-S1-Bioc-6** Solutions (Percent solutions, Osmolarity, Osmolality, Normality)	Practical	BCQ, SEQ, OSPE, Viva
PATHOLOGY				
12.	Describe the important components of a typical bacterial cell Enlist the specialized structure of bacterial cell with their functions	**FND-S1-Mic-2** Bacterial cell structure	Interactive Lecture	BCQ, SEQ, OSPE
13.	Classify bacteria on the basis of Gram staining Differentiate characteristics of gram positive and gram negative bacteria	**FND-S1-Mic-3** Classification of bacteria	Interactive Lecture	BCQ, SEQ, OSPE
14.	Demonstrate the procedure of Gram staining	**FND-S1-Mic-4** Gram staining	Interactive Lecture	BCQ, SEQ, OSPE
15.			CBL	FEEDBACK
COMMUNITY MEDICINE				
16.	To understand the concept of disease and health To discuss the Spectrum of health and Iceberg phenomenon of disease To understand the Health Dimensions	**FND-S1-CM-2** Concept of Health and Disease	Interactive Lecture	SEQ OSPE

Theme 2: Cellular interactions, Cell injuries, cellular responses and adaptations Real life scenario:

A 40-years old workman received a severe burn on the anterior aspect of his right forearm. The greater part of the burn was superficial and extended only into the superficial parts of the dermis.

Points to consider:

1. In the superficially burned area, the epidermis cells would regenerate from which site? 2. What type of the cell junctions are present in the multiple layer epithelium?

A 35 year old male smoker visited his GP with complaint of chronic cough and history of weight loss. Cytological examination of lung tissue showed metaplastic changes in epithelium due to cellular injury that ultimately leads to cellular adaptation (metaplasia). Due to cellular adaptations cell membrane physiology is also affected.

Points to consider:

1. What is mechanism or process regarding changes occurred in epithelium?

Now you wonder **how you can find out about the necessary information**.

- There are a number of lectures, small group discussions and clinical skills sessions scheduled in your module. You may go through second week timetable to see whether they may be useful to explore further.
- This will help you with some of the learning issues at this stage of medical education but you have to concentrate on selected issues at this stage.

You can also decide to look for other sources of information that may be helpful, at a later stage.

SR. NO.	Objectives	Topics	Teaching Strategy	Assessment
		ANATOMY		
1	Describe components of cell surface modifications and junction complex	**FND-S1-Ana-H-6** Cell surface modifications and cell Junctions	Interactive Lecture	BCQs, SEQs
2	Differentiate between normal and abnormal cell division and their consequences	**FND-S1-Ana-E-1** Cell cycle, Mitosis and Meiosis cell divisions	Interactive Lecture	BCQs, SEQs
3		**FND-S1-Ana-H-7** Slide preparation, artifacts, Cell membrane and cell organelles	Interactive Practical	BCQs, SEQs, OSPE, Viva
		PHYSIOLOGY		
4	Explain composition and basic structure of cell membrane, its functional importance and adaptation	**FND-S1- Phy-6** Plasma membrane & its functions and structure	Interactive Lecture	BCQs, SEQs
5	Describe types and process of transport across the membrane and their effects. Describe the process of diffusion	**FND-S1- Phy-7** Methods of transport Diffusion-Simple	Interactive. Lecture	BCQs, SEQs, OSPE
6	Describe the Transport across cell membrane via protein mediated method. Describe the process of osmosis Define osmolarity, osmolality & osmotic pressure	**FND-S1- Phy-8** Protein mediated transport Fasilated diffusion Osmosis	Interactive. Lecture	BCQs, SEQs, OSPE
7	Explain the physiological mechanism active transport Differentiate between primary & secondary active transport. Describe the processes of exocytosis & endocytosis.	**FND-PHY-09** Active transport Primary active transport Secondary active transport Bulk transport	Interactive lecture	BCQs, SEQs, OSPE
8	Describe the membrane potential its development & maintenance Describe resting membrane potential and graded potential Describe the factors affecting membrane potential	**FND-PHY-10** Resting membrane Potential Graded potential Factors affecting Membrane potential	Interactive lecture	BCQs, SEQs, OSPE
9	Discuss action potential Give mechanism of propagation of action potential & its ionic changes	**FND-PHY-11** Action potential Propagation of action potential	Interactive lecture	BCQs, SEQs, OSPE

PATHOLOGY				
10	Define Hypertrophy, Hyperplasia, Atrophy and Metaplasia. Enlist physiological and pathological mechanisms of cellular adaptation	**FND-S1- Path-2** Cellular adaptations	Interactive Lecture	BCQs, SEQs, OSPE
11		**FND-S1- Path-3**	Interactive Lecture	BCQs, SEQs, OSPE
	Enumerate the Causes of Cell Injury Discuss the types of cell injury Describes the sequential morphologic changes in Cell Injury	**Cell injury**		
12	Define Necrosis and its type Describe the nuclear and cytoplasmic features of necrosis.	**FND-S1- Path-4** **Necrosis**	Interactive Lecture	BCQs, SEQs, OSPE
13	Define Apoptosis Enumerate pathological and physiological Causes of Apoptosis Describe Biochemical Features and Mechanism of Apoptosis .	**FND-S1- Path-5** **Apoptosis**	Interactive. Lecture	BCQs, SEQs, OSPE
14	Demonstrate gross and microscopic features of cellular adaptations and Necrosis	**FND-S1-Path-6** **Cell pathology**	Interactive Practical	OSPE
PHARMACOLOGY				
15	Enlist different routes of drug administration& describe the merits & demerits of the different routes of drug administration	**FND-S1- Pharm-2** Routes of drug administration (entral, Par-entral) drugs	Interactive Lecture	BCQs, SEQs, OSPE
16	Describe drug absorption & factors affecting rate and extent of drug absorption	**FND-S1- Pharm-3** Absorption: Process of absorption & Factors modifying drug absorption	Interactive Lecture	BCQs, SEQs, OSPE
COMMUNITY MEDICINE				
17	To understand determinants of health with special focus on social determinants of health(SDH) To define responsibility for Health To learn about health delivery system of Pakistan	**FND-S1-CM-3** Determinants of health and Health Delivery system of Pakistan	Interactive Lecture	BCQs, SEQs, OSPE

Theme 3: Body fluids: composition, function & homeostasis

A 33 year old female diabetic patient brought to the emergency department with complains of abdominal pain and vomiting after attending a party. Clinical examination revealed severe dehydration, low blood pressure and respiratory distress (respiratory rate: 40 beats/min). Biochemical analysis revealed severe metabolic acidosis and hyperglycemia. Ketone bodies were also positive on urine analysis.

Points to consider:

- How the homeostasis of the patient is altered in the above given scenario and what mechanism will be initiated for maintaining /restoration of homeostasis.
- In dehydration which compartment of body fluids will be affected and how it affects the ECF and ICF.

Now you wonder **how you can find out about the necessary information**.

- There are a number of lectures, small group discussions and clinical skills sessions scheduled in your module. You may go through second week timetable to see whether they may be useful.
- This will help you with some of the learning issues at this stage of medical education but you decide to concentrate on selected issues at this stage.
- You can decide to look for other sources of information that may be helpful, at a later

S. No	Objectives	Topics	Teaching Strategy	Assessment
		Physiology		
1	Describe the divisions of body fluids into intracellular, extracellular and intravascular compartments.	**FND-S1- Phy-12** Body water/ body fluids	Interactive Lecture	BCQs, SEQs, OSPE
2	Recognize the physiochemical aspects for the maintenance of homeostasis	**FND-S1- Phy-13** Homeostasis	Interactive Lecture	BCQs, SEQs, OSPE
3.	Explain the concepts of homeostasis and its regulation through feedback mechanism.	**FND-S1- Phy-14** Mechanisms of Homeostasis	Interactive lecture CBL	BCQs, SEQs, OSPE
		BIOCHEMISTRY		
4	Discuss the role of Biochemical aspects for the maintenance of homeostasis.	**FND-S1-Bioc-7** Concept of pH & its regulation in normal Health, Acidosis, Alkalosis	Interactive Lecture	BCQs, SEQs, OSPE
5		**FND-S1-Bioc-8** Buffers & their Mechanism of Action Types of Buffers in Humans	Interactive Lecture	BCQs, SEQs, OSPE
6		**FND-S1-Bioc-09** **Definitions of Bio-Physical Terms:** Osmosis, Osmotic Pressure, Osmolarity, Surface Tension, Viscosity, Colloid oncotic pressure.	Interactive Lecture	BCQs, SEQs, OSPE
7		**FND-S1-Bioc-10** pH measurement of a given biological fluid.	Interactive practical	BCQs, SEQs, OSPE
		PHARMACOLOGY		
8	Explain bioavailability & describe factors affecting bioavailability	**Fnd-S1-Phrm-4** Bioavailability +half-life + 1st Pass Effect	Interactive Lecture	BCQs, SEQs, OSPE
09	Describe the distribution of a drug through various body compartments & explain clinical significance of Vd	**Fnd-S1-Phrm-5** Drug Distribution & Reservoir	Interactive Lecture	BCQs, SEQs, OSPE
10	Integrated learning of Physiochemical aspects of Body Homeostasis	**Fnd-S1-Cbl-2**	CBL	

		PATHOLOGY		
11	List and define causes of intracellular accumulation Discuss the role of Intracellular Accumulations in metabolic Derangements of cell.	**FND-S1- Path-7** Intracellular Accumulations	Interactive Lecture	BCQs, SEQs, OSPE
12	Define and describe pathological calcification. Discuss Dystrophic and metastatic calcification	**FND-S1- Path-8** Calcification and Pigmentation	Interactive Lecture	BCQs, SEQs, OSPE
13	Define cell aging Discuss events in Cellular Aging	**FND-S1- Path-9** Cell Aging	Interactive Lecture	BCQs, SEQs, OSPE
14	Define edema Describe Pathophysiology of edema	**FND-S1- Path-10** Edema	Interactive Lecture	BCQs, SEQs, OSPE
		COMMUNITY MEDICINE		
15	To understand the concept of disease causation • Ecological traid • Web causation To define the level of prevention ○ Primodial ○ Primary ○ Second ○ Tertiary	**FND-S1-CM-4** Natural history of diseases & Levels of Prevention	Interactive Lecture	BCQs, SEQs, OSPE

Theme 4: Macromolecules/ Fundamental tissues/systems of the human body Real life scenario:

A 45-years old woman has the complaint of painful multiple joints. The clinician assessed the normal range of movement of all joints. The bones of the joints were no longer in their normal anatomic relationship with one another. This was may be due to lack of support by ligaments.

Points to consider:

1. What is the classification of the joints?
2. How the normal range of the movements should be assessed?
3. What are the different types of the bones formation?
4. What is the role of the ligaments for the stability of the joints?

Salma, 2-years old girl, belongs to poor family and resident of urban slum is suffering from loose stools, and vomiting. She had experienced recurrent episodes of diarrhea and acute respiratory tract infections for last 1 year. Physical examination reveals under-nourished and underweight child with muscle wasting. She is treated as a case of Protein energy malnutrition.

Points to consider:

- What is the importance of macromolecules in growth and homeostasis of human body? You must be able to understand the mechanism behind this phenomenon.
- Why it is significant to provide her balanced diet containing carbohydrates, proteins and fats immediate basis

Now you wonder **how you can find out about the necessary information**.

- There are a number of lectures, small group discussions and clinical skills sessions scheduled in your module. You may go through second week timetable to see whether they may be useful.
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S. No	Objectives	Topics	Teaching Strategy	Assessment
		Anatomy		
1.	Classify bones on the basis of shape, development, region and structure	FND-S1- **Ana-G7** Divisions & functions of skeletal system, classification of bones. Gross structure of adult long bone. Parts of young long bone	Demonstration	BCQs, SEQs, OSPE, Viva, Feedback
2.	Describe general concepts of development, ossification and blood supply of bones	FND-S1- **Ana-G8** Bone development (ossification), blood supply of long bones	Demonstration	BCQs, SEQs, OSPE, Viva, Feedback
3.	Classify joints on the basis of structure, regions and functions, Discuss the characteristics of synovial joints and classify on basis of structure & movement	FND-S1- **Ana-G9** Describe the synovial joints, General description of the joints	Interactive Lecture	BCQs, SEQs, OSPE,Viva
4.	Define dislocation, sprain and inflammation of joints	**FND-S1-ORT-1** Fractures	Interactive Clinical Lecture	Feedback
5.	Describe the microscopic features of epithelial tissues, explain their functional importance and their surface modification	FND-S1- **Ana-H-8** Epithelium	Interactive Lecture	BCQs, SEQs, OSPE, Viva
6.	Discuss gross and microscopic features of exocrine glands	FND-S1- **Ana-H-9** Exocrine glands	Interactive Lecture	BCQs, SEQs, OSPE, Viva
7.	Describe and differentiate the microscopic features of connective tissues	FND-S1- **Ana-H-10** Histology of Connective tissue, types of connective tissues: loose connective regular and irregular	Interactive Lecture	BCQs, SEQs, OSPE, Viva
8.	Demonstrate histological features of cartilage	FND-S1- **Ana-H-11** Types of cartilage and histological features of cartilage	Interactive .Lecture	BCQs, SEQs, OSPE, Viva
9.	Demonstrate histological features of bones	FND-S1- **Ana-H-12** Histology of bones	Interactive. Lecture	BCQs, SEQs, OSPE, Viva
10.		FND-S1- **Ana-H-13** **Epithelium**	Interactive Practical	BCQs, SEQs, OSPE, Viva
		PHYSIOLOGY		
11.	Introduction of Physiology experiments and introduction to power-lab.	**(Fnd-Phy-1)** Power lab	Interactive Practical	BCQs, SEQs, OSPE, Viva
12.	Identify the indications of hand washing / Demonstrate the protocols and steps of hand washing in sequential manner	**(Fnd-Phy-2)** Hand washing	Interactive Practical	BCQs, SEQs, OSPE, Viva

BIOCEMISTRY				
13.	Apply the basic knowledge of carbohydrates in chemistry for health	FND-S1- **Bioc-11** carbohydrate : introduction , classification and its biochemical significance	Interactive lecture	BCQs, SEQs, OSPE, Viva
14.	Describe the Biochemical structure of polysaccharides with its clinical importance	FND-S1- **Bioc-12** Monosaccharides : Classification, Structure, Functions	Interactive lecture	BCQs, SEQs, OSPE, Viva
15.	Discuss functions of carbohydrates in cell membrane, energy provision and nutrition supply to different parts of body	**FND-S1- Bioc-13** Chemical Properties & Derivatives of Monosaccharides & their biochemical significance in biological systems.	Interactive .lecture	BCQs, SEQs, OSPE, Viva
16.	Describe Different isomers of monosaccharides e.g Glactose, mannose, fructose, dextrose.	**FND-S1- Bioc-14** Isomerism: Structural & Optical Isomerism in carbohydrates & their biochemical significance.	Interactive .lecture	BCQs, SEQs, OSPE, Viva
17.	Explain Structure of disaccharides and oligosaccharides	**FND-S1- Bioc-15** Glycosidic Linkage, Biologically important disaccharides and oligosaccharides	Interactive .lecture	BCQs, SEQs, OSPE, Viva
18.	Describe classification of polysaccharides and their functions.	**FND-S1-Bioc-16** Polysaccharides: Classification, Structure & Functions of Homopolysaccharides	Interactive .lecture	BCQs, SEQs, OSPE, Viva
19.	Detection of an unknown carbohydrate in a given fluid	**FND-S1-Bioc-17** Molisch's Test, Iodine Test, Benedict's Test	Interactive Practical	OSPE, Viva
20.		**FND-S1-Bioc-18** Selivanoff's Test, Barfoed's Test, Osazone Test	Interactive Practical	OSPE, Viva
21.	Classify amino acids on the basis of their polarity, charge & nutritional significance.	**FND-S1- Bioc-19** Classification of Amino Acids on the basis of their structure & Nutrition, & their role in human metabolism-I	Interactive .lecture	BCQs, SEQs, OSPE, Viva
22.	Describe biochemical reactions of amino acids & significance of non-essential amino acids	**FND-S1- Bioc-20** Classification of Amino Acids on the basis of their structure & Nutrition, & their role in human metabolism-II	Interactive .lecture	BCQs, SEQs, OSPE, Viva
23.	Describe physico-chemical classification of proteins. What is functional classification of proteins? How proteins are classified on the basis of their axial ratio?	**FND-S1- Bioc-21** Classification of Proteins on the basis of biophysical significance, Axial Ratio and functions.	Interactive .lecture	BCQs, SEQs, OSPE, Viva

24.	Describe the structural levels of proteins and their important biochemical features.	**FND-S1- Bioc-22** Structural Organization of Proteins	Interactive .lecture	BCQs, SEQs, OSPE, Viva
25.	Tests for detection of unknown amino acid/protein in a given fluid	**FND-S1- Bioc-23** General Tests Color Reaction Tests	Interactive Practical	OSPE, Viva
26.		**FND-S1- Bioc-24** Separation Tests Precipitatio n Tests	Interactive Practical	OSPE, Viva
27.	• What are enzymes? • How enzymes are classified? • How enzyme catalyze biochemical reactions within living systems?	**FND-S1- Bioc-25** Enzymes: Classification, How Enzymes work?	Interactive .lecture	BCQs, SEQs, OSPE, Viva
28.	Describe kinetics of enzymes.	**FND-S1- Bioc-26** Enzyme Kinetics	Interactive .lecture	BCQs, SEQs, OSPE, Viva
29.	➢ Describe factors affecting enzyme activity. ➢ Describe properties of enzymes. ➢ What is enzyme inhibition & its types.	**FND-S1- Bioc-27** Enzymes: Properties, factors affecting Enzymes' activity, Enzyme Inhibtion	Interactive .lecture	BCQs, SEQs, OSPE, Viva
30.	Discuss the significance of Lipids for balanced diet and Health	**FND-S1- Bioc-28** Lipids: Classification & Biochemical significance.	Interactive lecture	BCQs, SEQs, OSPE, Viva
31.	General Tests for Lipids	**FND-S1- Bioc-29** Solubility, Oily nature, Emulsification, Saponification Tests	Interactive Practical	OSPE, Viva
		PHARMACOLOGY		
32.	Explain biotransformation & enlist phase I and phase II biotransformation reactions	**Fnd-S1-Phrm-6** Drug Biotransformation Phase I Reactions	Interactive .lecture	BCQs, SEQs, OSPE, Viva
33.	Explain biotransformation & enlist phase I and phase II biotransformation reactions	**Fnd-S1-Phrm-7** Drug Biotransformation Phase II reactions	Interactive .lecture	BCQs, SEQs, OSPE, Viva

COMMUNITY MEDICINE				
34.	To discuss the Indicator vs health index To define Uses of indicators To identify the Characteristics of good health indicator To explain the Common indicators metrics To describe the Types of indicators Index Human development index(HDI), Human poverty index(HPI)	**Fnd-S1-CM-5** Health Indicators	Interactive .lecture	BCQs, SEQs, OSPE, Viva

Theme 5: Fundamental tissues/systems of the human body Real life scenario:

A young patient came to her family physician with complain of a swelling in the axilla. The physician examined the breast of the patient carefully for the primary tumor as she was suspecting the axillary swelling due to lymph nodes enlargement due to primary tumor in the breast.

Points to consider:

1. Why it is important to know the lymphatic drainage of all major organs of body? 2. Why it is important to find the primary site of the disease?

Real life scenario:

A new born baby examined by Pediatrician found to have a lump at the level of lumber 4 vertebrae with bilateral talipes equino varus. The defect is most commonly due to Spina bifida with meningomylocele, one of the congenital anomaly resulted from abnormal development of neural tube. Mother gave history of having a previous child born with similar defect and despite advice by her GP she never took folic acid during her pregnancies.

Points to consider:

- Development of neural tube is complicated process where closure of neuropores is significant event. What are the common sites of failure of neural tube to close? What are the types of spina bifida along with functional impairments and management options with prognosis?
- Why it is significant to provide her balanced diet containing folic acid along with carbohydrates, proteins and fats immediate basis

Now you wonder **how you can find out about the necessary information**.

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S. No	Objectives	Topics	Teaching Strategy	Assessment
		Anatomy		
1.	Recognize the role of Skin, fascia, cartilage and bones and their component tissues in Support and Protection	**(Fnd-S1-Ana-H-14)** Introduction to Integumentary system: Microscopic anatomy of skin and fascia	Interactive Lecture	SBQs, SEQs, OSPE
2.	Describe the histological features of muscular tissue	**(Fnd-S1-Ana-H-15)** Histology of the Muscular tissue	Interactive Lecture	SBQs, SEQs, OSPE
3.	Explain the basic structure and functions of blood vessels.	**(Fnd-S1-Ana-H-16)** Blood vascular system (CAPILLARIES, ARTERIES, VEINS, ANASTOMOSIS)	Interactive Lecture	SBQs, SEQs, OSPE
4.	Correlate Movement and Posture of human body with the structure of muscles and joints.	**(Fnd-S1-Ana-G-10)** Definition and classification of muscles	Demonstration	SBQs, SEQs, OSPE, Viva
5.	Integrate the function of Defense with the structure of lymph nodes and lymphatics	**(Fnd-S1-Ana-G-11)** Introduction to lymphoid system:	Interactive Lecture	SBQs, SEQs, OSPE
6.	Correlate the functions of Control and Regulation with the knowledge of arrangement and Distribution of NERVOUS SYSTEM.	**(Fnd-S1-Ana-G-12)** Nervous System Division CNS, PNS Neurons: Types Classification, Nerve (With Its Covering) & Myelin	Interactive Lecture	SBQs, SEQs, OSPE
7.		**(Fnd-S1-Ana-G-13)** Formation and structure of Typical Spinal Nerve	Interactive Lecture	SBQs, SEQs, OSPE
8.		**(Fnd-S1-Ana-G-14)** General Concepts of Autonomic nervous system	Interactive Lecture	SBQs, SEQs, OSPE
9.		**(Fnd-S1-Ana-H-17)** Histology of nerve cells	Interactive Lecture	SBQs, SEQs, OSPE
10.		**(Fnd-S1-Ana-E-02)** Overview of Male and female reproductive system	Interactive Lecture	SBQs, SEQs, OSPE
11.	Describe the process of Gametogenesis	**(Fnd-S1-Ana-E-3)** Gametogenesis	Interactive Lecture	SBQs, SEQs, OSPE
12.	Discuss ovulation and phases and outcomes of fertilization	**(Fnd-S1-Ana-E-4)** Ovulation fertilization	Interactive Lecture	SBQs, SEQs, OSPE
13.	Enumerate the events of first week of development	**(Fnd-S1-Ana-E-5)** First week of development(cleavage and blastocyst formation and implantation)	Interactive Lecture	SBQs, SEQs, OSPE
14.		**(Fnd-S1-Ana-E-6)** the second week of development (Formation of amniotic cavity, amnion, bilaminar embryonic disc, yolk sac, chorionic sac and primary chorionic villi)	Interactive Lecture	SBQs, SEQs, OSPE
15.		**Gynecology** Clinical Lecture	Interactive Lecture	SBQs, SEQs, OSPE

PHYSIOLOGY				
16.	Describe the Physiological Concepts and organization of nervous system	**FND-S1- Phy-15** Introduction Organization of the Nervous system	Interactive Lecture	SBQs, SEQs, OSPE
17.	Describe the basic Structure and function of neuron & neuroglia	**FND-S1- Phy-16** **Neuron and neuroglia**	Interactive Lecture	SBQs, SEQs, OSPE
18.	Define synapse & give it types Describe passage of impulse via synapse	**FND-S1- Phy-17** **Synapses and neural integration**	Interactive Lecture	SBQs, SEQs, OSPE
BIOCHEMISTRY				
19.	Classifiy Biochemical role of Macro minerals (Na, K, Ca, Cl, PO4) Micro minerals (Fe, Zn, Mg, Se, I, Cu, Cr, Cd, Mn)	**FND-S1- Bioc-30** Classification and Biochemical role of Macro minerals (Na, K, Ca, Cl, PO4) Micro minerals (Fe, Zn, Mg, Se, I, Cu, Cr, Cd, Mn)	Interactive Lecture	SBQs, SEQs, OSPE
20.	Describe classification of vitamins and their general functions.	**FND-S1- Bioc-31** **Vitamins:** Classification & General Functions of Vitamins	Interactive lecture	SBQs, SEQs, OSPE
PHARMACOLOGY				
21.	Describe drug excretion & enlist routes of drug excretion	**Fnd-S1-Phrm-8** Drug Excretion	Interactive Lecture	SBQs, SEQs, OSPE
COMMUNITY MEDICINE				
22.	To discuss the important global health issues To understand the important public health issues of Pakistan To define the health inequalities Developing vs developed, urban vs, rural, rich vs oor, male vs female To discuss the Health and its relationship with development To learn global development goals Millennium Development goals (MDGs) Sustainable Development Goals (SDGs)	**FND-S1-CM-6** Global and Local health issues & Global Health Agendas	Interactive Lecture	SBQs, SEQs, OSPE

Theme 6: Development, differentiation and Growth

Real Life Scenario

A young lady brought to emergency with severe abdominal pain and vaginal bleeding, also give the history of amenorrhea since two months. Her ultrasound scan reveals empty uterus and a mass in right fallopian n tube suggestive of ectopic pregnancy?

Points to consider:

- What are the normal and abnormal sites of implantation?
- How and when implantation occurs?
- Why graft versus host reaction does not occur during implantation?

Now you wonder **how you can find out about the necessary information**.

- There are a number of lectures, small group discussions and clinical skills sessions scheduled in your module. You may go through second week timetable to see whether they may be useful.

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S. No	Objectives	Topics	Teaching strategy	Assessment
		ANATOMY		
1.		**Fnd-S1-CL-1** Ectopic pregnancy	Interactive Clinical lecture	
2.	Explain main events of third week of development	**(Fnd-S1-Ana-E-7)** Formation of primitive streak, Gastrulation and notochord	Interactive Lecture	SBQs, SEQs, OSPE
3.		**(Fnd-S1-Ana-E-8)** Formation of neural tube and Formation of somites	Interactive Lecture	SBQs, SEQs, OSPE
4.	Describe the process of folding of embryo, Formation of intra embryonic coelom and its Outcomes	**(Fnd-S1-Ana-E-9)** the process of folding of embryo, Formation of intra embryonic coelom and its outcomes	Interactive Lecture	SBQs, SEQs, OSPE
5.	Enlist the derivatives of three germ layers	**(Fnd-S1-Ana-E-10)** Derivatives of ectodermal germ layers and neural crest cells	Interactive Lecture	SBQs, SEQs, OSPE
6.	Enlist the derivatives of mesodermal and endodermal germ layers	**(Fnd-S1-Ana-E-11)** Derivatives of mesodermal germ layers and neural crest cells Derivatives of endodermal germ layers and neural crest cells	Interactive Lecture	SBQs, SEQs, OSPE
7.	Discuss the significant weekly events of embryonic period from 4th week to 8th week and during the organogenesis period Discuss the major events of fetal period	**(Fnd-S1-Ana-E-12)** 4th week to 8th week and during the organogenesis period, the major events of fetal period	Interactive Lecture	SBQs, SEQs, OSPE
8.	Explain the interchange of substances between maternal and fetal blood by applying the knowledge of structure and functions of placenta and fetal Membranes	**(Fnd-S1-Ana-E-13)** Placenta and fetal membranes	Interactive Lecture	SBQs, SEQs, OSPE

Theme 7: Genetics and developmental anomalies

Real Life Scenario

40-years old pregnant lady, after having 12 weeks ultrasound was advised for further investigations to rule out chromosomal and genetic abnormalities in developing fetus dueher advancing age and abnormalities in nuchal translucency measurements on ultrasonography.

Points to consider:

- What is the most common cause of abnormal chromosome number? Give example of a clinical syndrome involving abnormal numbers of chromosomes.
- In addition to numerical abnormalities, what types of chromosomal alterations occur?
- What investigations are useful for screening and diagnosis of chromosomal Abnormalities?

Now you wonder **how you can find out about the necessary information**.

- There are a number of lectures, small group discussions and clinical skills sessions scheduled in your module. You may go through second week timetable to see whether they may be useful.
- This will help you with some of the learning issues at this stage of medical education but you decide to concentrate on selected issues at this stage.

You can decide to look for other sources of information that may be helpful, at a later

S. No	Objectives	Topics	Teaching strategy	Assessment
		ANATOMY		
1.	Define teratogenesis and the basic principles of teratogenesis. Categorize the common teratogens	**(Fnd-S1-Ana-E-14)** Teratogenesis	Interactive lecture	BCQs, SEQs, OSPE, Viva
2.	Explain the types of twin / multiple pregnancies and clinical significance	**(Fnd-S1-Ana-E-15)** Twin pregnancy	Interactive lecture	BCQs, SEQs, OSPE, Viva
3.	Calculate the expected date of delivery (EDD) and describe various methods used to assess fetal wellbeing	FND-S1-OBGY-1	Int. Clinical lecture	
		BIOCHEMISTRY		
4.	Apply the basic concepts of Chemistry to understand the structure of nucleic acids and their types to understand the concept of genetic material & the importance of its integrity in survival of living species.	**FND-S1- Bioc-32** Nucleic Acids: Basic Biochemical structure, Types of nucleic acids, functions.	Interactive lecture	BCQs, SEQs, OSPE, Viva
5.	Describe the DNA replication in Prokaryotes & Eukaryotes with special focus on the differences between them.	**FND-S1- Bioc-33** DNA Replication in Prokaryotes & Eukaryotes.	Interactive Lecture	SBQs, SEQs, OSPE
6.	Explain the process of Transcription in both prokaryotes & Eukaryotes as a component of Mechanism of Gene Expression.	**FND-S1- Bioc-34** Transcription & Post-Transcriptional Modifications	Interactive Lecture	SBQs, SEQs, OSPE
7.	Describe the importance of Translation and post-translational modifications in Gene Expression and the Growth & development of a living species.	**FND-S1- Bioc-35** Translation & Post-Translational Modifications	Interactive Lecture	SBQs, SEQs, OSPE
		PHYSIOLOGY		
8.	Describe Physiological basis of gene and functions of DNA and RNA	**FND-S1- Phy-18** DNA ,Gene, Genetic code RNA ,Types,codan ,anti codan	Interactive lecture	BCQs, SEQs, OSPE
9.		**FND-S1- Phy-19** Control of gene functions	Interactive lecture	BCQs, SEQs, OSPE
		PHARMACOLOGY		
10.	Explain the term 'pharmacodynamics &Explain the terms affinity, efficacy, intrinsic activity & potency	**Fnd-S1-Pharm-09** Introduction to Dynamics & **Drug Receptors** A. Relation between drug concentration & response & signaling Mechanism	Interactive lecture	BCQs, SEQs, OSPE

11.		**Fnd-S1-Pharm-10** **Drug Receptors** B. Second messengers & receptor regulation	Interactive lecture	BCQs, SEQs, OSPE
12.	Describe the general mechanisms by which drugs act	**Fnd-S1-Phrm-11** Factors Modifying drug action &Therapeutics Index	Interactive lecture	BCQs, SEQs, OSPE
13.	Correlate the principles of general pharmacology for the appropriate therapy of disorders / diseases	**Fnd-S1-Phrm-12** Adverse drug reaction (ADR)	Interactive lecture	BCQs, SEQs, OSPE
14.		**Fnd-S1-Phrm-13** Teratogenic drugs	Interactive lecture	BCQs, SEQs, OSPE
PATHOLOGY				
15.	Define Mutation and its type. Describe the effects of different types of mutations	**FND-S1- Path-11** Mutations	Interactive lecture	BCQs, SEQs, OSPE
16.	Define Mendelian Disorder Explain the pattern of inheritance in Mendalian Disorders List the examples of autosomal, Recessive and sex linked disorders.	**FND-S1- Path-12** Mendelian Disorders	Interactive lecture	BCQs, SEQs, OSPE
17.	Describe the normal Karyotype Discuss various numerical and structural abnormalities of chromosomes.	**FND-S1- Path-13** Chromosomal aberration.	Interactive lecture	BCQs, SEQs, OSPE
18.	. Discuss various technique in diagnosis of genetic diseases.	**FND-S1- Path-14** Diagnosis of Genetic Diseases	Interactive lecture	BCQs, SEQs, OSPE
19.	Enlist the methods of DNA transfer in microorganisms describe the types of mutations in bacteria	**FND-S1- Path-15** Bacterial genetics	Interactive lecture	BCQs, SEQs, OSPE
20.	Describe causes and pathogenesis of congenital fetal abnormalities	**FND-S1- Path-16** Congenital fetal abnormaliti es	Interactive lecture	BCQs, SEQs, OSPE
COMMUNITY MEDICINE				
21.	To define the Primary Health Care (PHC) and Alma Ata Declaration To discuss the Universal Health Care (UHC) and Astana declaration	**FND-S1-CM-7** Primary Health Care Concepts and progress	Interactive lecture	BCQs, SEQs, OSPE, Viva

PEOPLES UNIVERSITY OF MEDICAL & HEALTH SCIENCES FOR WOMEN

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WEEKLY TIME TABLE

WEEK 01: FOUNDATION MODULE (THEME: 01. Cell Structure, Chemistry and Function)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:30 am to 9:30 am	Anatomy	Anatomy	Biochemistry	Biochemistry	Microbiology	
9:30 am to 10:30 am			Physiology	S.D.L Phyo Deptt ALL FACULTY	Pharmacology	
10:30 am to 11:30 am	Physiology	Physiology	Anatomy	Microbiology	CBL Anatomy Physiology Biochemistry	
11:30 am to 12:00 noon	**B R E A K**				12-30 pm to 01-30pm	
12:30 am to 01:30 pm	Anatomy	Medicine	Biomedical Ethic	AMTOMY		
01:30 pm to 02:30 pm PRACTICAL	Group: A Group: B Group: C	Group: C Group: A Group: B	Group: B Group: C Group: A	Group: A R.NO1- TO 50 SKILL LAB Group: B R.NO.51- to 100 I.T LAB	FROM 1-30PM ONWORD BREAK & JUMA PRAYER	
PRACTICAL TOPICS	Histology : Physiology : Biochemistry:					

VENUE: LECTURE HALL :_____

Effective from: _____ MARCH to _____ MARCH , 2023 .

DIRECTOR ACADEMICS
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WEEKLY TIME TABLE

WEEK 02: FOUNDATION MODULE (THEME: 02.Body Fluids: Composition, Function and Homeostasis)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:30 am to 9:30 am	Anatomy	Pharmacology	Biochemistry	Biochemistry	I.T	TEST
9:30 am to 10:30 am		Biochemistry	Pharmacology	Physiology	Pathology	
10:30 am to 11:30 am	Biochemistry	Pathology	BME	Pathology	12-30 pm To 01-30pm	
11:30 am to 12:00 noon	BREAK				12-30 pm to 01-30pm	
12:30 am to 01:30 pm	Physiology	Anatomy	Physiology	Community Medicine		
01:30 pm to 02:30 pm PRACTICAL	Group: A Group: B Group: C	Group: C Group: A Group: B	Group: B Group: C Group: A	Group: A R.NO: __ to ___ SKILL LAB Group: B R.NO.____ to ____ I.T LAB	FROM 1-30 pm ONWORD BREAK & JUMA PRAYER	
PRACTICAL TOPICS	Histology : Physiology : Biochemistry:					

VENUE: LECTURE HALL: _____,

Effective from: _____ MARCH to _____ MARCH, 2023 .

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WEEKLY TIME TABLE

WEEK 04 FOUNDATION MODULE (THEME: 04.Macromolecules Fundamental tissues /Systems of the human body)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:30 am to 9:30 am	Anatomy	Pharmacology	Biochemistry	Biochemistry	I.T	
9:30 am to 10:30 am		Biochemistry	Pharmacology	Physiology	Pathology	
10:30 am to 11:30 am	Biochemistry	Pathology	BME	Pathology	12-30 pm To 01-30pm	
11:30 am to 12:00 noon	B R E A K				12-30 pm to 01-30pm	
12:30 am to 01:30 pm	Physiology	Anatomy	Physiology	Community Medicine		
01:30 pm to 02:30 pm PRACTICAL	Group: A Group: B Group: C	Group: C Group: A Group: B	Group: B Group: C Group: A	Group: A R.NO: ___ to ___ SKILL LAB Group: B R.NO.____ to ____ I.T LAB	FROM 1-30 pm ONWORD BREAK & JUMA PRAYER	
PRACTICAL TOPICS	Histology : Physiology : Biochemistry:					

VENUE: LECTURE HALL: _____,

Effective from: _____ MARCH to _____ MARCH, 2023 .

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WEEKLY TIME TABLE

WEEK 05 FOUNDATION MODULE (THEME: 05. FUNDAMENTAL TISSUES /SYSTEMS OF THE HUMAN BODY)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:30 am to 9:30 am	Anatomy	Biochemistry	Anatomy	Biochemistry	SKILL LAB	
9:30 am to 10:30 am		Pharmacology		Physiology		
10:30 am to 11:30 am	Biochemistry	Pathology	BME	BEH	Biochemistry	
11:30 am to 12:00 noon	**B R E A K**				12-30 pm to 01-30pm	
12:30 am to 01:30 pm	Pathology	Anatomy	Biochemistry	Anatomy		

VENUE: LECTURE HALL: _____,

Effective from: _____ MARCH to _____ MARCH, 2023 .

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WEEKLY TIME TABLE

WEEK 06: FOUNDATION MODULE (THEME: 06.Nervous System. Development, Differentiation and Growth)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:30 am to 9:30 am	Anatomy	Anatomy	Biochemistry	Anatomy	I.T LAB SKILL LAB	
9:30 am to 10:30 am		Physiology	Physiology			
10:30 am to 11:30 am	Biochemistry	Anatomy	Anatomy	Physiology	CBL 12-30 pm to 01-30pm	
12:30 am to 01:30 pm PRACTICAL	Group: A Group: B Group: C	Group: C Group: A Group: B	Group: B Group: C Group: A	Group: A R.NO: ___ to ___ SKILL LAB Group: B R.NO.____ to ____ I.T LAB	FROM 1-30 pm ONWORD BREAK & JUMA PRAYER	Anatomy FROM 1-30 pm ONWORD BREAK & JUMA PRAYER
PRACTICAL TOPICS	Histology : Physiology : Biochemistry:					

VENUE: LECTURE HALL: _____,

Effective from: _____ MARCH to _____ MARCH, 2023 .

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WEEKLY TIME TABLE

WEEK 07 FOUNDATION MODULE (THEME: 07. Genetics and developmental anomalies)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:30 am to 9:30 am	Anatomy	Physiology	Anatomy	Community Medicine	Biochemistry	
9:30 am to 10:30 am	Pharmacology	Pathology	Pathology	Anatomy	Pharmacology	
10:30 am to 11:30 am	Pathology	Anatomy	Community Medicine	Pathology y	Physiology	
11:30 am to 12:00 noon	Anatomy	Pathology	Pathology	BEH	Anatomy	
	Biochemistry:					

VENUE: LECTURE HALL: _____,

Effective from: _____ MARCH to _____ MARCH, 2023 .

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BOOKS RECOMMENDED

ANATOMY

- Clinical Anatomy by Richard S Snell, Cunningham's Manual of Anatomy
- Wheatears Histology, Langman's Embryology, Keith L. Moore Embryology

PHYSIOLOGY

- Text Book of Physiology by Guyton & Hall, Review of Physiology by Ganong
- Physiology Journal for Practical

BIOCHEMISTRY

- Harper's Illustrated Biochemistry. By: Robert k. Murray.
- Textbook of Medical Biochemistry. By: Chatterjee.
- Lippincott's Illustrated Review Biochemistry. By: Champe
- Textbook of Biochemistry with clinical correlations. By: Devin TM.

PHARMACOLOGY

- Text book of Pharmacology by Katzung Latest Edition
- Review of Katzung
- Illustrated Review of Pharmacology by Lippincott Latest Edition

GENERAL PATHOLOGY

- Basic of Pathology Latest Edition (Robbins)
- Basis of Disease of Pathology Latest Edition (Robbins)

MICROBIOLOGY

- Textbook by Levenson
- Textbook by Jawetz

PARASITOLOGY

- Text book by Chatterjee
- Text book by Black Lock

COMMUNITY MEDICINE

- Text book of Community Medicine & public health by Ilyas
- Text Book of Prevention & Social Medicine by J E PARK